Agri-Food and Biosciences Institute

Department of Agriculture and Rural Development

PESTICIDE USAGE IN NORTHERN IRELAND
SURVEY REPORT 260

NORTHERN IRELAND ARABLE CROPS 2014

Agriculture, Fishing and Forestry

A National Statistics Publication

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PESTICIDE USAGE SURVEY REPORT 260

NORTHERN IRELAND

ARABLE CROPS

2014

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The County Regions of Northern Ireland

SUMMARY

This is the thirteenth survey of pesticide usage practices on arable crops in Northern Ireland, providing comparative data to that obtained in the previous surveys in 1990, (Jess *et al*., 1992), 1992 (Jess *et al*., 1995), 1994 (Jess *et al*., 1997), 1996 (Jess *et al*., 2000), 1998 (Jess *et al*., 2002), 2000 (Withers *et al*., 2004), 2002 (Withers *et al.,* 2004), 2004 (Withers *et al.,* 2006) 2006 (Withers *et al.,* 2007), 2008 (Withers *et al*.,2009) 2010 (Withers *et al*.,2011) and 2012 (Withers *et al*.,2013).

Information on all aspects of pesticide usage was collected from 172 holdings throughout the Province, representing 20% of the total area of arable crops grown. Quantitative data has been adjusted to provide estimates of total pesticide usage.

The total area of arable crops grown in Northern Ireland in 2014 was 38,843 hectares. This is the lowest cropping area recorded since records began in 1990. This represented a decrease of 7% compared to that recorded in 2012 and a 37% reduction compared to that recorded in the first pesticide usage survey of the arable sector, in 1990. Approximately 44% of the arable cropping area in 2014 was in County Down, 26% in County Londonderry, 15% in County Antrim, 8% in County Armagh and 7% in County Tyrone. This distribution is similar to that recorded in 2006 - 2012. There was no significant area of arable cropping in County Fermanagh.

A total of 321 products (including 7 adjuvants), comprising 135 active substances were recorded in use on field crops in the survey.

During the period 2012 to 2014, applications of all pesticide groups decreased, with the area of arable crops treated with pesticides decreasing by 11%, to 335,215 spray hectares. This was a similar level to that recorded in 2010. Fungicide applications decreased by 11%, with chlorothalonil, either applied as a single active substance or in combination, the most frequently applied to cereal crops, especially spring barley and winter wheat. Herbicides and desiccant applications decreased by 7%. Glyphosate was the most frequently applied, accounting for 23% of herbicide and desiccant applications. Insecticide applications decreased by 21% when compared with 2012 and the weight applied increased by 28%. This was due to increased applications of the feeding blocker, flonicamid, exclusively to seed and maincrop potatoes to control aphids. Pyrethroids were the most frequently applied insecticides representing 87% of all insecticide applications. Esfenvalerate was the most frequently applied pyrethroid, primarily to spring and winter barley along with winter wheat crops, to control aphids. Growth regulator applications decreased by 1% when compared to 2012. The principal growth regulator used in 2014 was chlormequat, which is consistent with previous surveys conducted in 1998-2012. In 2014, growth regulators were applied primarily to winter barley, spring wheat, winter wheat and, most frequently, to spring barley. Molluscicide applications decreased by 62% when compared with 2012. All molluscicide applications were to control slugs. The total weight of pesticides applied to arable crops in 2014 decreased to 118 tonnes of active substances, representing a 10% reduction compared with 2012 and 13 %, 30% and 50% reduction when compared with 2010, 2008 and 2006, respectively. Seed treatment applications decreased by 16% and the weight applie by 20%. In keeping with 2004 and 2006 data, the single active substance fludioxonil was the most commonly applied cereal seed treatment in 2014. This contrasted with 2008 and 2010 where the formulation prochloraz/triticonazole was the most commonly applied to these crops. The formulation imazalil/pencycuron was the most commonly applied seed treatment on potatoes.

During 2014, regional pesticide usage was related to the area of arable crops grown in each county. Pesticides were applied to 99% of the total area of arable crops grown in Northern Ireland in 2010 with a range of 1 – 10 applications per crop.

Fungicides were applied to 42% of the pesticide-treated area, accounting for 45% of the total weight of pesticides used. Herbicides and desiccants were applied to 32% of the pesticide-treated area, representing 39% of the total weight of pesticides used. Insecticides accounted for 7% of the pesticide-treated area of arable crops, representing 2% of the weight of pesticides used. Molluscicide treatments represented less than 1% of both area of application and weight of pesticides applied. Growth regulator usage accounted for 9% of the pesticide-treated area and 12% of the weight of active substances applied. Seed treatments were applied to 10% of the area of arable crops grown in 2014, representing 2% of the weight of active substances applied.

Potato crops comprised 10% of the area of arable crops grown in Northern Ireland in 2012, accounting for 16% of the total pesticide-treated area. However, the weight of pesticides applied to potato crops represented 26% of the total weight of pesticides used on all arable crops. The total area of potatoes grown comprised 96% maincrop/seed and 4% early potato crops. Potato crops accounted for 27% of the area of arable crops treated with fungicides and received 42% of the total weight of fungicides applied. Furthermore, applications of herbicides and desiccants to potato crops represented 13% of the area treated and 17% of the weight applied of this pesticide group. The most commonly recorded fungicide applied to potato crops was fluazinam. Fluazinam was used on 29% of the fungicide-treated area and accounted for 9% of the weight of fungicide active substances applied. It was used primarily in maincrop potatoes to control blight (*Phytophthora infestans*) and for general disease control.

This was the ninth survey in which the cultivation of pea and bean crops was recorded with 54 hectares being grown. This is a five fold increase when compared with 2012.

In addition to information concerning field applications of pesticides to crops, data relating to post-harvest/storage treatments applied to farm-stored potatoes were collected. It was estimated that 41,336 tonnes of potatoes were stored on-farm, following the 2014 growing season. This represented a 40% decrease compared with 2012. No early potatoes were recorded as stored. County Down and County Londonderry accounted for 38% and 32% of all potatoes stored, respectively. No stored potatoes received a pesticide treatment. Approximately 58% of all potatoes in 2014 were stored in 'barn stores' and 25% in 'refrigerated' buildings. Overall, 92% of potatoes were stored on-farm in boxes, while 8% were stored in bulk. A minimal quantity of potatoes were stored on trays.

DEFINITIONS AND NOTES

- 'Basic area' refers to the actual planted area of crop treated with a given pesticide.

- 'Treated area' refers to the total area treated with a pesticide, which includes all repeated applications to the basic area. This is measured in 'spray hectares' (basic area x number of spray applications = spray hectares (spha)).

- 'Reasons for use' refers to the reasons given by the farmer for the use of a particular pesticide. These reasons may sometimes be inappropriate as they may have perceived treatment effects.

- 'Rounding'; due to rounding of figures there may be slight differences in totals both within and between tables.

- 'Spray applications' refers to the number of treatments of any pesticide type to the treated areas.

- 'Comparison tables'; due to restrictions imposed by the foot and mouth outbreak in February 2001 and the inability to complete farm visits, the 2000 report sample size was reduced by over one third. Due to this reduced sample size, data collected on the use of pesticide on potatoes, both grown and stored, was unreliable and had to be omitted from the report. Therefore, when comparisons are made between this, 2012 report, and previous reports, no comparisons can be made with the 2000 report in relation to total treatment of arable crops and both field and storage treatments of early, seed and maincrop potatoes.

- In 2008, the set-aside rate was reduced to zero and the requirement to set-aside land was abolished altogether with effect from 1 January 2009. However, producers may still voluntarily set land aside. For the purpose of this survey set-aside land is not recorded.

- Due to low numbers of seed potato grower's recorded in the survey the results for the seed potato crop were included with those for maincrop potatoes.

INTRODUCTION

As a participant of the UK Working Party on Pesticide Usage Surveys, the Department of Agriculture and Rural Development for Northern Ireland (DARD), conducts a cyclical programme of surveys to examine pesticide usage in all sectors of the agricultural and horticultural industries. Principally, the data collected provides information for consideration by the Expert Committee on Pesticides. However, pesticide usage data may also be used by those involved in residue testing, for public information, provision of data for research and evaluation of trends in pesticide usage.

This is the thirteenth survey of pesticide usage on arable crops grown in Northern Ireland. Previous surveys reported on pesticide usage on arable crops grown in 1990, (Jess *et al*., 1992), 1992 (Jess *et al*., 1995), 1994 (Jess *et al*., 1997), 1996 (Jess *et al*., 2000), 1998 (Jess *et al*., 2002), 2000 (Withers *et al*., 2004), 2002 (Withers *et al.,* 2004), 2004 (Withers *et al.,* 2006) 2006 (Withers *et al.,* 2007), 2008 (Withers *et al*.,2009) 2010 (Withers *et al*.,2011) and 2012 (Withers *et al*.,2013). Data from previous surveys are included in the report for comparative purposes.

A list of published Northern Ireland Pesticide Usage Survey reports is shown in Appendix 1.

METHODS

The sample of holdings to be surveyed was selected from each of the six counties on the basis of the total area of arable crops grown, using data from the Northern Ireland Agricultural Census, June 2013 (Anon., 2014) and also single farm payment data (unpublished). However, due to sampling procedures and the distribution of arable crops in Northern Ireland, no holdings were visited in County Fermanagh. The arable crops grown comprised the following: barley; wheat; oats; spring and winter oilseed rape; peas and beans and potatoes.

The sample was stratified into six size groups, according to the total area of cereal crops grown in each region. Holdings were selected at random within each of the size groups, the number of holdings being proportional to the total area of arable crops grown. In addition, ware and seed potato crops were selected from their own defined size groups province wide.

The purpose of the survey was explained to the occupiers of selected holdings in preliminary correspondence. A total of 172 holdings were contacted during November 2014 to April 2015. A majority of data was collected by personal interview and the remainder by telephone interview. The data collected included: the area of crops grown; area treated; target crop; pesticides used and number of treatments applied. The growers' reasons for pesticide use were also included but may not always seem appropriate as they may have perceived treatment effects. Holdings selected in the original sample that were unable to provide data were replaced with those from the same county and size group held on a reserve list. During analysis, the sample data were raised to the total population level using raising factors calculated from the ratio of the number of farms sampled to the number of farms in the population within each region and size group. A further adjustment factor corrected the data in accordance with the areas of arable crops published in the Northern Ireland Agricultural Census, June 2014 (Anon., 2015). The total number of farms in each size group and the number of farms sampled are shown in Table 1.

The collected data were entered using Oracle, a relational database programme. Validated data were downloaded for analysis using SPSS software.

Crops

Information was collected on spring barley; undersown barley; winter barley; spring wheat; winter wheat; undersown wheat; spring oats; undersown oats; winter oats; spring & winter oilseed rape; triticale; peas & beans seed potatoes; early potatoes and maincrop potatoes.

Data on pesticide usage on these crops were collected from 548 crops surveyed on 172 holdings. This accounted for 20% of crops (table 2).

Figure 1: Comparison of the areas of arable crops grown in Northern Ireland (ha), 1990 - 2014.

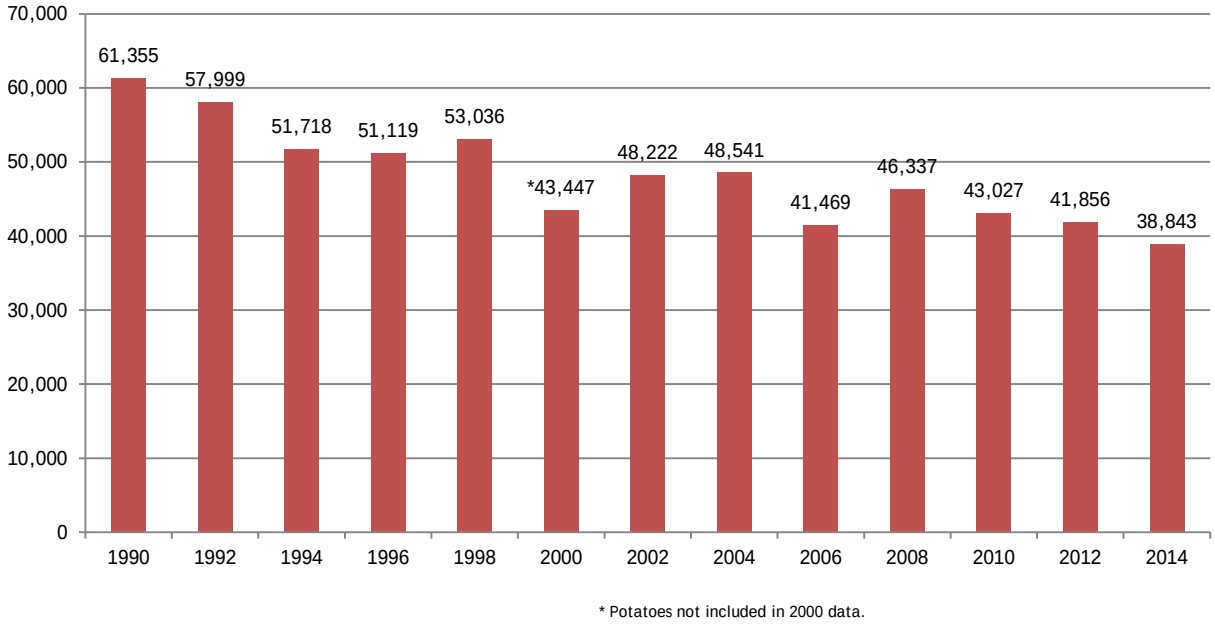


Figure 2: Regional distribution of arable crops grown in Northern Ireland (ha), 2014.

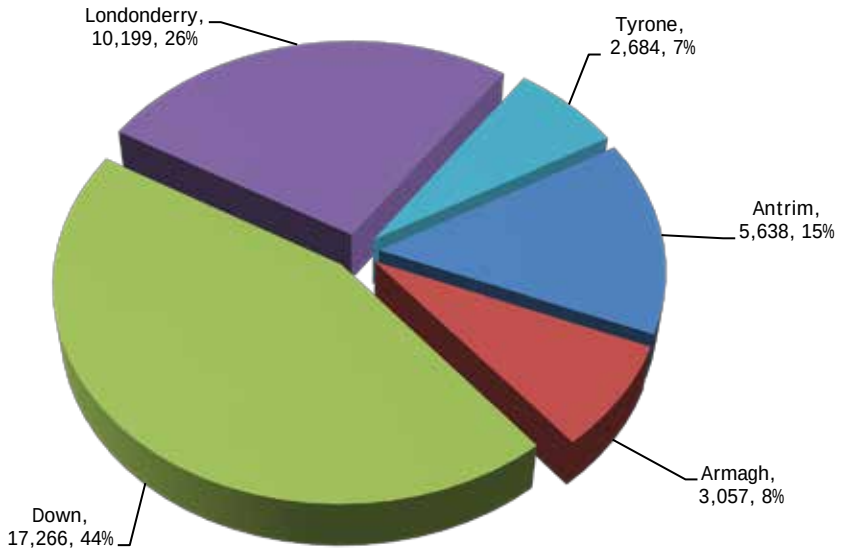


Figure 3: Regional distribution of individual arable crops grown in Northern Ireland (ha), 2014.

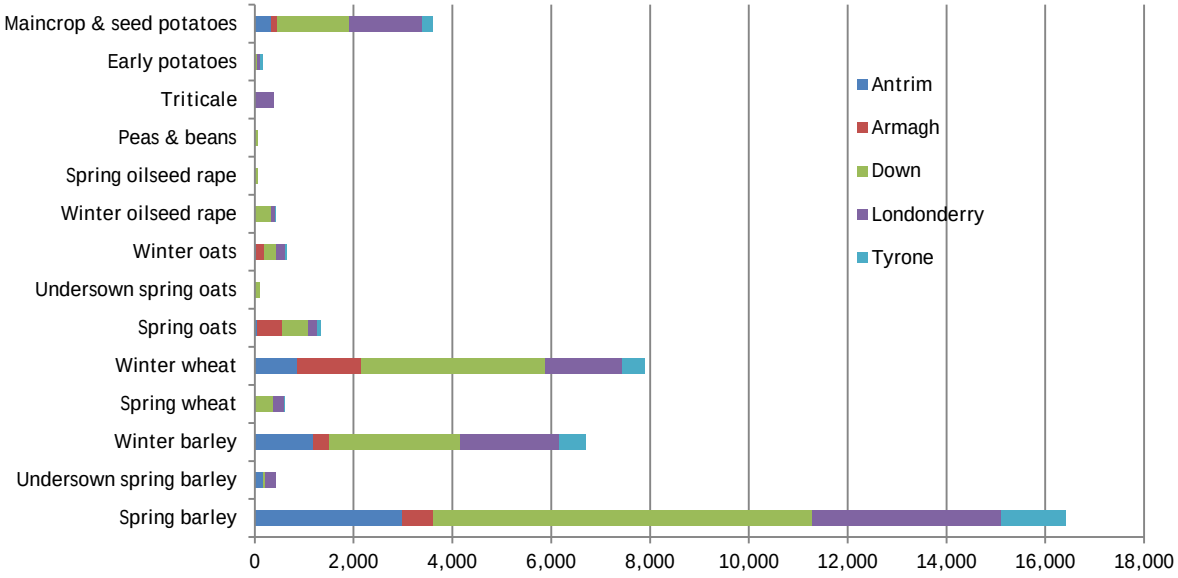


Figure 4: Areas of individual crops grown in Northern Ireland (ha), 2014.

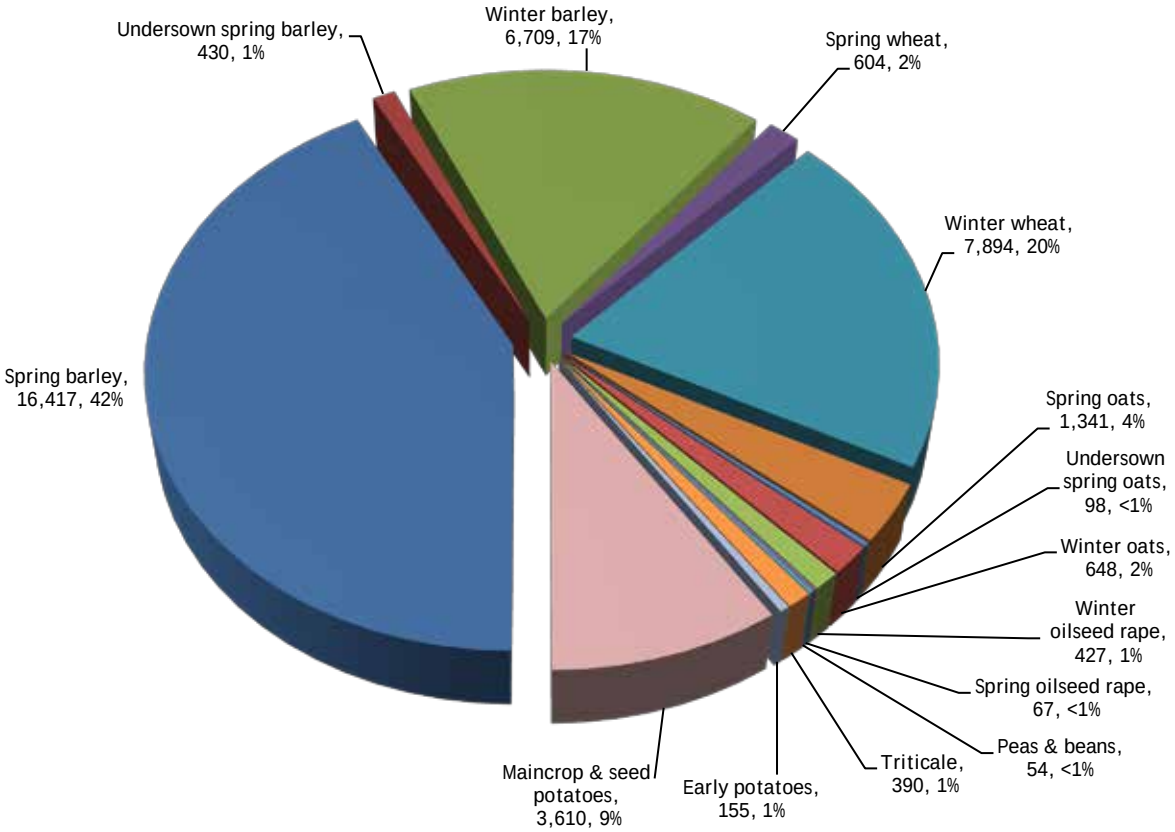


Figure 5: Comparison of the areas of cereal crops grown in Northern Ireland (ha), 1990 - 2014.

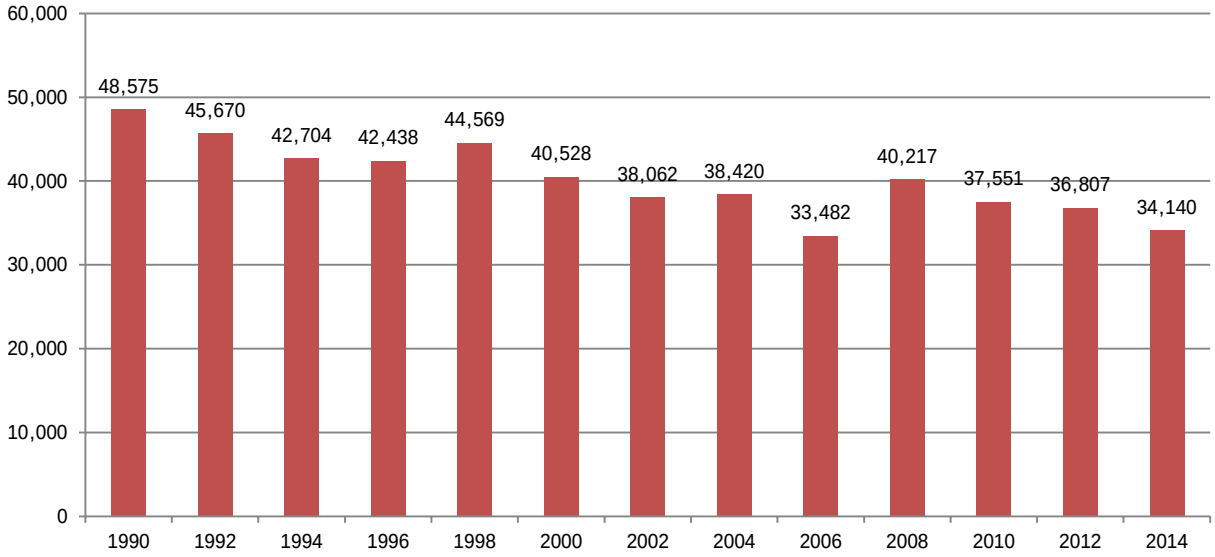


Figure 6: Regional distribution of cereal crops grown in Northern Ireland (ha), 2014.

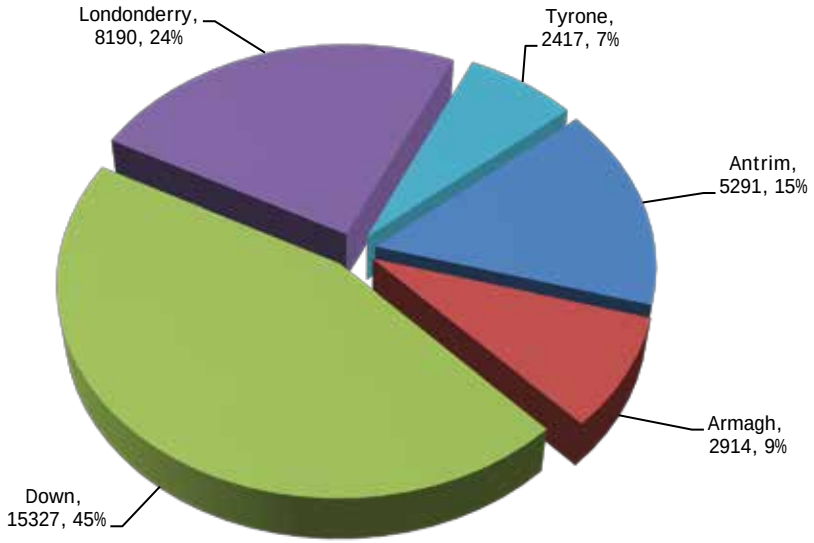


Figure 7: Comparison of the areas of potato crops grown in Northern Ireland (ha), 1990 - 2014.

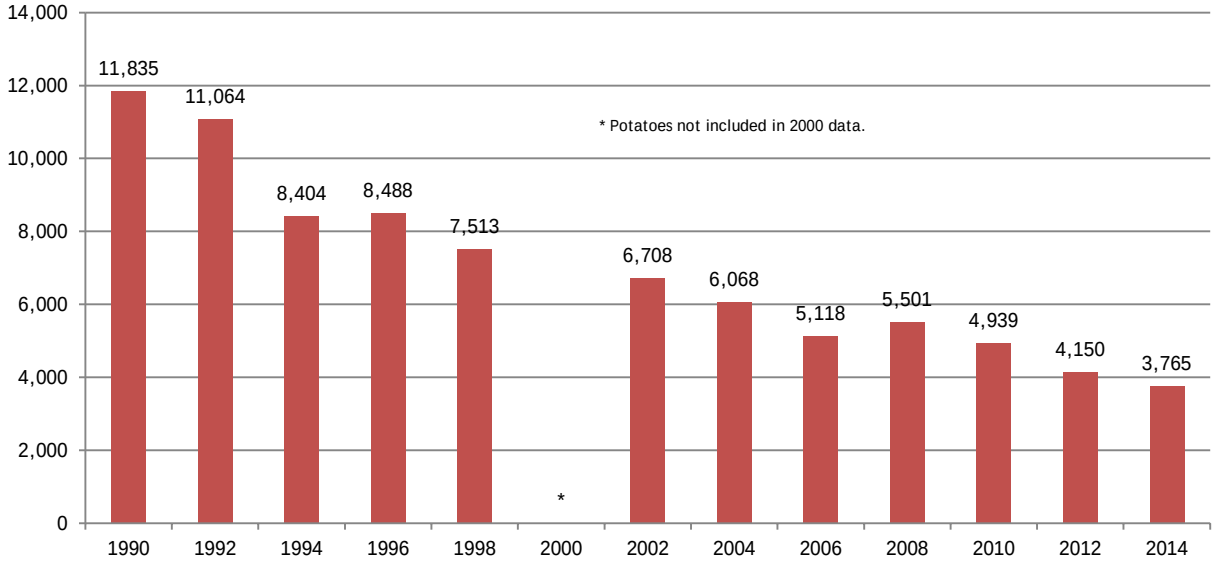


Figure 8: Regional distribution of potato crops grown in Northern Ireland (ha), 2014.

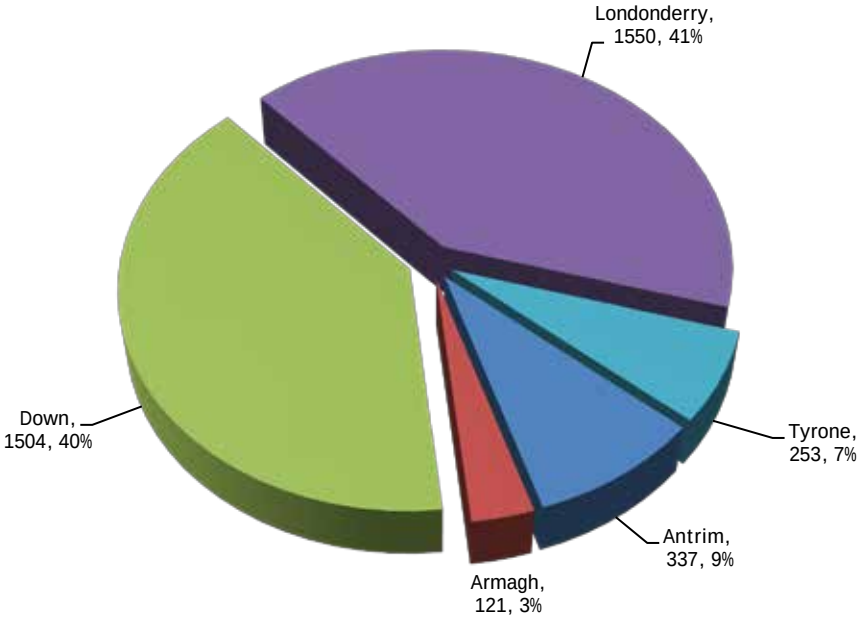
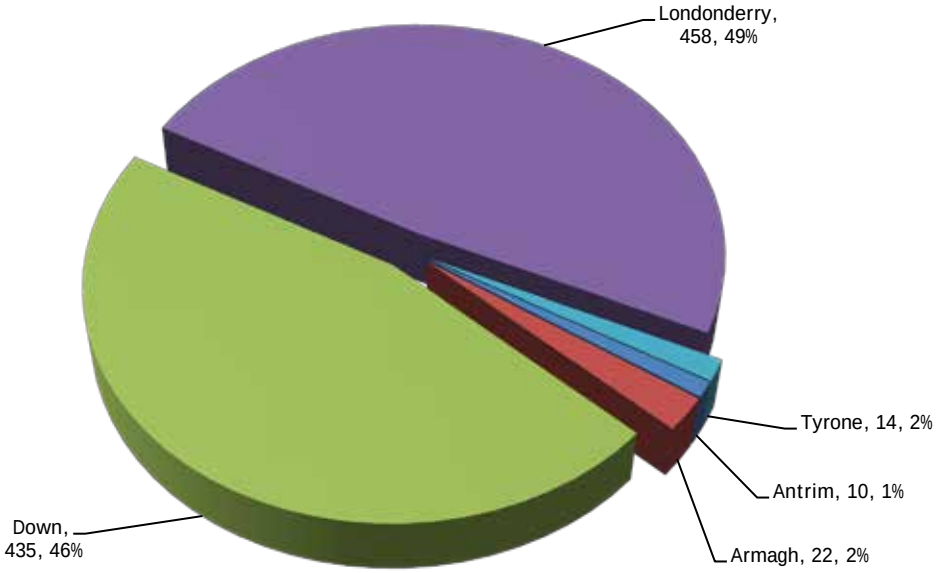


Figure 9: Regional distribution of other arable crops (oilseed rape, peas & field beans) grown in Northern Ireland (ha), 2014.



Pesticide usage

Figure 10: Comparison of the areas of arable crops treated in Northern Ireland (spha), 1990 - 2014.

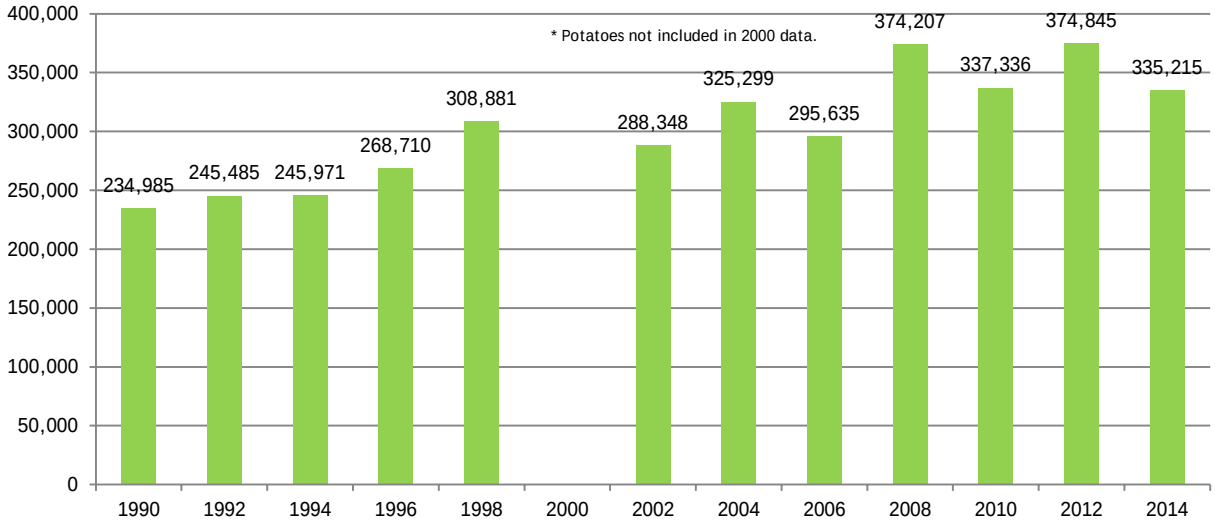


Figure 11: Pesticide usage (spha) on arable crops in Northern Ireland, 2014.

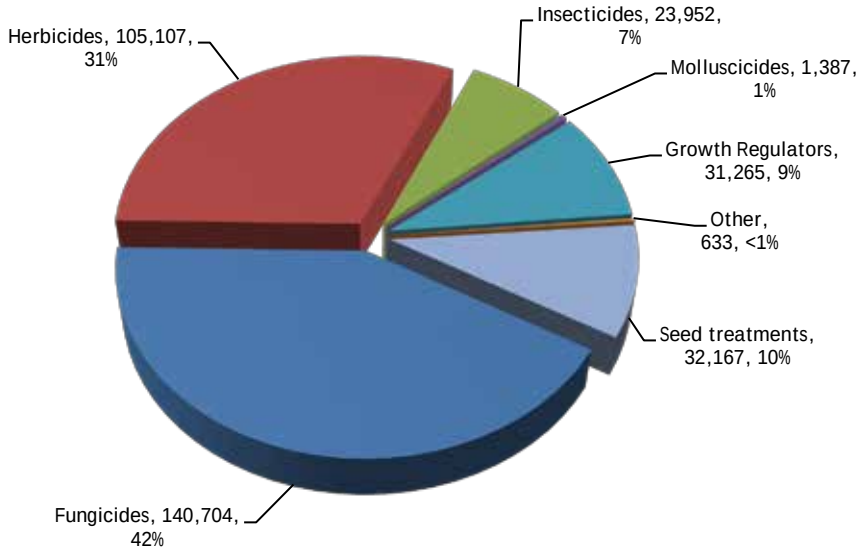


Figure 12: Comparison of the weight of pesticides applied (tonnes) to arable crops in Northern Ireland, 1990 - 2014.

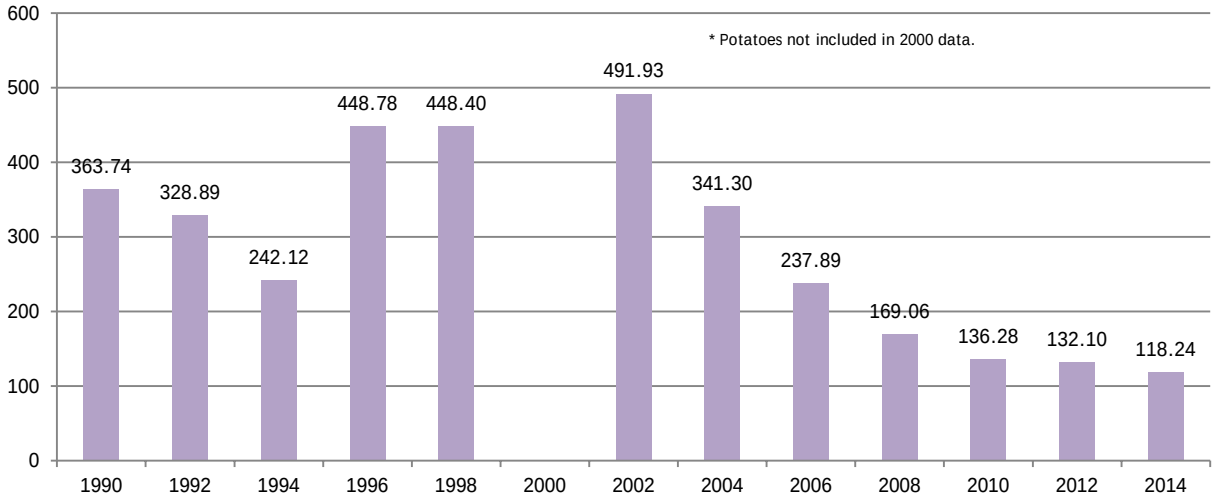


Figure 13: Weight (tonnes) of pesticides applied to arable crops in Northern Ireland, 2014.

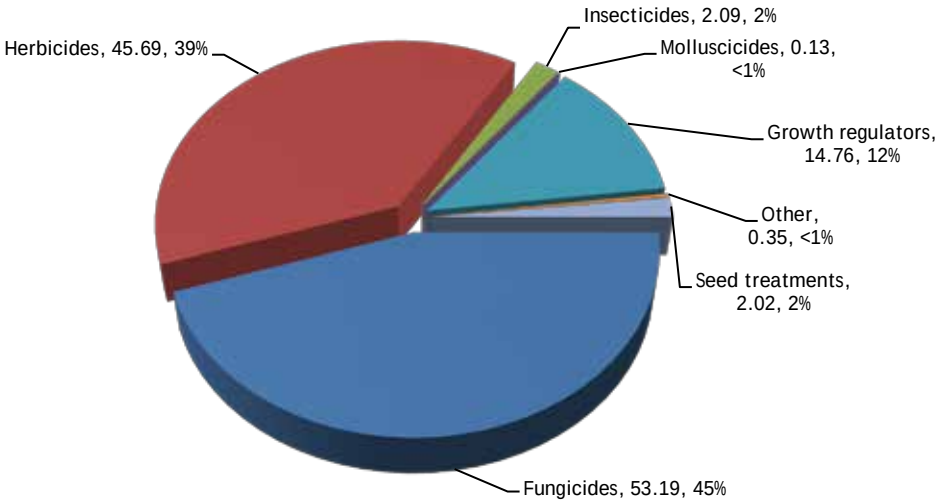


Figure 14: Area (spha) of arable crops treated with each pesticide type in Northern Ireland, 2014, by region.

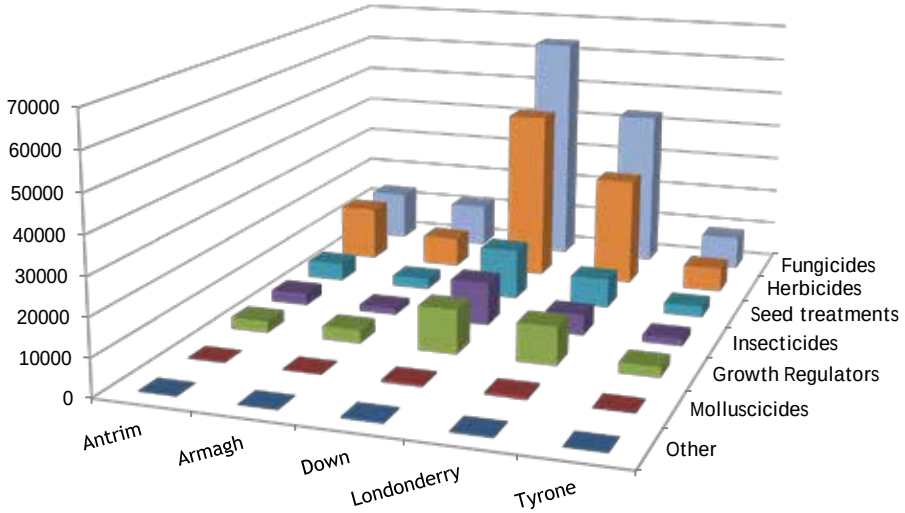


Figure 15: Weight (kg) of each pesticide type applied to arable crops in Northern Ireland, 2014, by region.

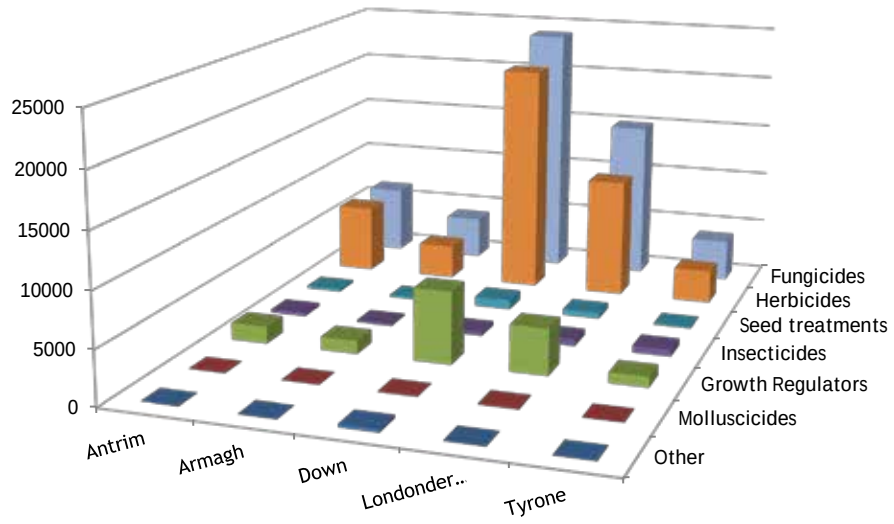


Figure 16: Comparison of the areas of cereal crops treated (spha) in Northern Ireland, 1990 - 2014.

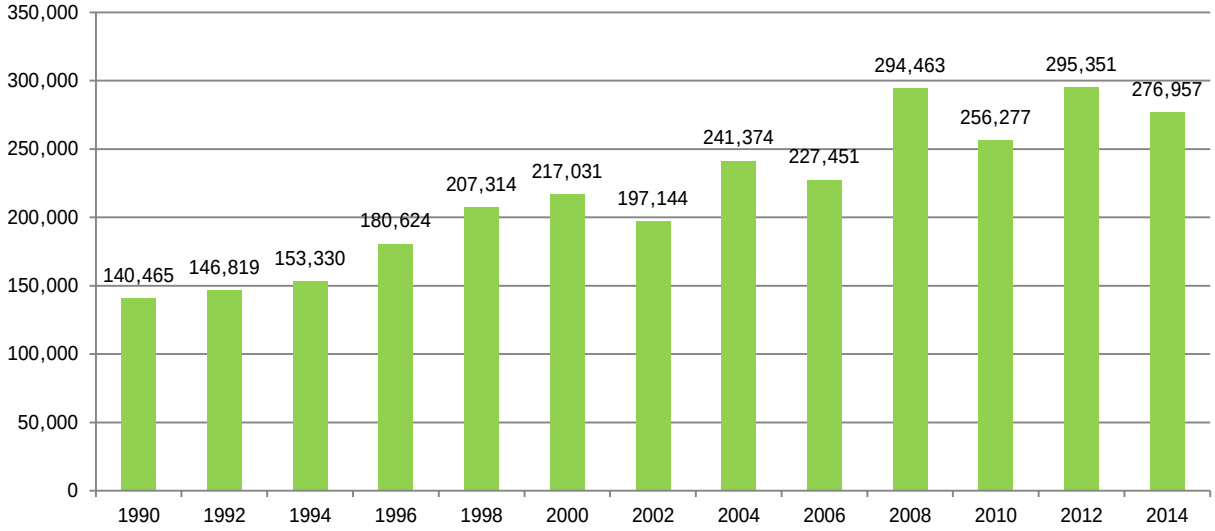


Figure 17: Pesticide usage (spha) on cereal crops in Northern Ireland, 2014.

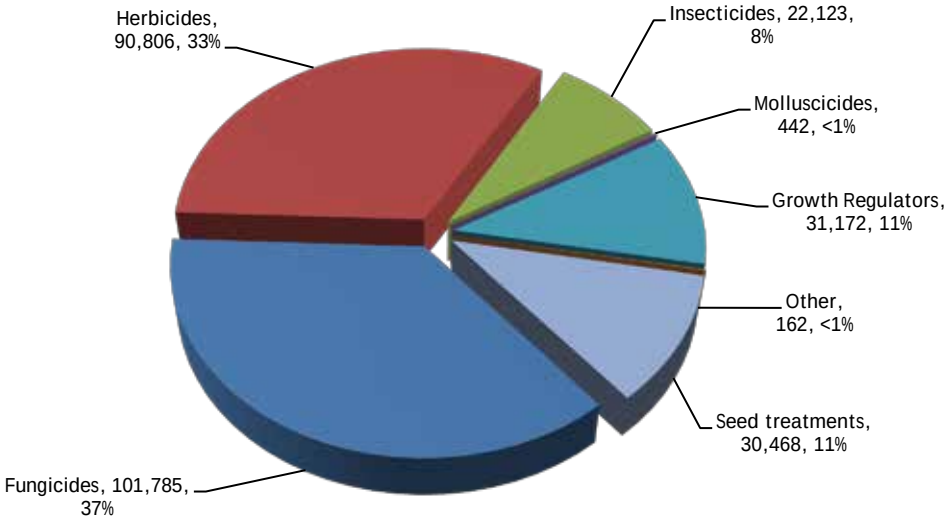


Figure 18: Comparison of the weight of pesticides applied (tonnes) to cereal crops in Northern Ireland, 1990 - 2014.

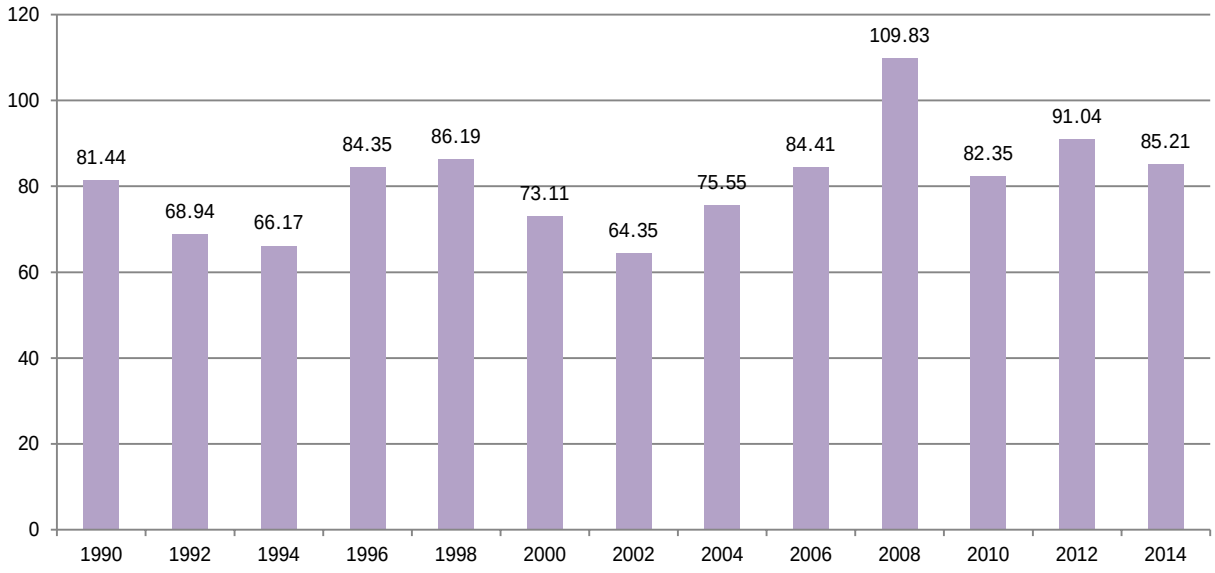


Figure 19: Weight of pesticides (tonnes) applied to cereal crops in Northern Ireland, 2014.

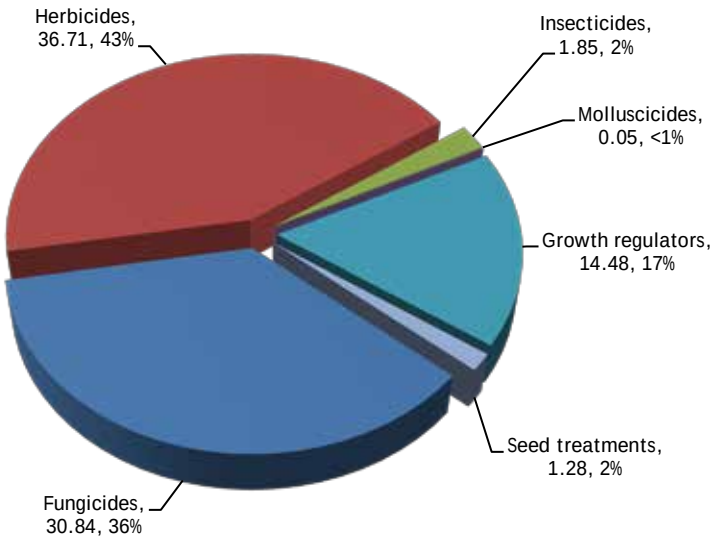


Figure 20: Pesticide usage (spha) on other arable crops in Northern Ireland, 2014.

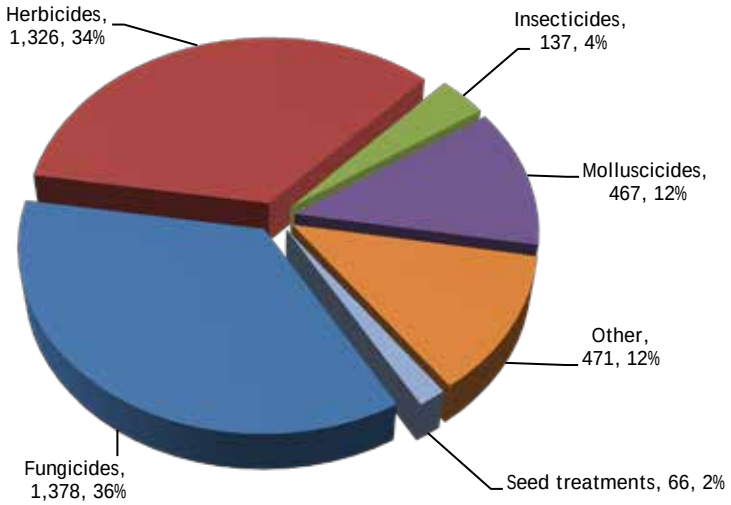


Figure 21: Weight of pesticides (tonnes) applied to other arable crops in Northern Ireland, 2014.

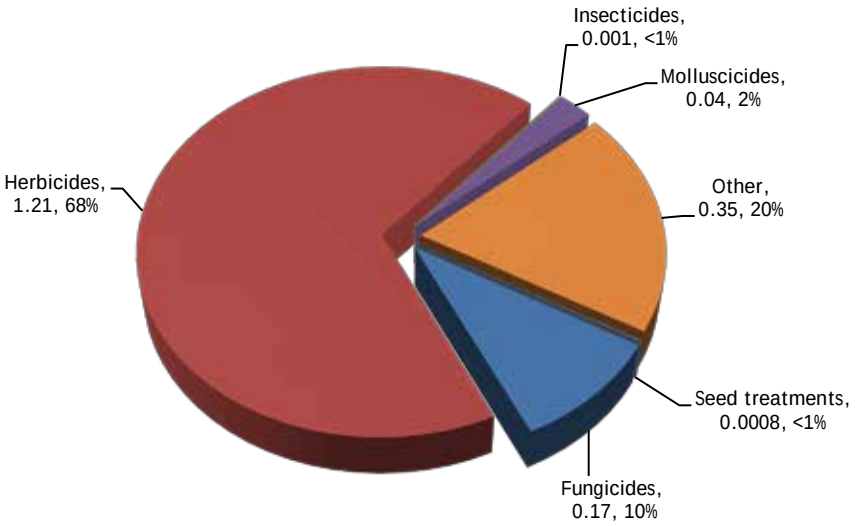


Figure 22: Comparison of the areas of potato crops treated (spha) in Northern Ireland, 1990 - 2014.

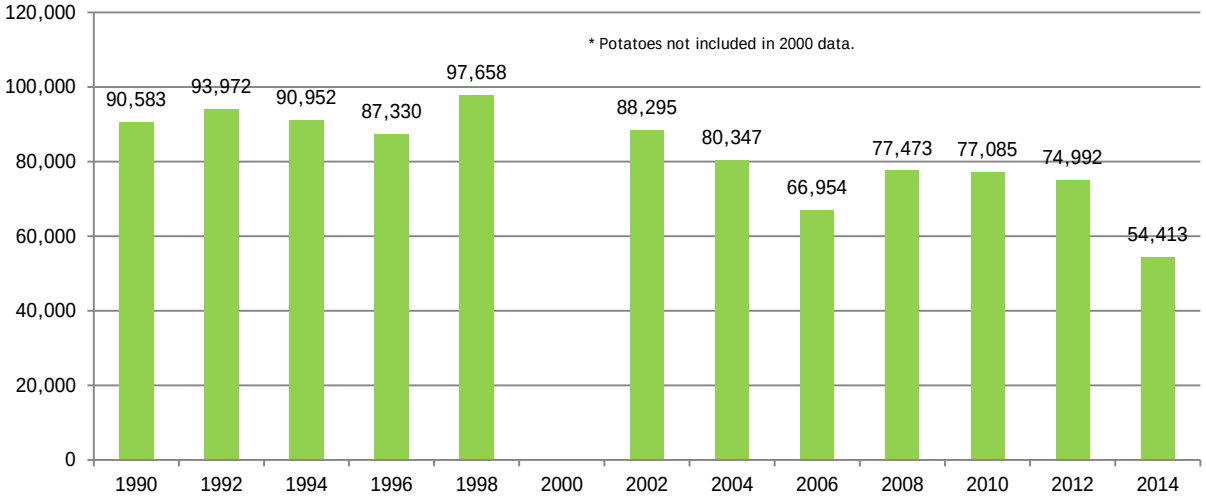


Figure 23: Pesticide usage (spha) on potato crops in Northern Ireland, 2014.

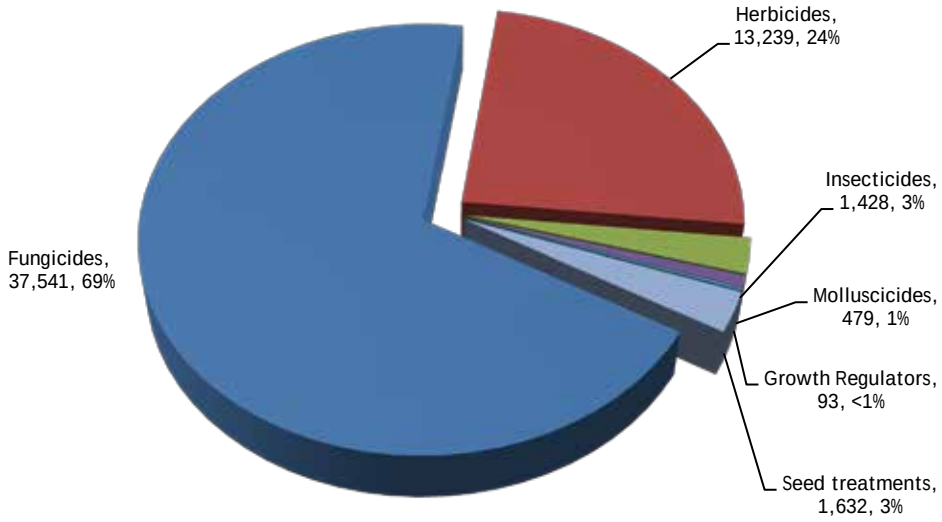


Figure 24: Comparison of the weight of pesticides applied (tonnes) to potato crops in Northern Ireland, 1990 - 2014.

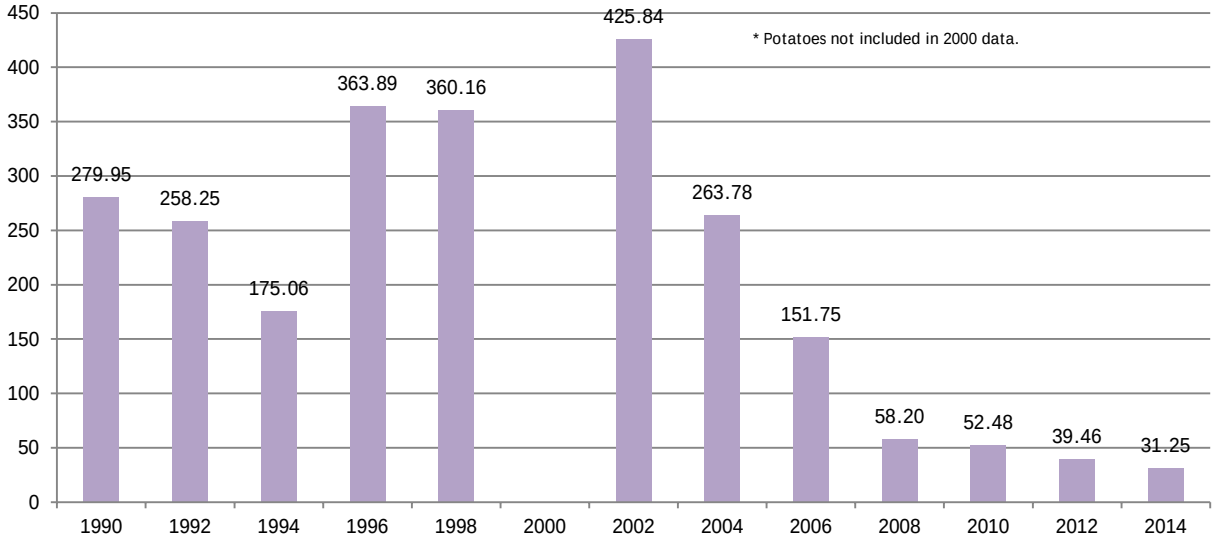
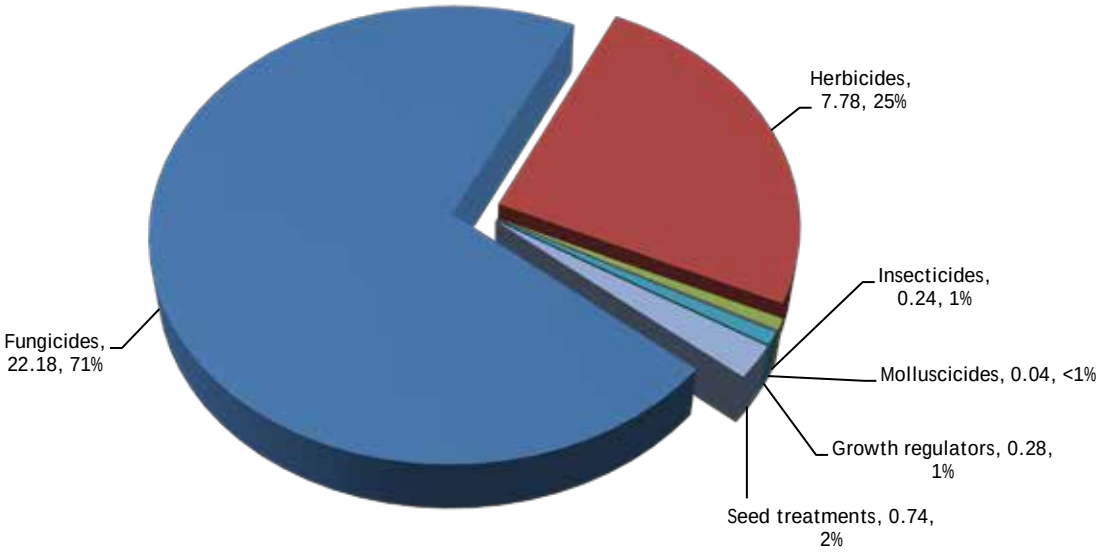


Figure 25: Weight of pesticides (tonnes) applied to potato crops in Northern Ireland, 2014.



Pesticide usage on spring barley:

· 16,417 hectares of spring barley grown in Northern Ireland

· 117,154 treated hectares

· 33,363 kilogrammes applied

· 99% of the area of spring barley crops grown received a pesticide treatment.

· Spring barley received on average 2.16 fungicide, 2.62 herbicide, 1.28 insecticide, 1.27 growth regulator and 1 molluscicide applications.

Figure 26: Comparison of the areas of spring barley crops grown in Northern Ireland (ha), 1990 - 2014.

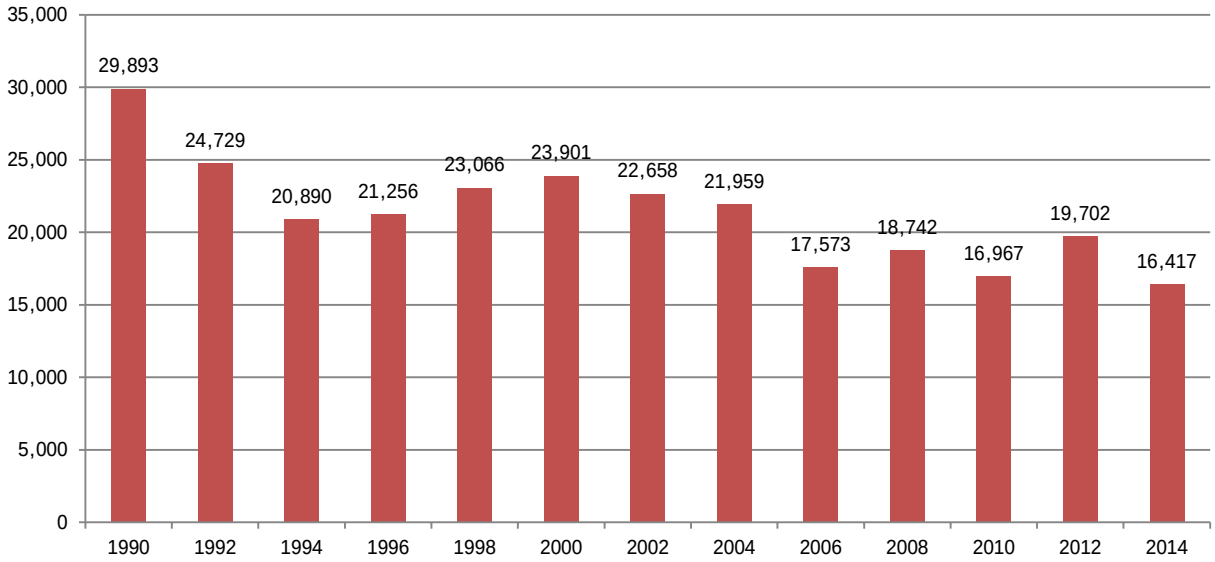


Figure 27: Regional distribution of spring barley crops grown in Northern Ireland (ha), 2014.

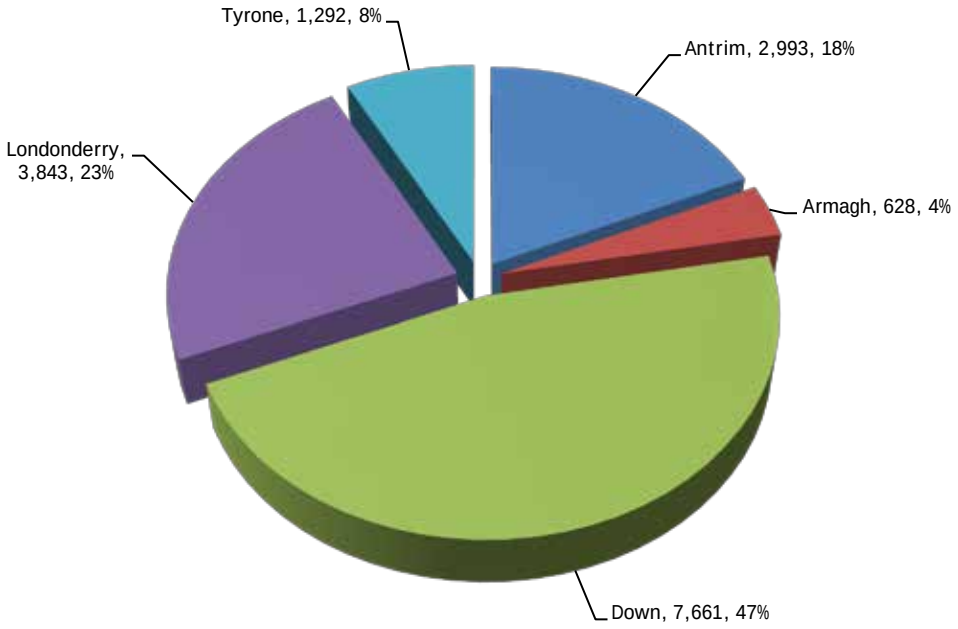


Figure 28: Pesticide usage (spha) on spring barley crops in Northern Ireland, 2014.

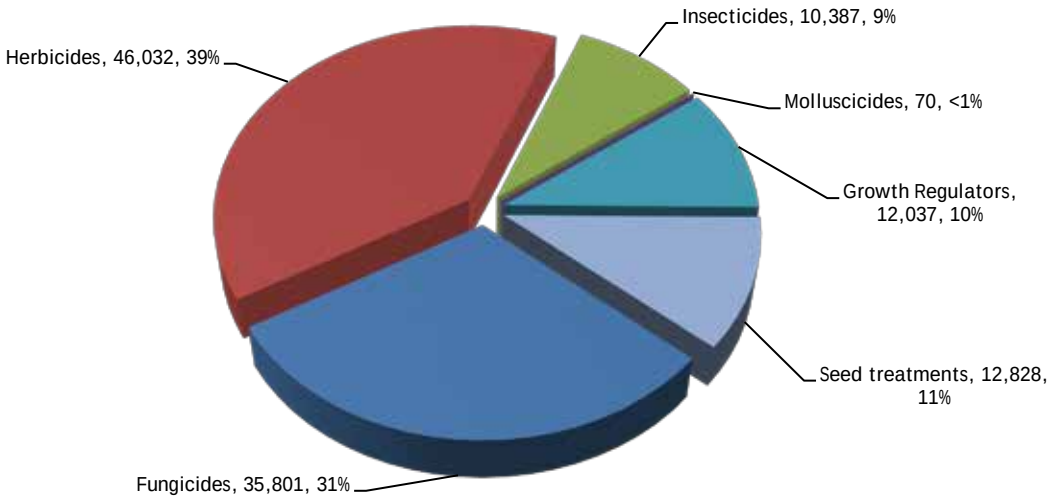


Figure 29: Weight of pesticides (kg) applied to spring barley crops in Northern Ireland, 2014.

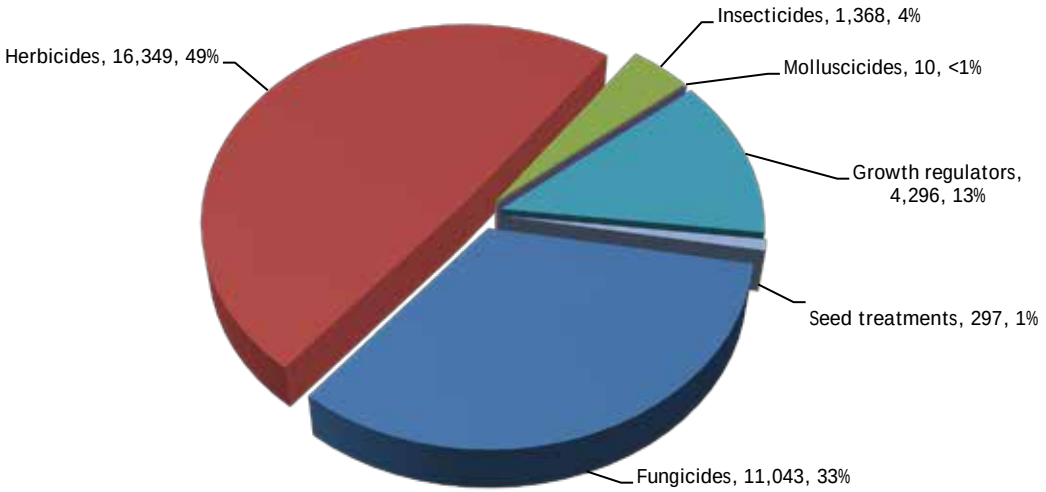
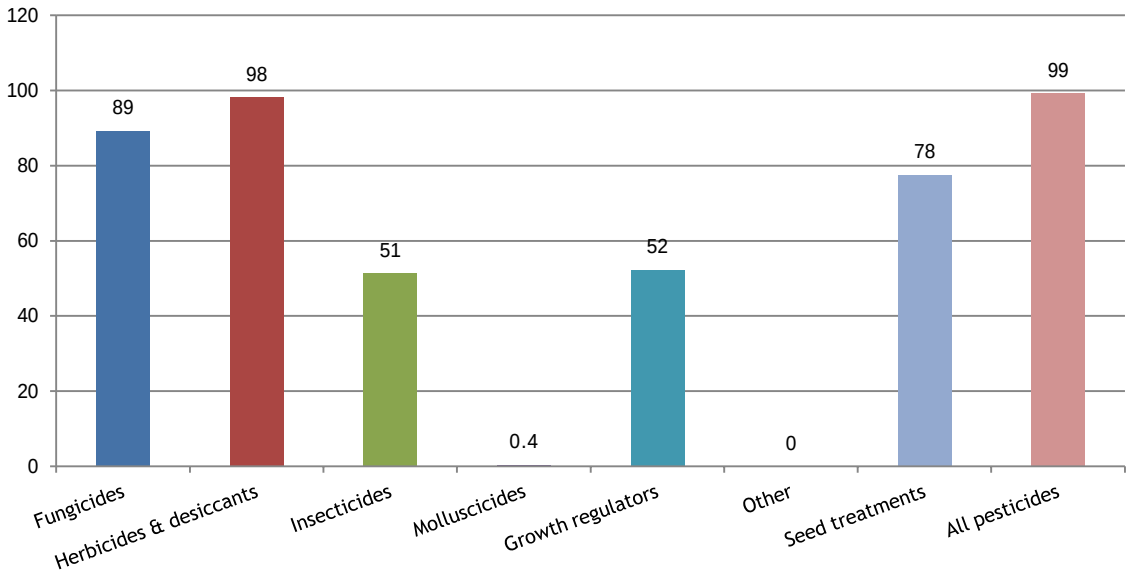


Figure 30: Proportional area (%) of spring barley crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – spring barley

· Basic area treated: 14,635 hectares

· Area treated: 35,801 spray hectares

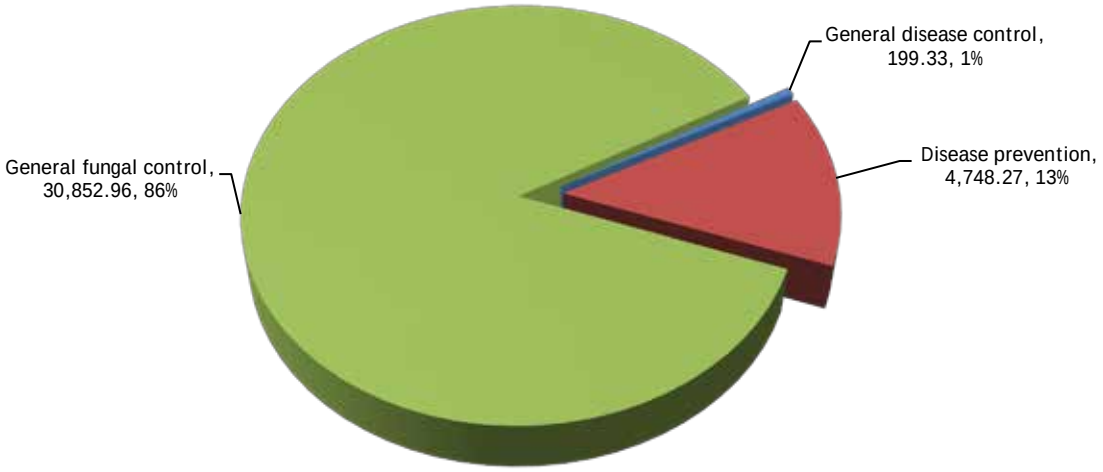
· Weight of active substances applied: 11,043 kilogrammes

· 89% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorothalonil	5,955.81	4,778.48	3,060.95	16.64
Prothioconazole	2,775.02	2,518.12	307.55	7.75
Fluoxastrobin/prothioconazole	2,252.92	1,659.61	410.60	6.29
Prothioconazole/trifloxystrobin	2,169.44	1,863.56	304.65	6.06
Fenpropimorph	1,940.65	1,940.65	449.60	5.42

Figure 31: Spring barley: reasons for fungicide use (spha), 2014.



Herbicide & desiccants – spring barley

· Basic area treated: 16,125 hectares

· Area treated: 46,032 spray hectares

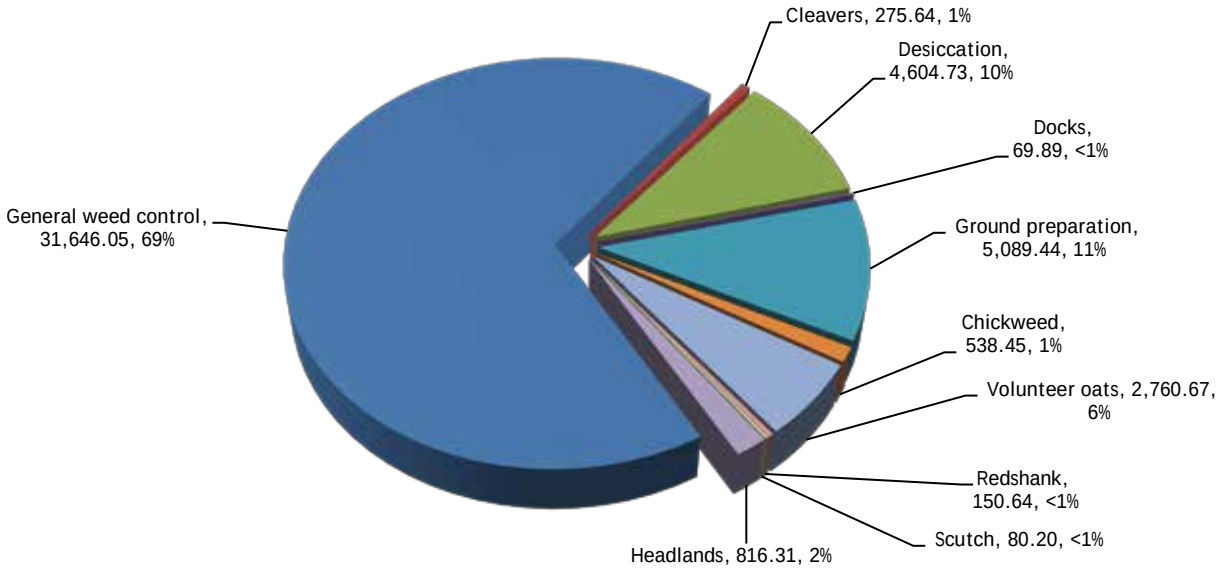
· Weight of active substances applied: 16,349 kilogrammes

· 98% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	10,525.00	8,897.02	7,504.88	22.86
Fluroxypyr	6,717.61	6,717.61	953.63	14.59
Metsulfuron-methyl/tribenuron-methyl	4,393.18	4,393.18	45.26	9.54
Mecoprop-P	4,288.62	4,008.00	3,353.40	9.32
Metsulfuron-methyl	3,643.83	3,643.83	19.82	7.92

Figure 32: Spring barley: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – spring barley

· Basic area treated: 8.433 hectares

· Area treated: 10,387 spray hectares

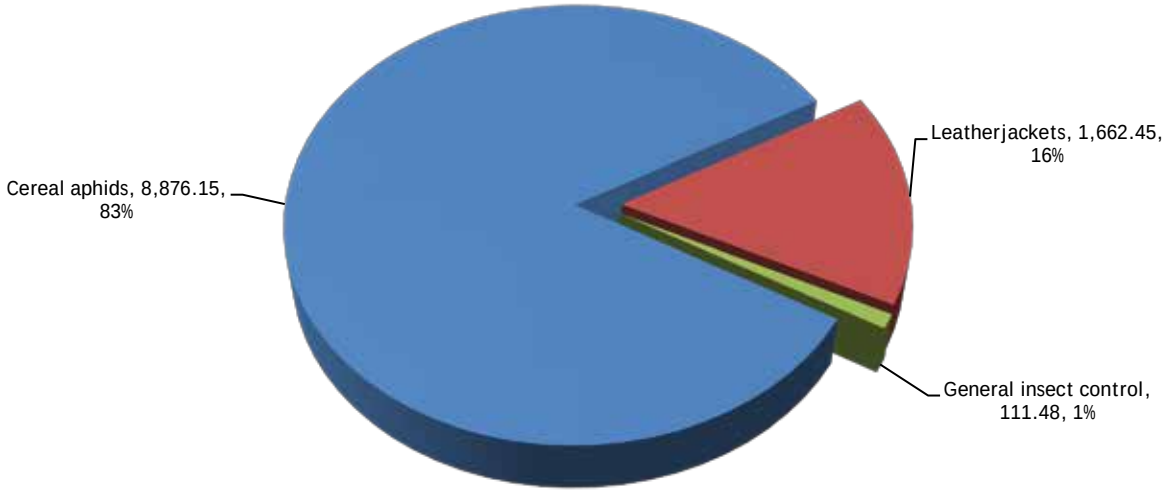
· Weight of active substances applied: 1,368 kilogrammes

· 51% of the area grown treated with insecticides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Esfenvalerate	6,399.26	5,664.18	24.10	60.09
Lambda-cyhalothrin	2,152.34	1,767.10	10.08	20.21
Chlorpyrifos	1,775.15	1,775.15	1,323.82	16.67
Fipronil	263.32	263.32	3.95	2.47
Deltamethrin	31.43	31.43	0.08	0.30

Figure 33: Spring barley: reasons for insecticide use (spha), 2012.



Molluscicides - spring barley

· Basic area treated: 70 hectares

· Area treated: 70 spray hectares

· Weight of active substances applied: 10 kilogrammes

· 0.43% of the area grown treated with molluscicides

· All applications were to control slugs

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Methiocarb	70.11	70.11	9.53	100

Growth regulators – spring barley

· Basic area treated: 8,587 hectares

· Area treated: 12,037 spray hectares

· Weight of active substances applied: 4,296 kilogrammes

· 52% of the area grown treated with growth regulators

· All reasons for use were given as growth regulation

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlormequat	5,311.90	5,115.47	3,701.96	44.13
Trinexapac-ethyl	5,043.56	4,596.24	261.90	41.90
2-chloroethylphosphonic acid	1,448.15	1,422.60	297.57	12.03
Mepiquat chloride/Prohexadione-calcium	233.05	233.05	34.57	1.94

Seed treatments – spring barley

· Area treated: 12,727 hectares

· Weight of active substances applied: 297 kilogrammes

· 78% of the area grown was sown with treated seed

· The most commonly applied active substances were:

	Treated area (ha)	Quantity applied (kgs)	% of the treated area
Fludioxonil	6,302.33	55.80	49.13
Prochloraz/triticonazole	4,770.70	139.76	37.19
Fludioxonil/flutriafol	529.79	11.21	4.13
Clothianidin/prothioconazole	515.31	49.08	4.02
Fluopyram/Prothioconazole/Tebuconazole	374.56	5.26	2.92

Pesticide usage on undersown barley:

· 430 hectares of undersown barley grown in Northern Ireland

· 1,342 treated hectares

· 259 kilogrammes applied

· 100% of the area of undersown barley crops grown received a pesticide treatment

· Undersown spring barley received on average 1.77 fungicide, 1.39 herbicide and 1 insecticide applications

Figure 34: Comparison of the areas of undersown barley crops grown in Northern Ireland (ha), 1990 - 2014.

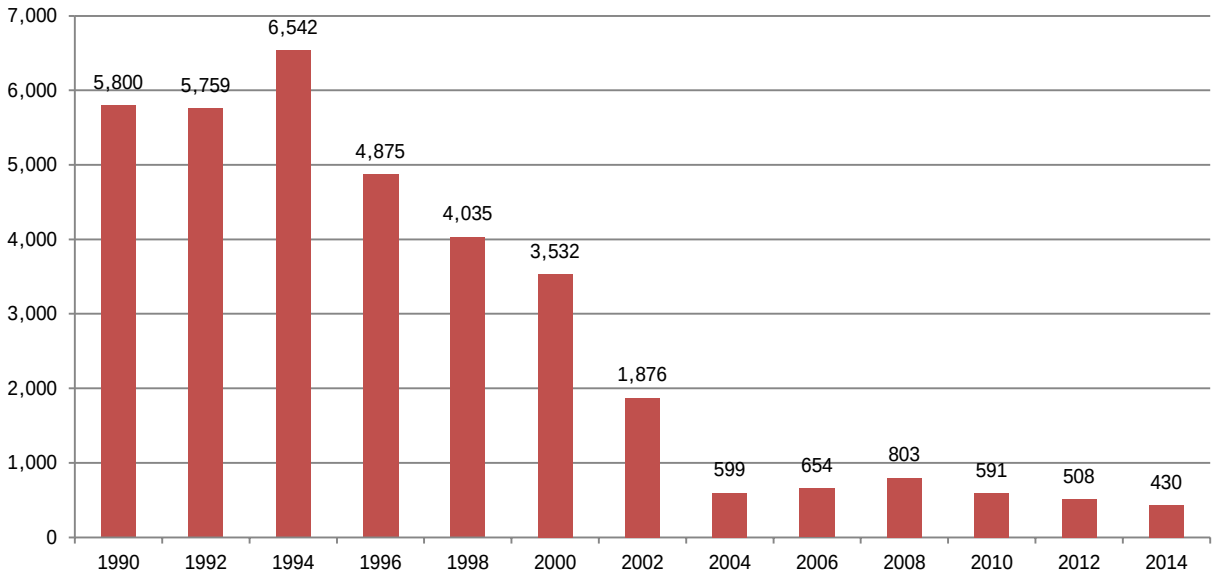


Figure 35: Regional distribution of undersown barley crops grown in Northern Ireland (ha), 2014.

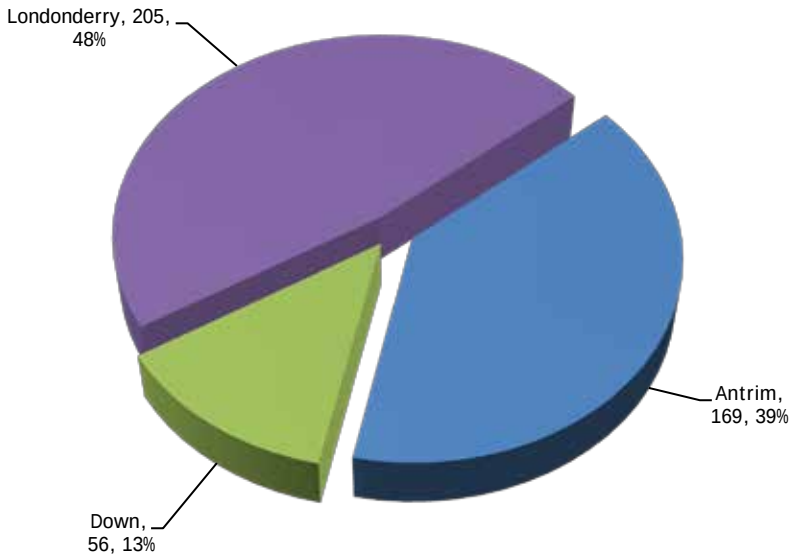


Figure 36: Pesticide usage (spha) on undersown barley crops in Northern Ireland, 2014.

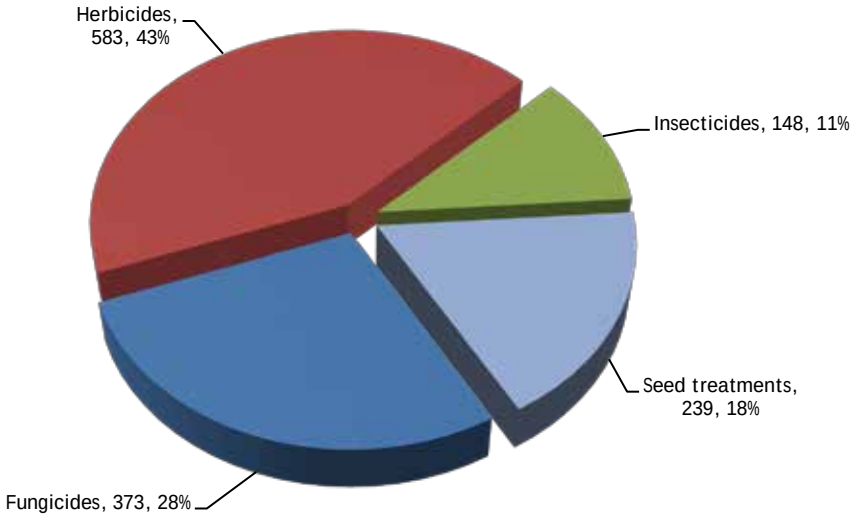


Figure 37: Weight of pesticides (kg) applied to undersown barley crops in Northern Ireland, 2014.

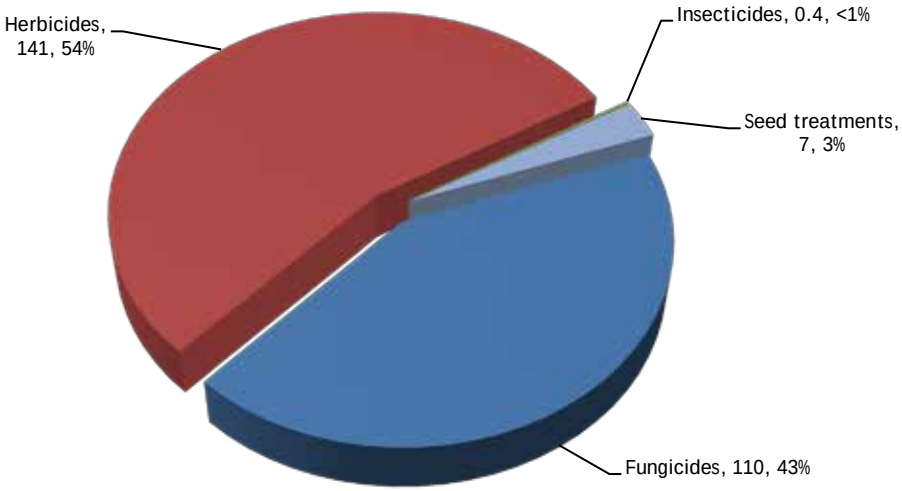
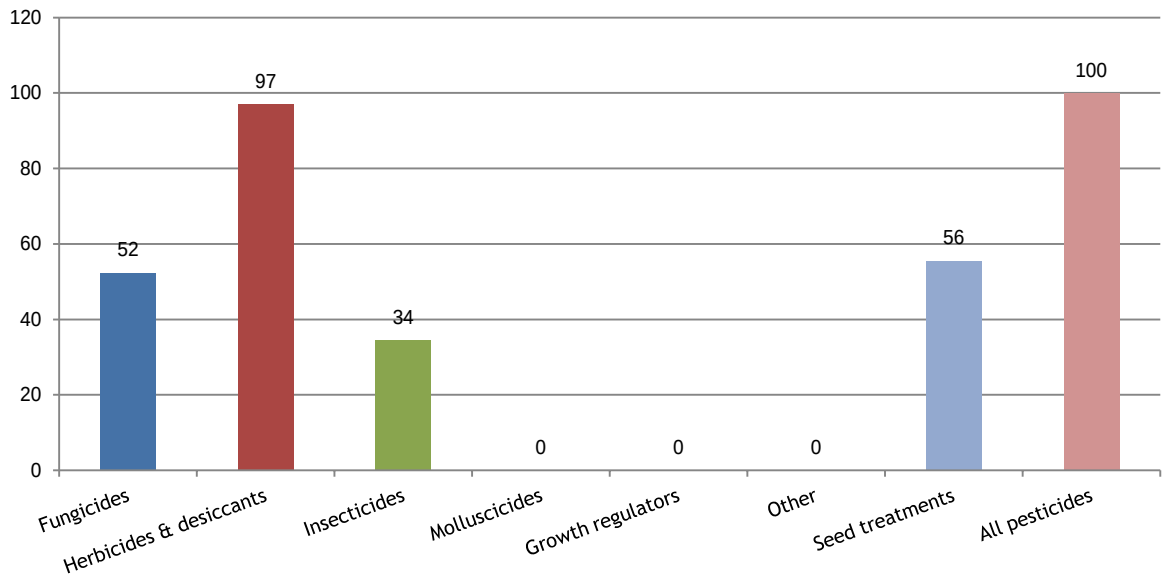


Figure 38: Proportional area (%) of undersown barley crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – undersown barley

· Basic area treated: 225 hectares

· Area treated: 373 spray hectares

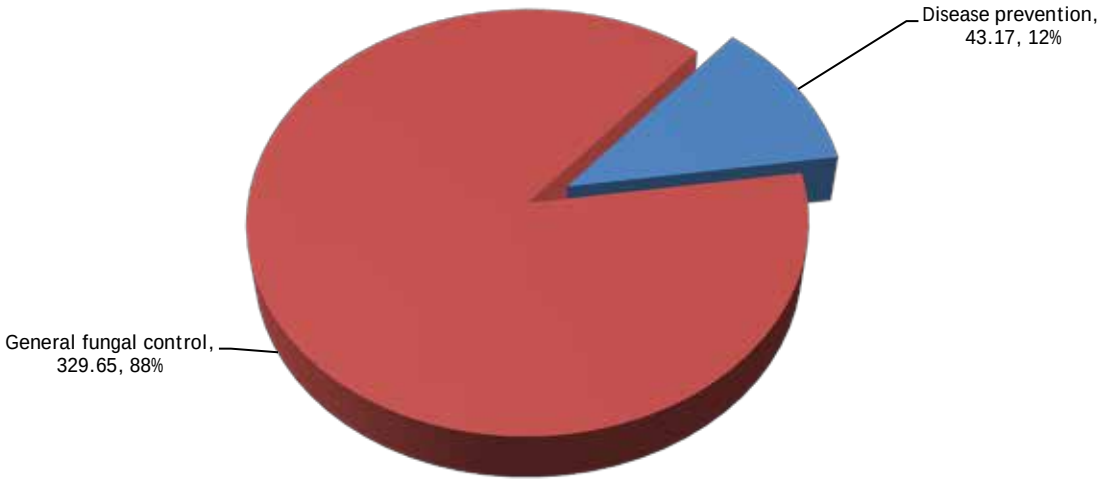
· Weight of active substances applied: 110 kilogrammes

· 52% of the area grown treated with fungicide

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlorothalonil	147.89	147.89	59.15	39.67
Epoxiconazole/fenpropimorph/kresoxim-methyl	147.89	147.89	35.49	39.67
Fluoxastrobin/prothioconazole	43.17	43.17	5.4	11.58
Cyprodinil	21.43	21.43	4.05	5.75
Epoxiconazole/fenpropimorph/metrafenone	12.44	12.44	6.22	3.34

Figure 39: Undersown spring barley: reasons for fungicide use (spha), 2014.



Herbicides & desiccants – undersown barley

· Basic area treated: 417 hectares

· Area treated: 583 spray hectares

· Weight of active substances applied: 141 kilogrammes

· 97% of the area grown treated with herbicides & desiccants

· All applications were for general weed control

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Tribenuron-methyl	356.25	356.25	1.71	61.11
2,4-DB	147.89	147.89	87.67	25.37
Dicamba/MCPA/mecoprop-P	43.17	43.17	49.43	7.41
Florasulam/fluroxypyr	17.83	17.83	1.4	3.06
Metsulfuron-methyl/Thifensulfuron-methyl	17.83	17.83	0.78	3.06

Insecticides – undersown barley

· Basic area treated: 148 hectares

· Area treated: 148 spray hectares

· Weight of active substances applied: 0.4 kilogrammes

· 34% of the area grown treated with insecticides

· All applications were to control aphids

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Esfenvalerate	147.89	147.89	0.37	100

Seed treatments – undersown barley

· Area treated: 239 hectares

· Weight of active substances applied: 7 kilogrammes

· 56% of the area grown was sown with treated seed

· The most commonly applied active substances were:

	Treated area (ha)	Quantity applied (kgs)	% of the treated area
Prochloraz/triticonazole	204.76	7.20	85.81
Fludioxonil	33.87	0.28	14.19

Pesticide usage on winter barley:

· 6,709 hectares of winter barley grown in Northern Ireland

· 54,149 treated hectares

· 19,593 kilogrammes applied

· 100% of the area of winter barley crops grown received a pesticide treatment

· Winter barley received on average 2.97 fungicide, 2.70 herbicide, 1.54 insecticide, 1.23 growth regulator 1 other and 1 molluscide applications.

Figure 40: Comparison of the areas of winter barley crops grown in Northern Ireland (ha), 1990 - 2014.

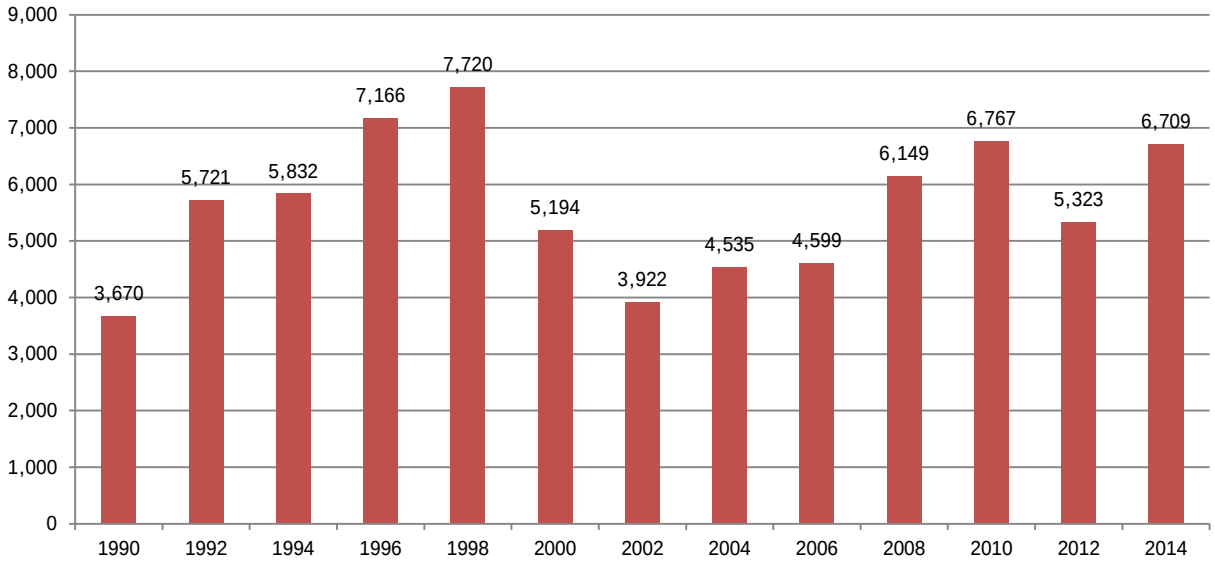


Figure 41: Regional distribution of winter barley crops grown in Northern Ireland (ha), 2014.

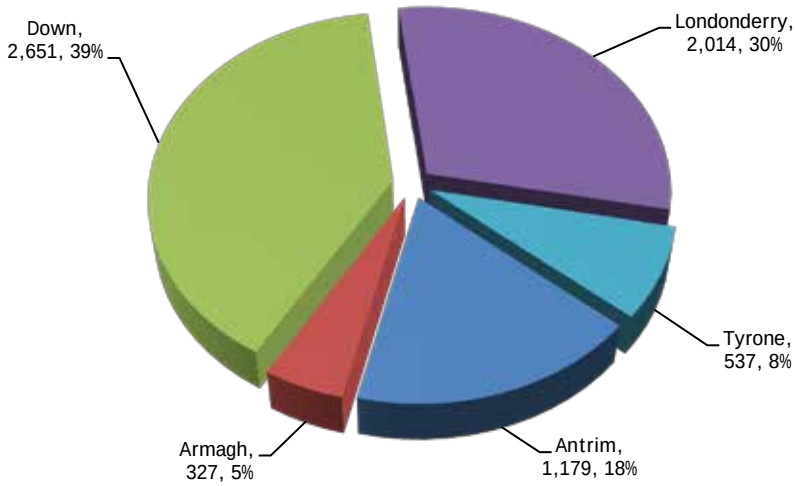


Figure 42: Pesticide usage (spha) on winter barley crops in Northern Ireland, 2014.

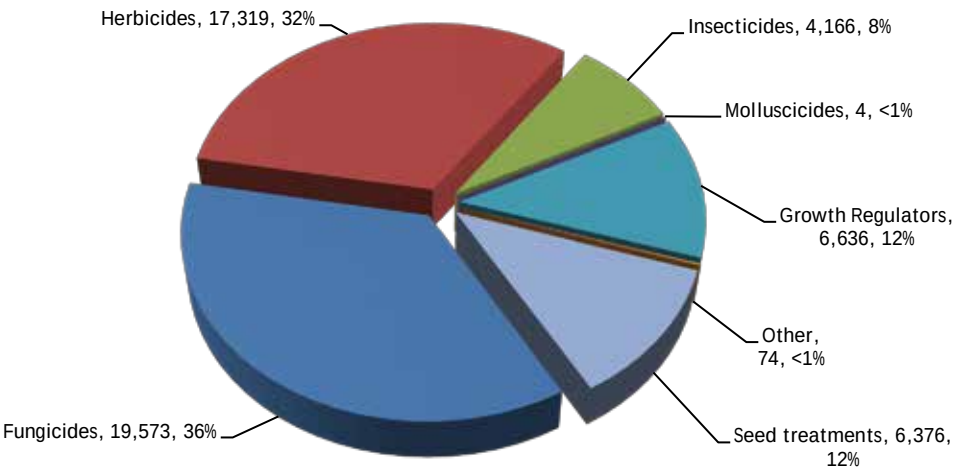


Figure 43: Weight of pesticides (kg) applied to winter barley crops in Northern Ireland, 2014.

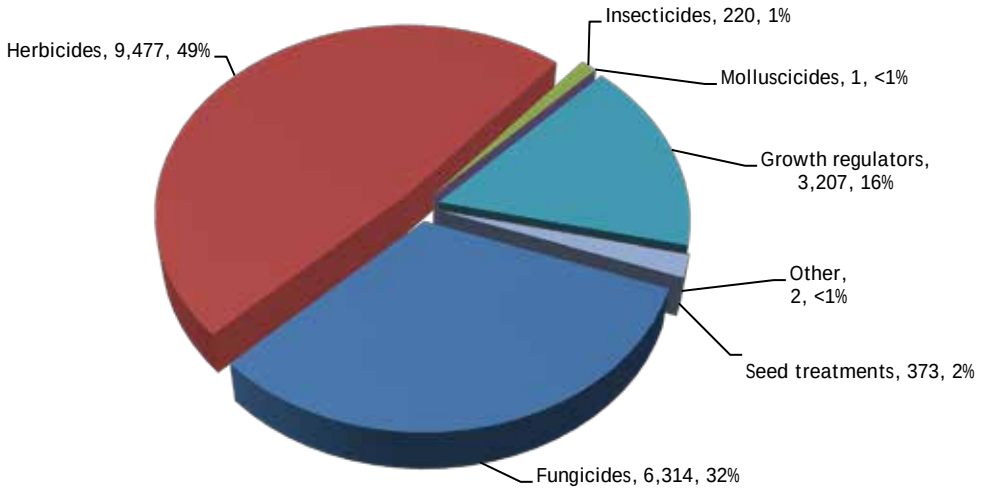
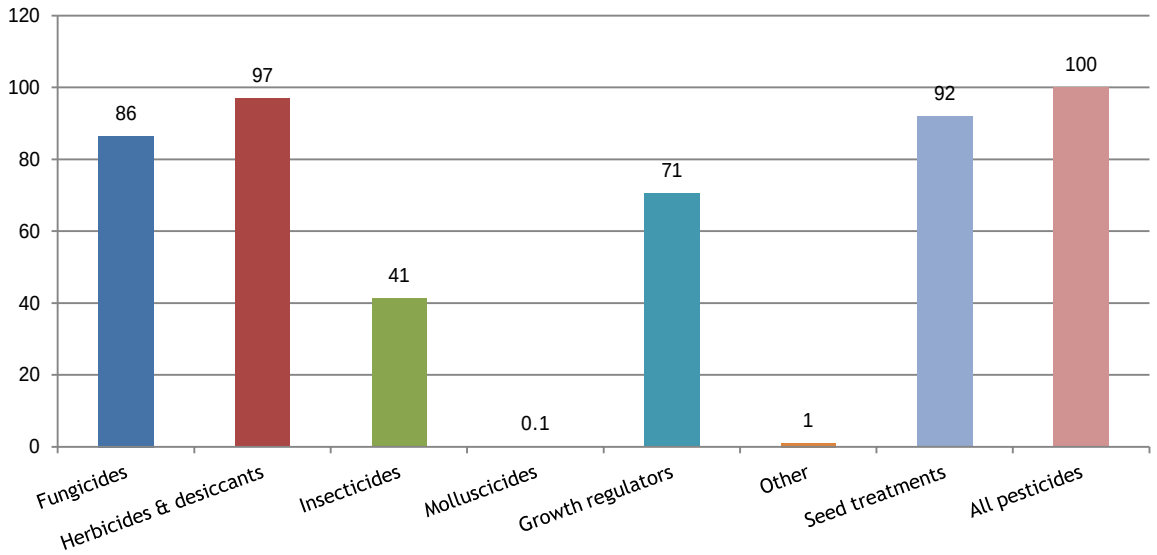


Figure 44: Proportional area (%) of winter barley crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – winter barley

· Basic area treated: 5,803 hectares

· Area treated: 19,573 spray hectares

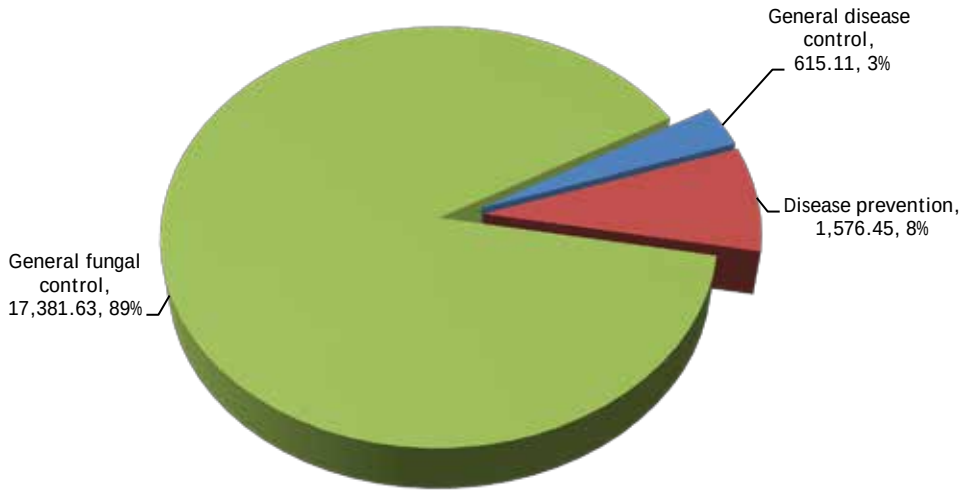
· Weight of active substances applied: 6,314 kilogrammes

· 86% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlorothalonil	4,969.44	3,366.61	2,537.50	25.40
Bixafen/Prothioconazole	1,930.16	1,686.38	333.00	9.86
Fluoxastrobin/prothioconazole	1,441.25	1,077.91	346.58	7.36
Prothioconazole	1,370.92	1,041.39	191.51	7.00
Prothioconazole/trifloxystrobin	1,119.27	916.11	180.45	5.71

Figure 45: Winter barley: reasons for fungicide use (spha), 2014.



Herbicides & desiccants – winter barley

· Basic area treated: 6,500 hectares

· Area treated: 17,319 spray hectares

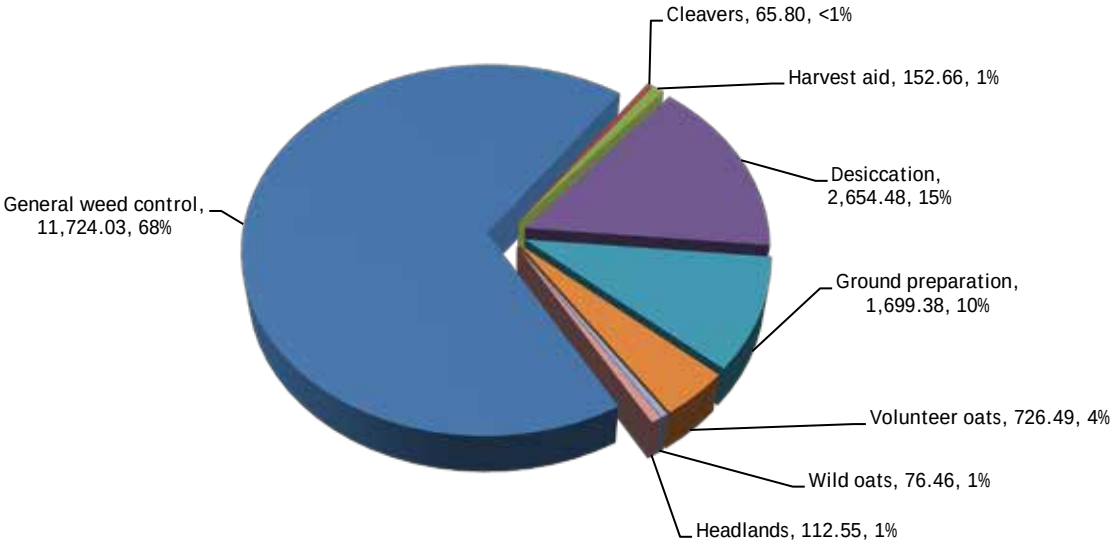
· Weight of active substances applied: 8,4619,477 kilogrammes

· 97% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	4,560.37	3,888.64	3,505.34	26.33
Diflufenican	2,445.97	2,445.97	200.16	14.12
Flufenacet/pendimethalin	1,772.40	1,772.40	1,760.49	10.23
Diflufenican/flufenacet	1,307.16	1,307.16	213.3	7.55
Fluroxypyr	1,263.07	1,158.01	218.92	7.29

Figure 46: Winter barley: reasons for herbicide & desiccant use (spha), 2014.



Insecticides - winter barley

· Basic area treated: 2,769 hectares

· Area treated: 4,166 spray hectares

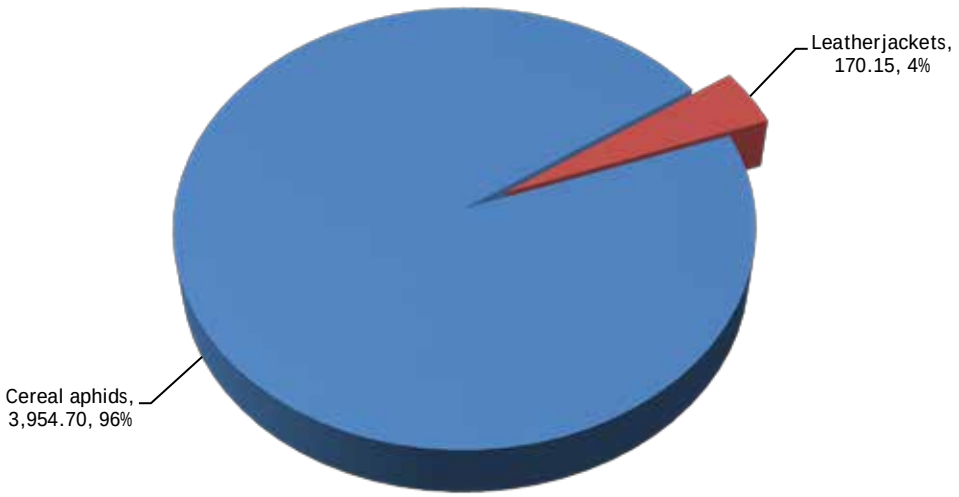
· Weight of active substances applied: 220 kilogrammes

· 41% of the area sown treated with insecticides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Esfenvalerate	2,156.22	1,412.92	8.03	51.76
Lambda-cyhalothrin	1,472.15	1,288.01	10.4	35.34
Cypermethrin	236.76	236.76	5.92	5.68
Chlorpyrifos	208.99	208.99	186.21	5.02
Pirimicarb	71.19	71.19	9.08	1.71

Figure 47: Winter barley: reasons for insecticide use (spha), 2014.



Molluscicides - winter barley

· Basic area treated: 4 hectares

· Area treated: 4 spray hectares

· Weight of active substances applied: 1 kilogrammes

· 0.06% of the area grown treated with molluscicides

· All applications were to control slugs

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Methiocarb	4.19	4.19	0.62	100

Growth regulators - winter barley

· Basic area treated: 4,731 hectares

· Area treated: 6,636 spray hectares

· Weight of active substances applied: 3,207 kilogrammes

· 71% of area grown treated with growth regulators

· All applications were for growth regulation

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlormequat	2,923.99	2,599.27	2,709.33	44.06
Trinexapac-ethyl	2,364.74	2,242.29	139.56	35.63
2-chloroethylphosphonic acid	1,131.06	1,131.06	314.74	17.04
Mepiquat chloride/Prohexadione-calcium	216.23	216.23	43.3	3.26

Other - winter barley

· Basic area treated: 74 hectares

· Area treated: 74 spray hectares

· Weight of active substances applied: 2 kilogrammes

· 1.1% of area grown treated

Seed treatments – winter barley

· Area treated: 6,167 hectares

· Weight of active substances applied: 373 kilogrammes

· 92% of the area grown was sown with treated seed

· The most commonly applied active substances were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Clothianidin/prothioconazole	2,964.14	299.62	46.49
Prochloraz/triticonazole	1,528.89	45.49	23.98
Fludioxonil	1,513.79	13.05	23.74
Silthiofam	209.54	8.73	3.29
Imidacloprid/tebuconazole/triazoxide	83.59	4.45	1.31

Pesticide usage on spring wheat:

· 604 hectares of spring wheat grown in Northern Ireland

· 4,336 treated hectares

· 1,345 kilogrammes applied

· 100% of the area of spring wheat crops grown received a pesticide treatment

· Spring wheat received on average 3.47 fungicide, 3.01 herbicide, 1.48 growth regulator and 1.25 insecticide applications.

Figure 48: Comparison of the areas of spring wheat crops grown in Northern Ireland (ha), 1990 - 2014.

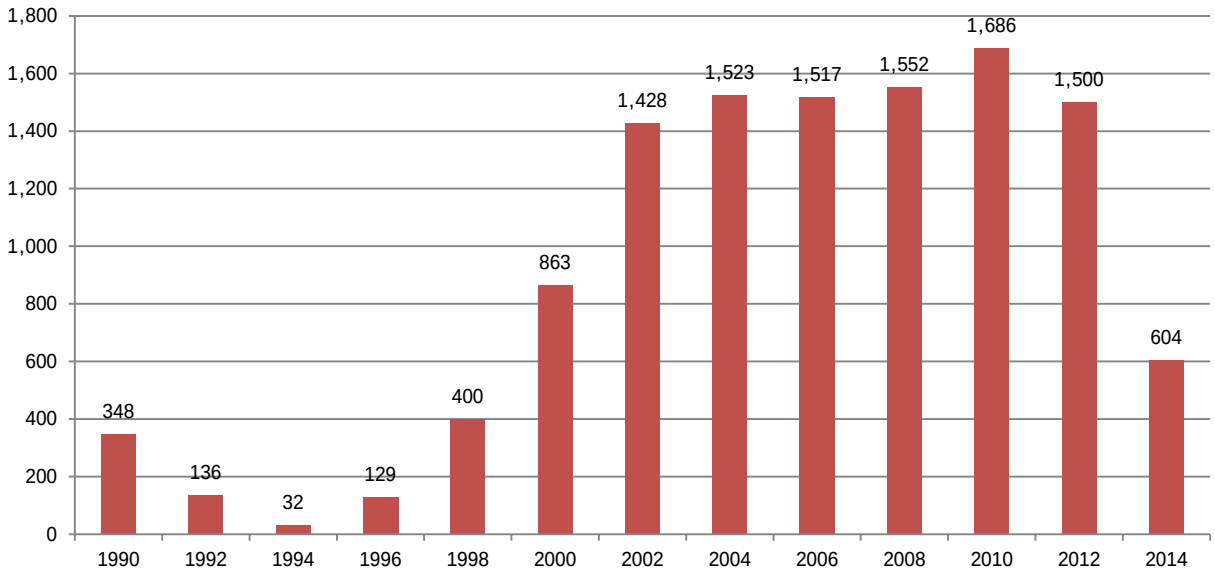


Figure 49: Regional distribution of spring wheat crops grown in Northern Ireland (ha), 2014.

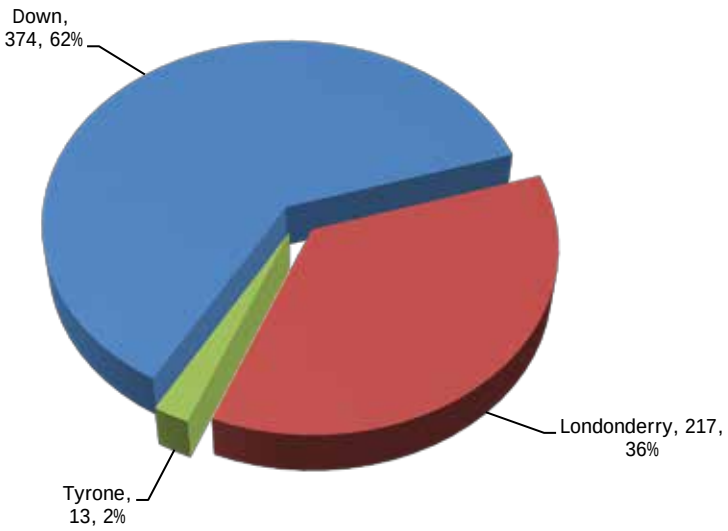


Figure 50: Pesticide usage (spha) on spring wheat crops in Northern Ireland, 2014.

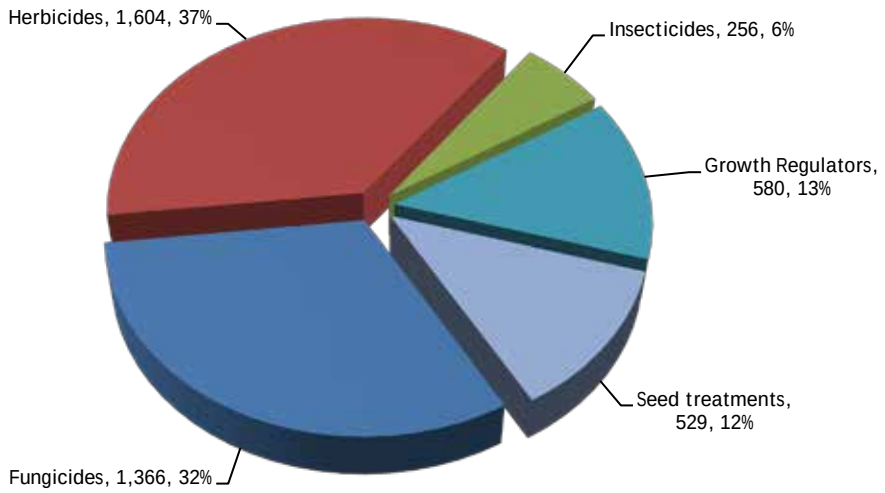


Figure 51: Weight of pesticides (kg) applied to spring wheat crops in Northern Ireland, 2014.

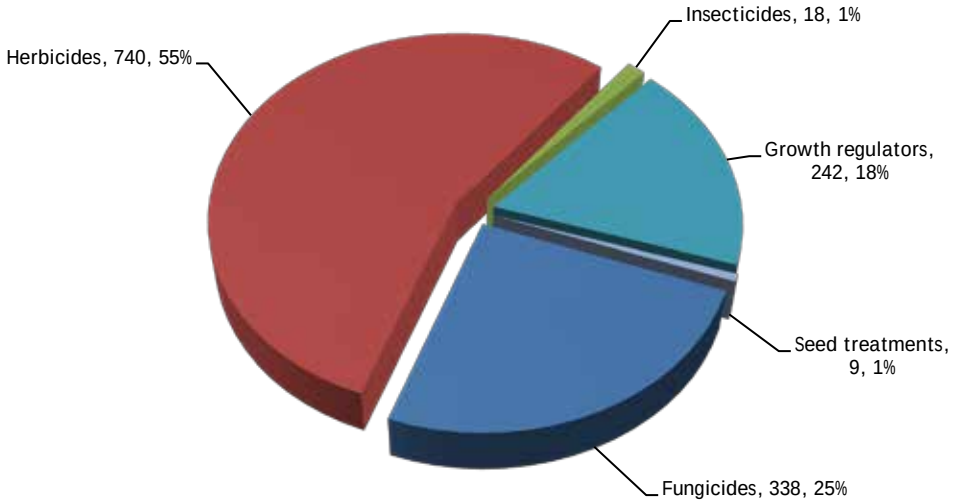
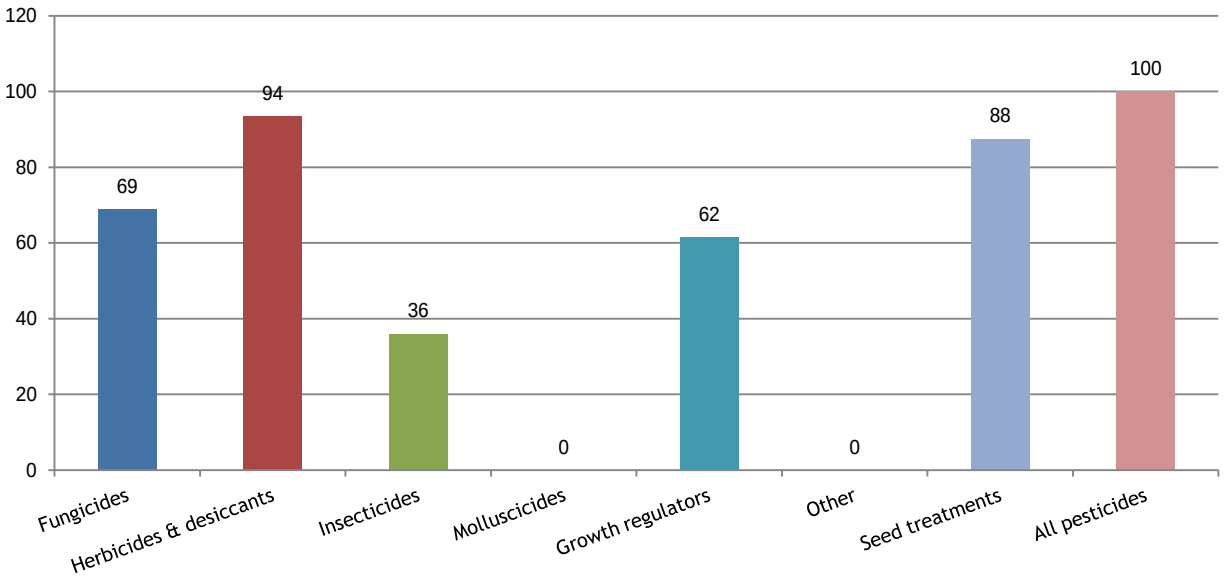


Figure 52: Proportional area (%) of spring wheat crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – spring wheat

· Basic area treated: 416 hectares

· Area treated: 1,366 spray hectares

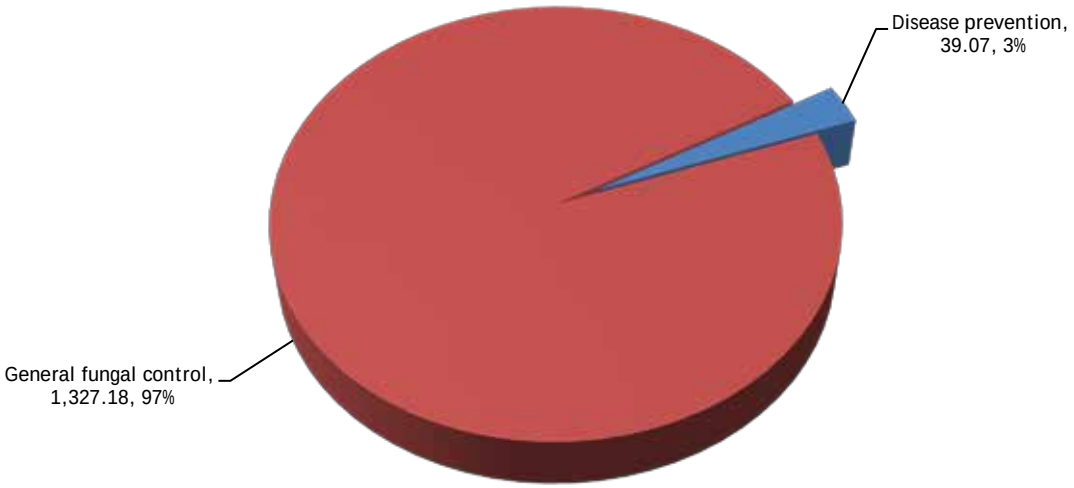
· Weight of active substances applied: 338 kilogrammes

· 69% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlorothalonil	248.44	185.84	111.57	18.18
Epoxiconazole	198.4	167.1	20.5	14.52
Prothioconazole/tebuconazole	171.67	116.17	24.69	12.57
Epoxiconazole/fenpropimorph/metrafenone	150.62	75.31	75.34	11.02
Boscalid/Epoxiconazole	110.99	55.5	18.31	8.12
Proquinazid	110.99	55.5	2.22	8.12

Figure 53: Spring wheat: reasons for fungicide use (spha), 2014.



Herbicides & desiccants – spring wheat

· Basic area treated: 565 hectares

· Area treated: 1,604 spray hectares

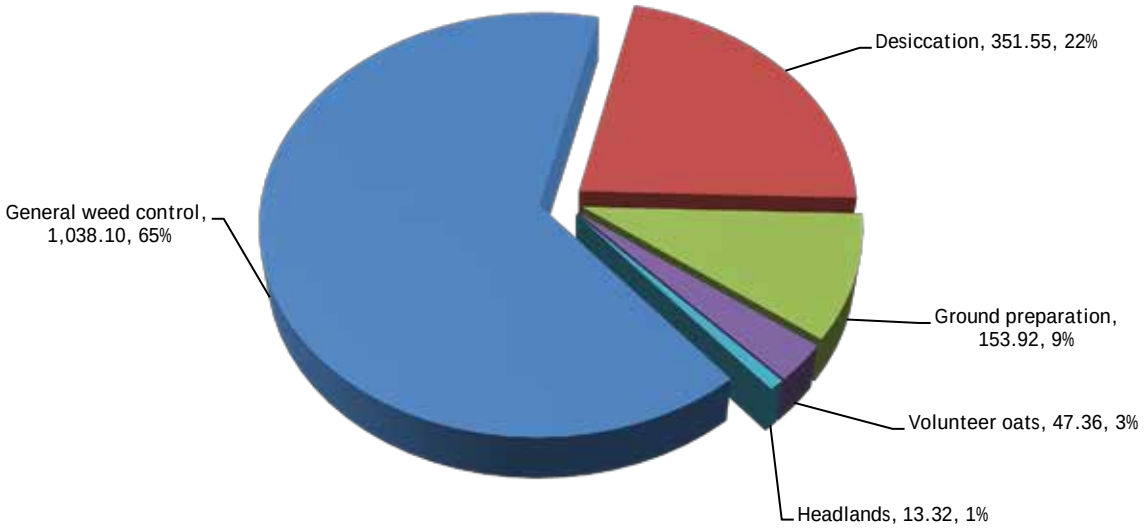
· Weight of active substances applied: 740 kilogrammes

· 94% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	566.15	477.71	524.07	35.29
Fluroxypyr	275.21	275.21	41.14	17.16
Mecoprop-P	169.21	169.21	114.2	10.55
Metsulfuron-methyl	107.22	107.22	0.52	6.68
Diflufenican/flufenacet	104.87	104.87	12.96	6.54

Figure 54: Spring wheat: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – spring wheat

· Basic area treated: 218 hectares

· Area treated: 256 spray hectares

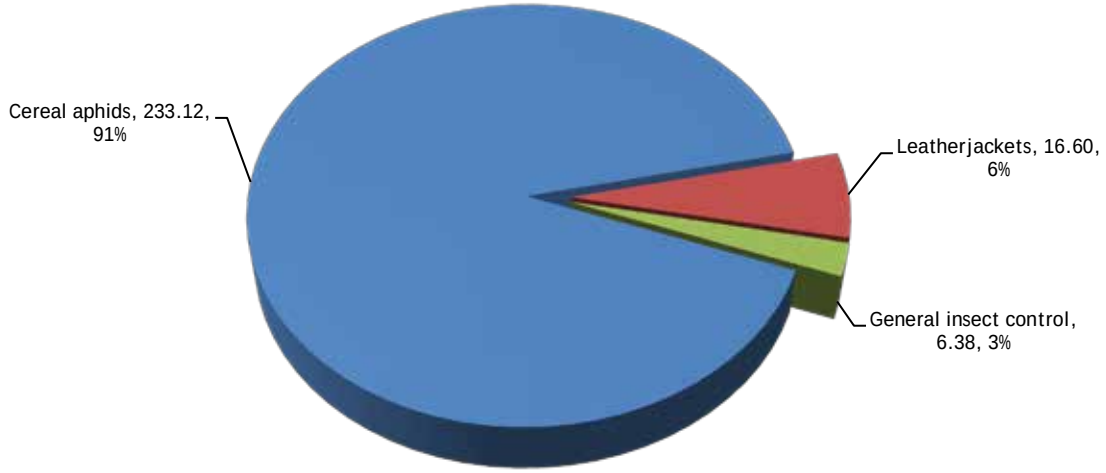
· Weight of active substances applied: 18 kilogrammes

· 36% of the area grown treated with insecticides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	138	138	0.68	53.89
Esfenvalerate	95.12	63.21	0.38	37.14
Chlorpyrifos	22.99	22.99	16.74	8.98

Figure 55: Spring wheat: reasons for insecticide use (spha), 2014.



Growth regulators – spring wheat

· Basic area treated: 372 hectares

· Area treated: 580 spray hectares

· Weight of active substances applied: 242 kilogrammes

· 62% of the area grown treated with growth regulators

· All applications were for growth regulation

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Trinexapac-ethyl	172.35	172.35	10.83	29.70
Chlormequat	152.52	152.52	91.23	26.28
Chlormequat with choline chloride	150.62	75.31	119.98	25.95
Mepiquat chloride/Prohexadione-calcium	55.5	55.5	7.77	9.56
2-chloroethylphosphonic acid	49.37	49.37	11.85	8.51

Seed treatments – spring wheat

· Area treated: 529 hectares

· Weight of active substances applied: 9 kilogrammes

· 88% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Fludioxonil	361.78	3.42	68.41
Prochloraz/triticonazole	167.10	5.27	31.59

Pesticide usage on winter wheat:

· 7,894 hectares of winter wheat grown in Northern Ireland

· 85,853 treated hectares

· 26,348 kilogrammes applied

· 100% of the area of winter wheat crops grown received a pesticide treatment

· Winter wheat received on average 4.83 fungicide, 2.40 herbicide, 1.35 insecticide, 1 molluscicide, 1.62 growth regulator and 1 other applications.

Figure 56: Comparison of the areas of winter wheat crops grown in Northern Ireland (ha), 1990 – 2014.

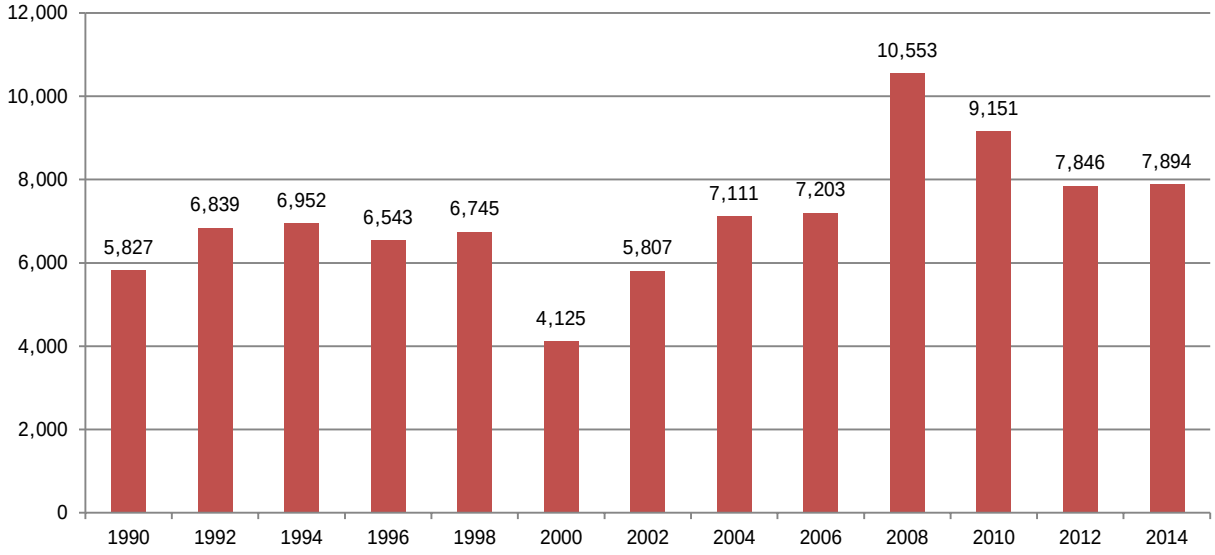


Figure 57: Regional distribution of winter wheat crops grown in Northern Ireland (ha), 2014.

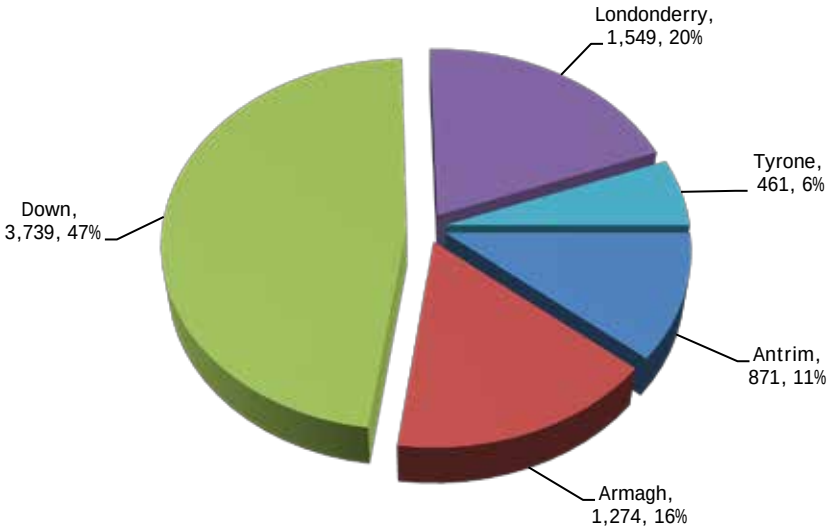


Figure 58: Pesticide usage (spha) on winter wheat crops in Northern Ireland, 2014.

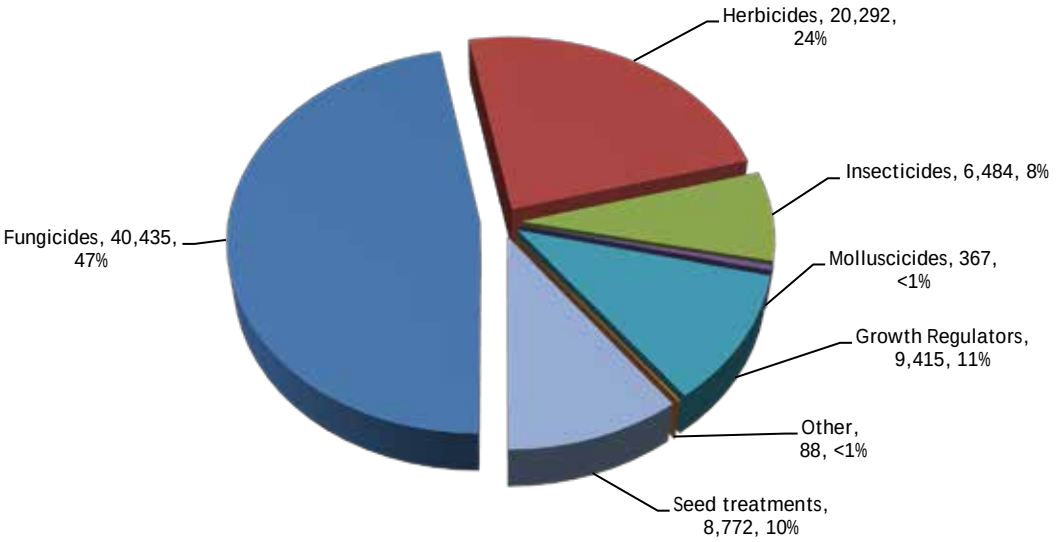


Figure 59: Weight of pesticides (kg) applied to winter wheat crops in Northern Ireland, 2014.

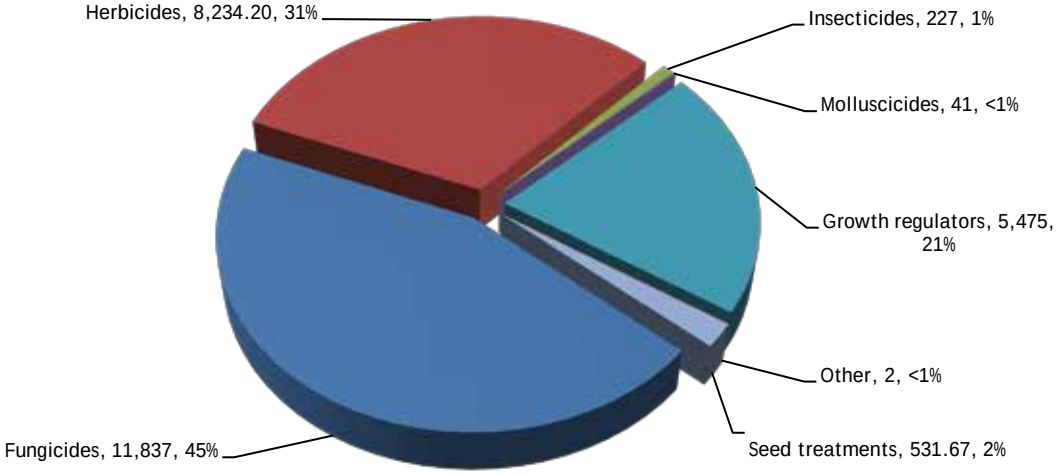
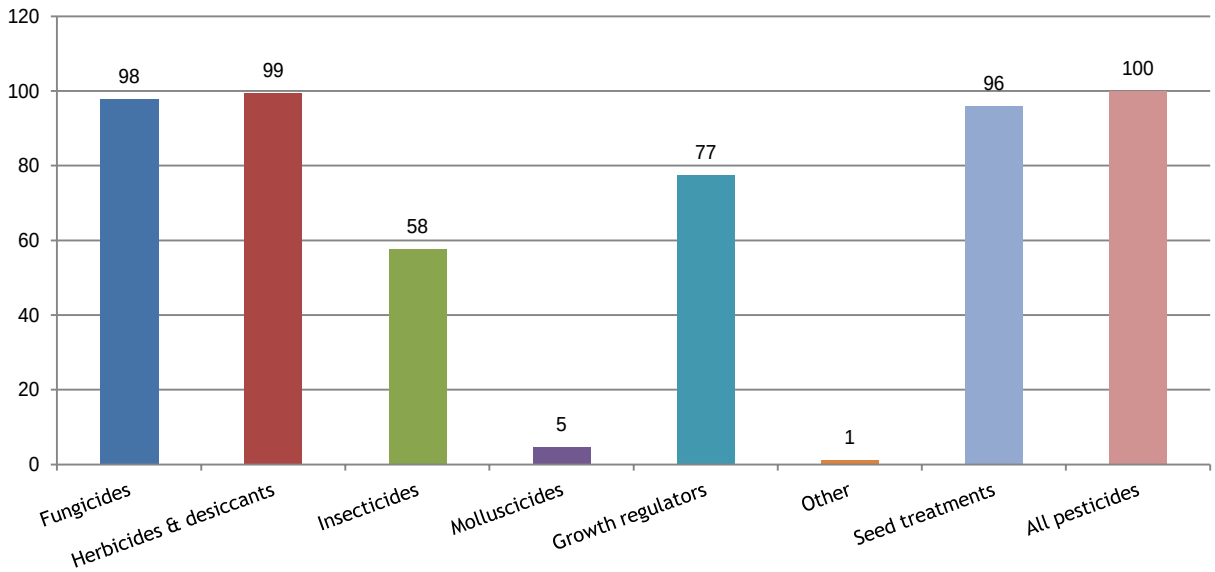


Figure 60: Proportional area (%) of winter wheat crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – winter wheat

· Basic area treated: 7,713 hectares

· Area treated: 40,435 spray hectares

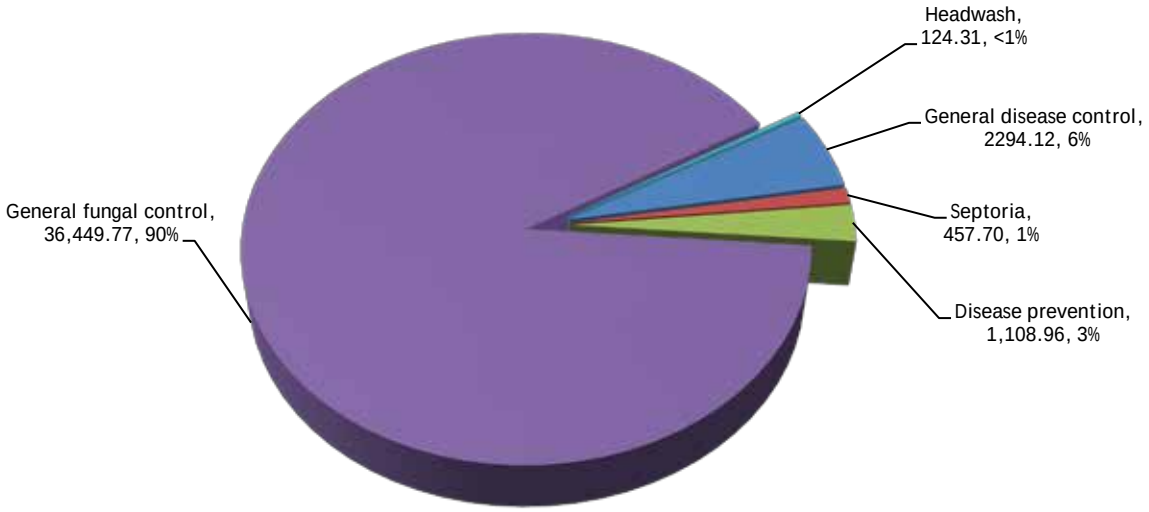
· Weight of active substances applied: 11,837 kilogrammes

· 98% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlorothalonil	9,656.03	6,534.17	4,837.60	23.88
Epoxiconazole/metconazole	4,158.25	2,910.12	475.08	10.28
Prothioconazole/tebuconazole	3,337.48	2,353.75	606.46	8.25
Chlorothalonil/Penthiopyrad	2,471.67	2,288.81	1,359.96	6.11
Epoxiconazole	2,135.75	1,730.98	208.47	5.28

Figure 61: Winter wheat: reasons for fungicide use (spha), 2014.



Herbicides & desiccants – winter wheat

· Basic area treated: 7,853 hectares

· Area treated: 20,292 spray hectares

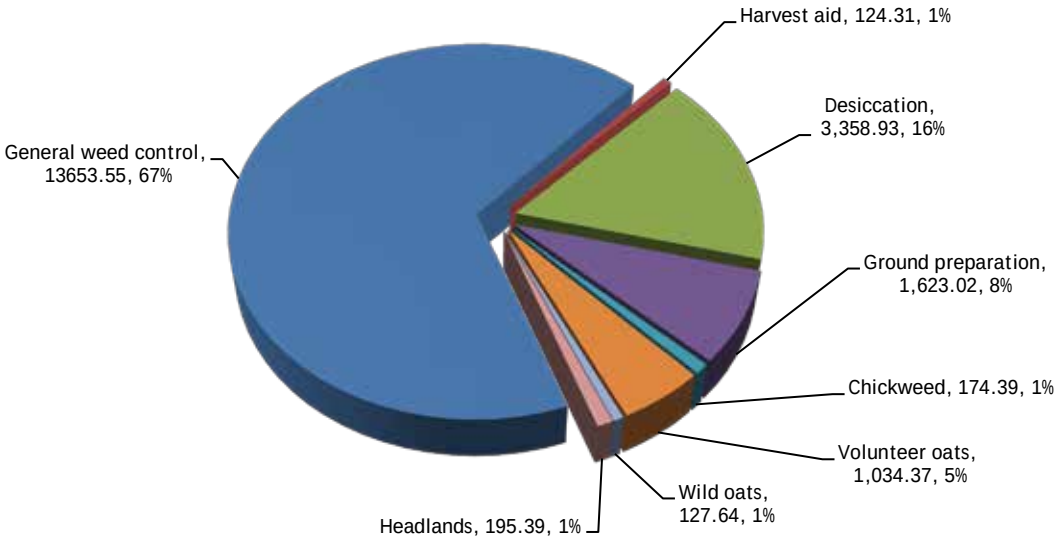
· Weight of active substances applied: 8,234 kilogrammes

· 99% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	4,795.53	4,312.08	3,418.49	23.63
Diflufenican/iodosulfron-methyl-sodium/mesosulfuron-methyl	3,521.61	3,521.61	204.90	17.36
Fluroxypyr	2,255.75	2,175.87	428.53	11.12
Diflufenican	1,325.96	1,325.96	106.90	6.53
Pinoxaden	1,255.91	1,222.65	37.59	6.19

Figure 62: Winter wheat: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – winter wheat

· Basic area treated: 4,555 hectares

· Area treated: 6,484 spray hectares

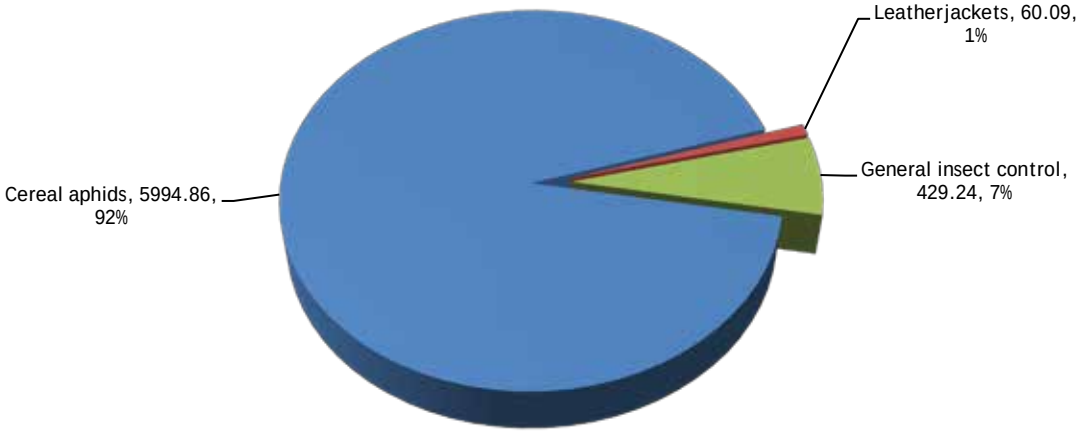
· Weight of active substances applied: 227 kilogrammes

· 58% of the area grown treated with insecticides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Esfenvalerate	2,828.53	2,015.04	11.24	43.62
Lambda-cyhalothrin	2,441.54	2,042.79	11.94	37.65
Alpha-cypermethrin	426.52	426.52	6.40	6.58
Deltamethrin	320.10	320.10	1.96	4.94
Dimethoate	262.07	262.07	73.86	4.04

Figure 63: Winter wheat: reasons for insecticide use (spha), 2014.



Molluscicides - winter wheat

· Basic area treated: 367 hectares

· Area treated: 367 spray hectares

· Weight of active substances applied: 41 kilogrammes

· 5% of the area grown treated with molluscicides

· All applications were to control slugs

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Methiocarb	367.22	367.22	367.22	100

Growth regulators – winter wheat

· Basic area treated: 6,105 hectares

· Area treated: 9,415 spray hectares

· Weight of active substances applied: 5,475 kilogrammes

· 77% of the area grown treated with growth regulators

· All applications were for growth regulation

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlormequat	5008.03	4,582.36	4,688.67	53.19
Trinexapac-ethyl	3162.35	2,985.53	169.79	33.59
Chlormequat/Imazaquin	637.25	637.25	291.66	6.77
2-chloroethylphosphonic acid	399.26	399.26	92.42	4.24
Chlormequat with choline chloride	208.06	208.06	232.03	2.21

Other – winter wheat

· Basic area treated: 88 hectares

· Area treated: 88 spray hectares

· Weight of active substances applied: 2 kilogrammes

· 1.1% of the area grown treated

Seed treatments – winter wheat

· Area treated: 7,576 hectares

· Weight of active substances applied: 532 kilogrammes

· 96% of the area grown was sown with treated seed

· The most commonly applied active substances were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Clothianidin/prothioconazole	3,410.24	358.62	38.88
Prochloraz/triticonazole	2,659.82	76.06	30.32
Silthiofam	1,196.41	53.13	13.64
Fludioxonil	1,176.32	10.41	13.41
Fluquinconazole/prochloraz	249.68	32.29	2.85

Pesticide usage on spring oats:

· 1,341 hectares of spring oat grown in Northern Ireland

· 8,379 treated hectares

· 2,379 kilogrammes applied

· 100% of the area of spring oat crops grown received a pesticide treatment

· Spring oats received on average 1.53 fungicide, 2.52 herbicide, 1 insecticide and 1.15 growth regulator applications.

Figure 64: Comparison of the areas of spring oat crops grown in Northern Ireland (ha), 1990 - 2014.

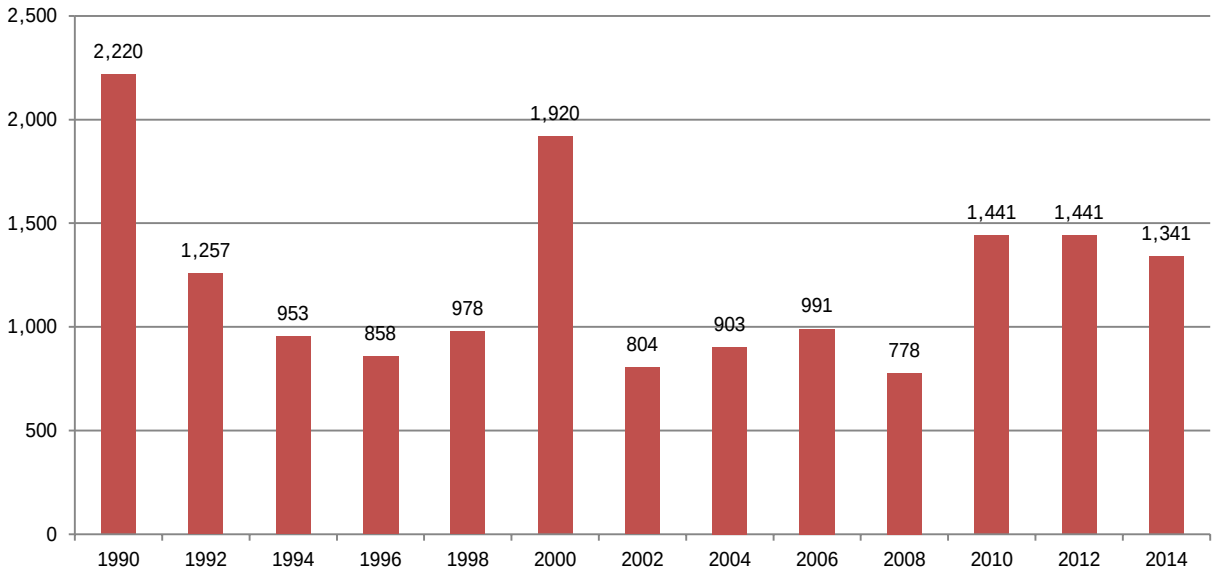


Figure 65: Regional distribution of spring oat crops grown in Northern Ireland (ha), 2014.

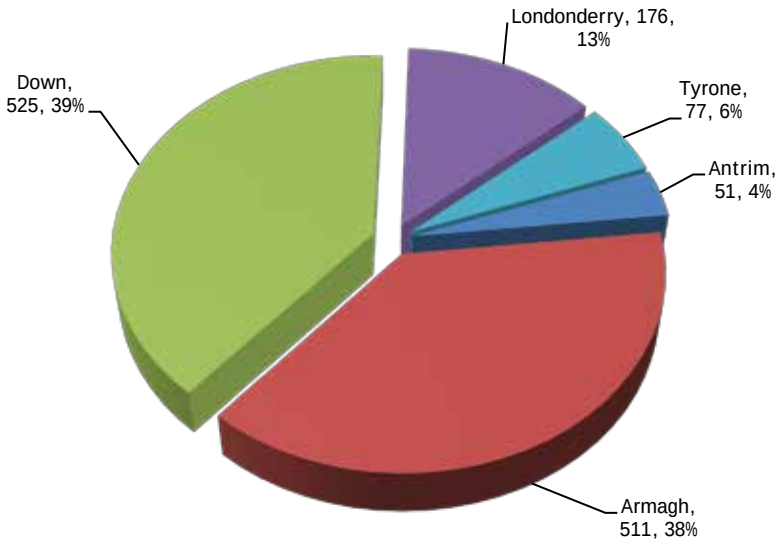


Figure 66: Pesticide usage (spha) on spring oat crops in Northern Ireland, 2014.

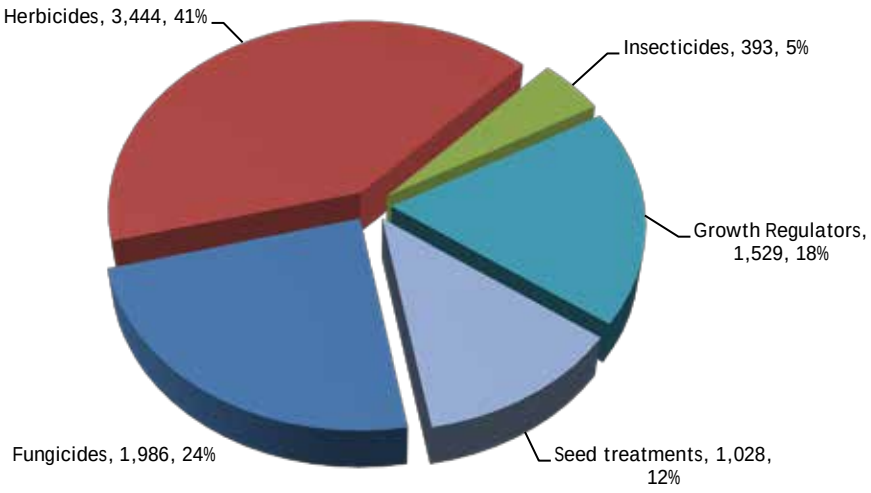


Figure 67: Weight of pesticides (kg) applied to spring oat crops in Northern Ireland, 2014.

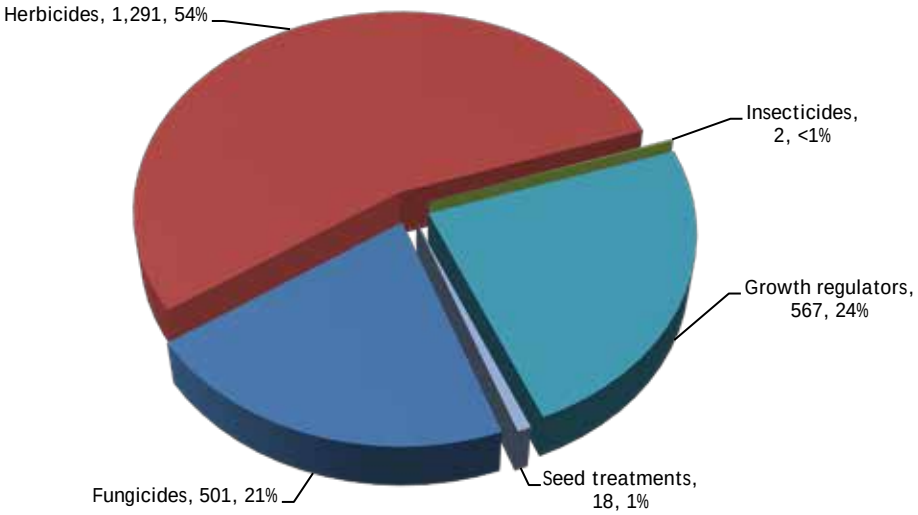
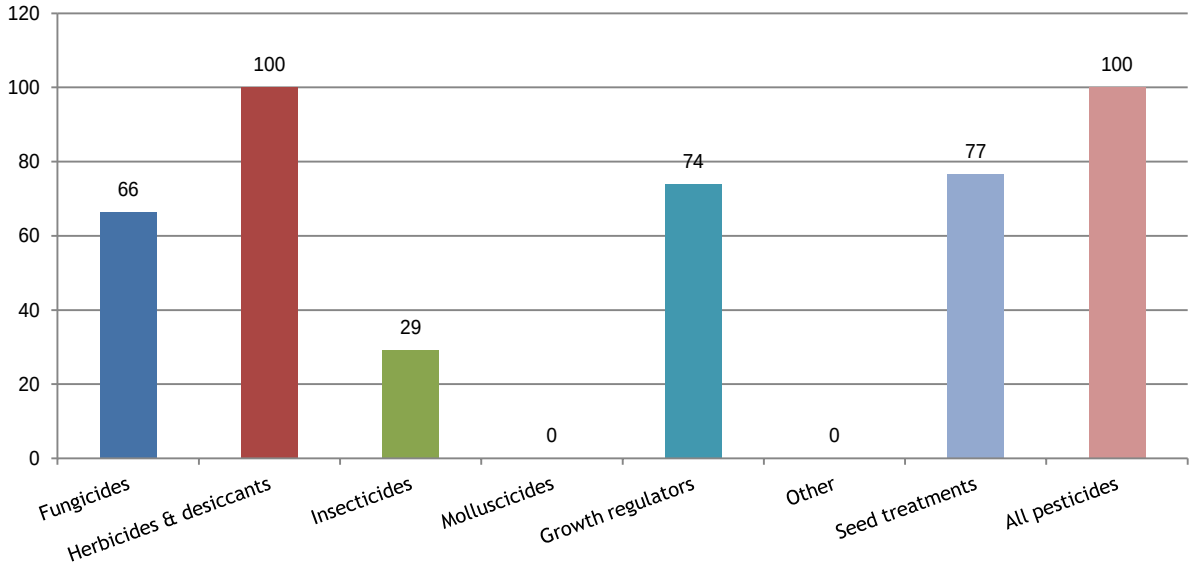


Figure 68: Proportional area (%) of spring oat crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – spring oats

· Basic area treated: 891 hectares

· Area treated: 1,986 spray hectares

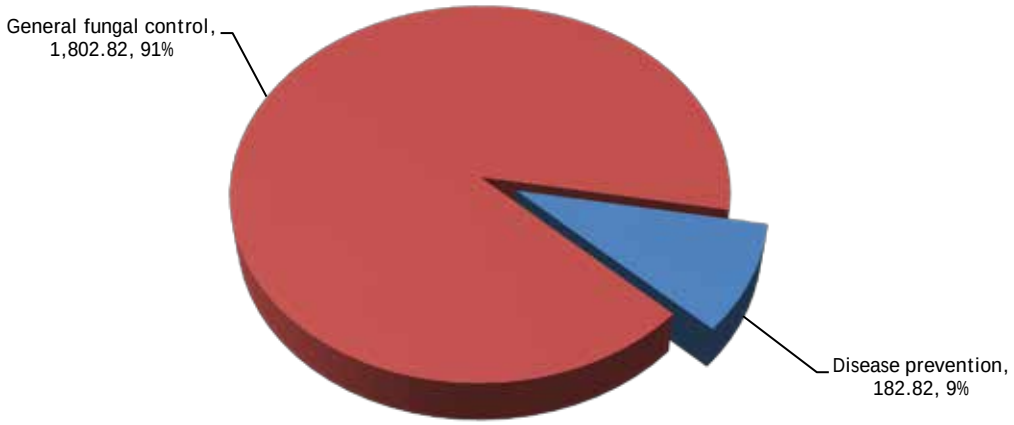
· Weight of active substances applied: 501 kilogrammes

· 66% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Fenpropimorph	456.44	403.48	169.7	22.99
Fenpropimorph/pyraclostrobin	324.84	254.67	132.39	16.36
Prothioconazole/tebuconazole	237.46	237.46	23.46	11.96
Tebuconazole	190.84	190.84	34.69	9.61
Epoxiconazole/fenpropimorph/kresoxim-methyl	184.51	184.51	55.35	9.29

Figure 69: Spring oats: reasons for fungicide use (spha), 2014.



Herbicides & desiccants – spring oats

· Basic area treated: 1,341 hectares

· Area treated: 3,444 spray hectares

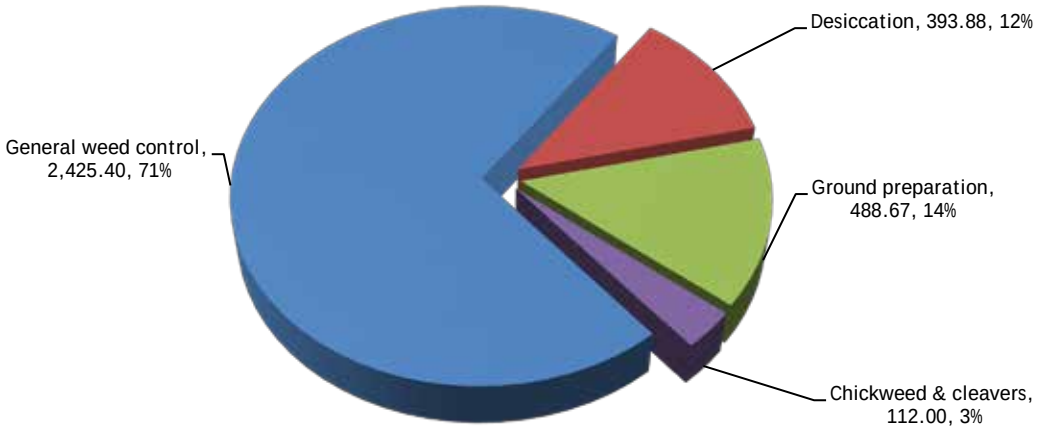
· Weight of active substances applied: 1,291 kilogrammes

· 100% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	882.54	680.56	745.82	25.63
Fluroxypyr	761.5	761.5	104.45	22.11
Metsulfuron-methyl/tribenuron-methyl	567.29	567.29	5.55	16.47
Metsulfuron-methyl	344.21	344.21	2.07	10.00
Mecoprop-P	338.21	338.21	355.25	9.82

Figure 70: Spring oats: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – spring oats

· Basic area treated: 393 hectares

· Area treated: 393 spray hectares

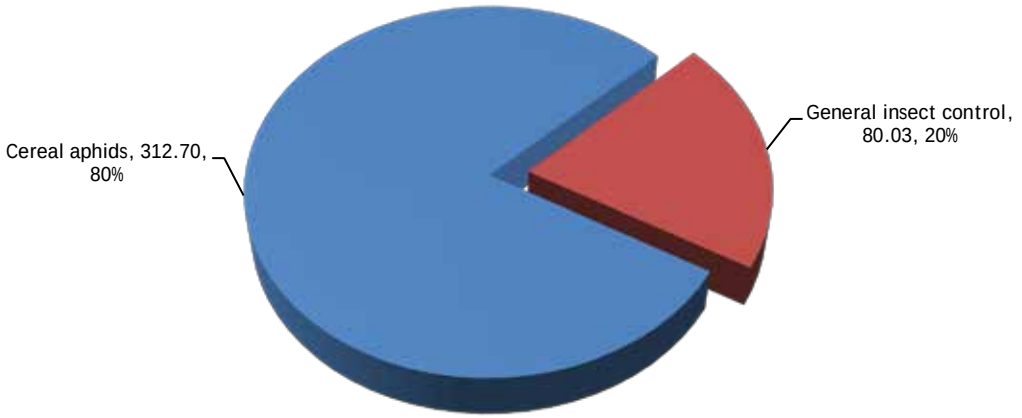
· Weight of active substances applied: 2 kilogrammes

· 29% of the area grown treated with insecticides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	163.77	163.77	0.81	41.70
Esfenvalerate	130.67	130.67	0.59	33.27
Deltamethrin	80.03	80.03	0.5	20.38
Cypermethrin	18.27	18.27	0.46	4.65

Figure 71: Spring oats: reasons for insecticide use (spha), 2014.



Growth regulators – spring oats

· Basic area treated: 992 hectares

· Area treated: 1,529 spray hectares

· Weight of active substances applied: 567 kilogrammes

· 74% of the area grown treated with growth regulators

· All applications were for growth regulation

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Trinexapac-ethyl	757.78	687.62	33.31	49.56
Chlormequat	550.16	427.04	503.16	35.98
Mepiquat chloride/Prohexadione-calcium	184.51	184.51	25.83	12.07
2-chloroethylphosphonic acid	18.27	18.27	1.75	1.19
Ethephon	18.27	18.27	2.63	1.19

Seed treatments – spring oats

· Area treated: 1,028 hectares

· Weight of active substances applied: 18 kilogrammes

· 74% of the area grown was sown with treated seed

· The most commonly applied active substances were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Fludioxonil	504.47	4.51	49.07
Prochloraz/triticonazole	453.37	12.73	44.10
Fluopyram/Prothioconazole/Tebuconazole	70.17	1.25	6.83

Pesticide usage on undersown oats:

· 98 hectares of undersown oats grown in Northern Ireland all of which was in county Down

· 342 treated hectares

· 224 kilogrammes applied

· 100% of the area of undersown crops grown received a pesticide treatment

· Undersown oats received on average 1 fungicide, 1 herbicide and 1 growth regulator application.

Figure 72: Comparison of the areas of undersown oat crops grown in Northern Ireland (ha), 1990 - 2014.

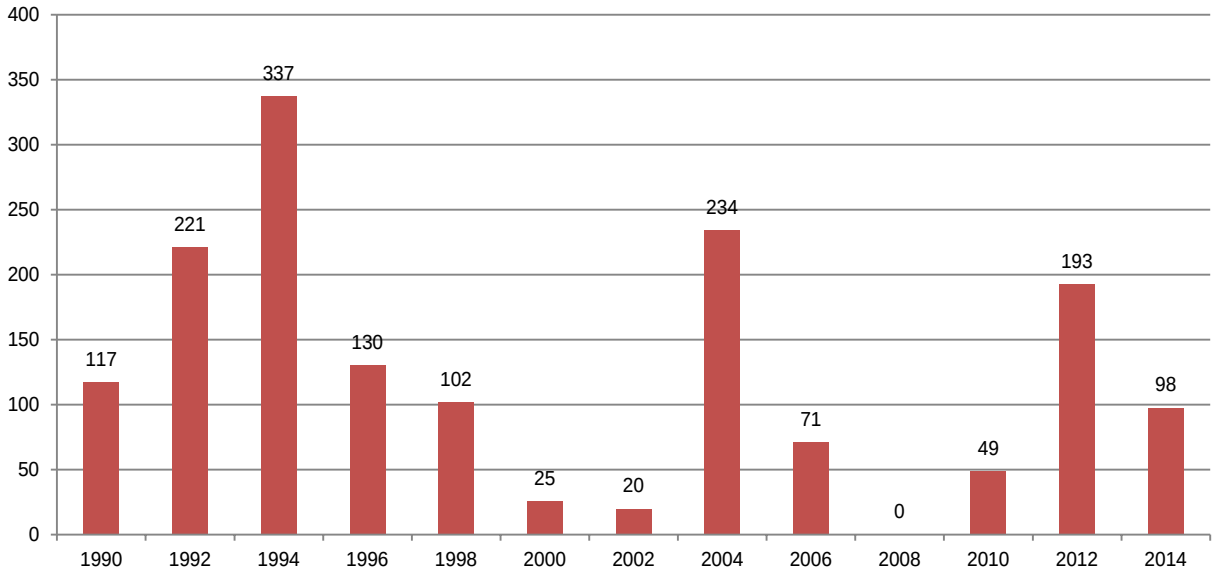


Figure 73: Pesticide usage (spha) on undersown oat crops in Northern Ireland, 2014.

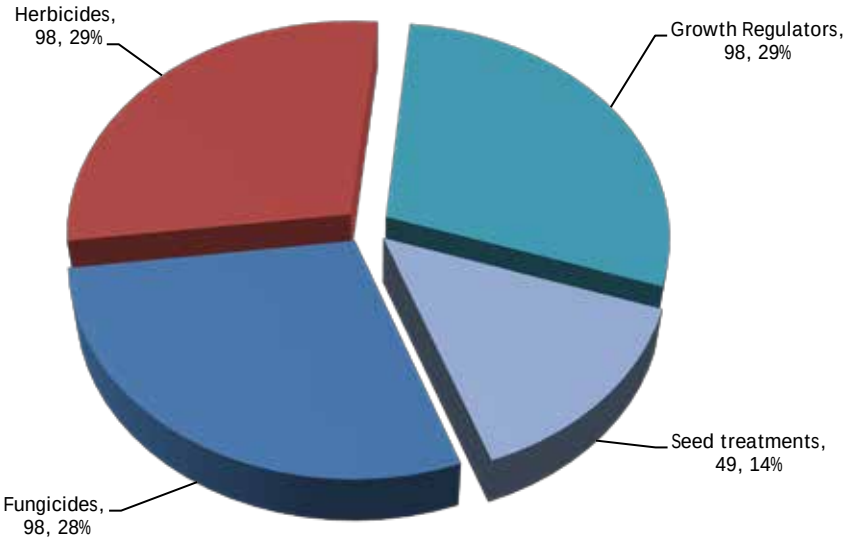


Figure 74: Weight of pesticides (kg) applied to undersown oat crops in Northern Ireland, 2014.

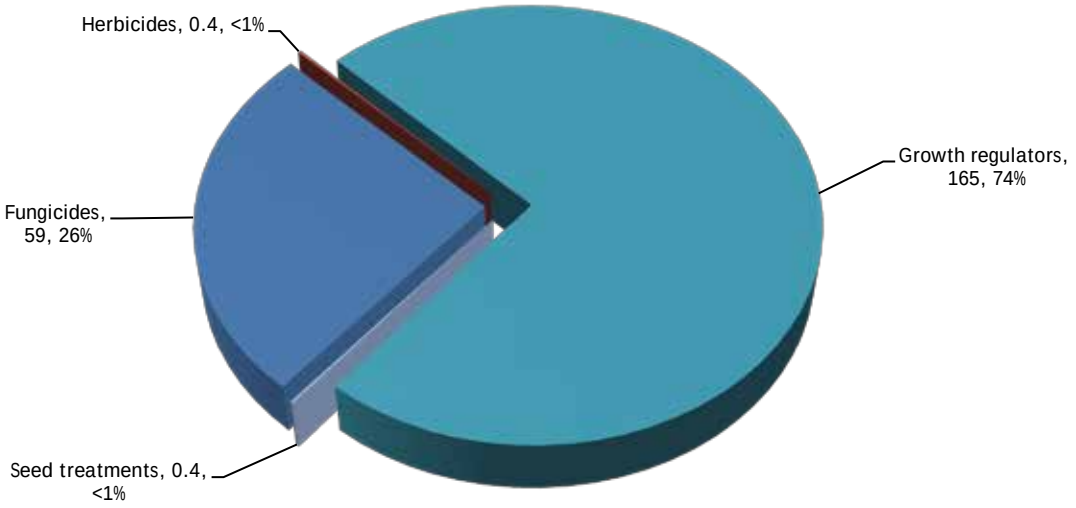
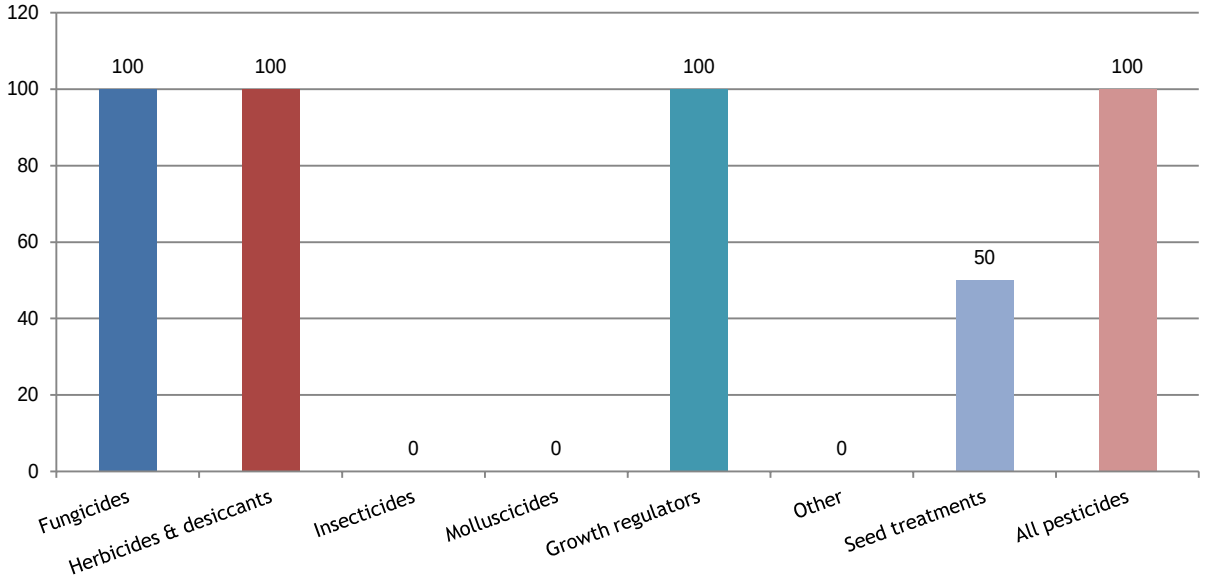


Figure 75: Proportional area (%) of undersown oat crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – undersown oats

· Basic area treated: 98 hectares

· Area treated: 98 spray hectares

· Weight of active substances applied: 59 kilogrammes

· 100% of the area grown treated with fungicides

· All applications were for general fungal control

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Fenpropimorph	97.59	97.59	58.55	100.00

Herbicides & desiccants – undersown oats

· Basic area treated: 98 hectares

· Area treated: 98 spray hectares

· Weight of active substances applied: 0.4 kilogrammes

· 100% of the area grown treated with herbicides & desiccants

· All applications were for general weed control

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Tribenuron-methyl	97.59	97.59	0.44	100

Growth regulators – Undersown oats

· Basic area treated: 98 hectares

· Area treated: 98 spray hectares

· Weight of active substances applied: 165 kilogrammes

· 100% of the area grown treated with growth regulators

· All applications were for growth regulation

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlormequat	97.59	97.59	164.68	100.00

Seed treatments – undersown oats

· Area treated: 49 hectares

· Weight of active substances applied: 0.4 kilogrammes

· 50% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Fludioxonil	48.79	0.38	100

Pesticide usage on winter oats:

· 648 hectares of winter oats grown in Northern Ireland

· 5,403 treated hectares

· 1,695 kilogrammes applied

· 100% of the area of winter oat crops grown received a pesticide treatment

· Winter oats received on average 3.05 fungicide, 2.22 herbicide, 1 insecticide and 1.77 growth regulator applications.

Figure 76: Comparison of the areas of winter oat crops grown in Northern Ireland (ha), 1990 - 2014.

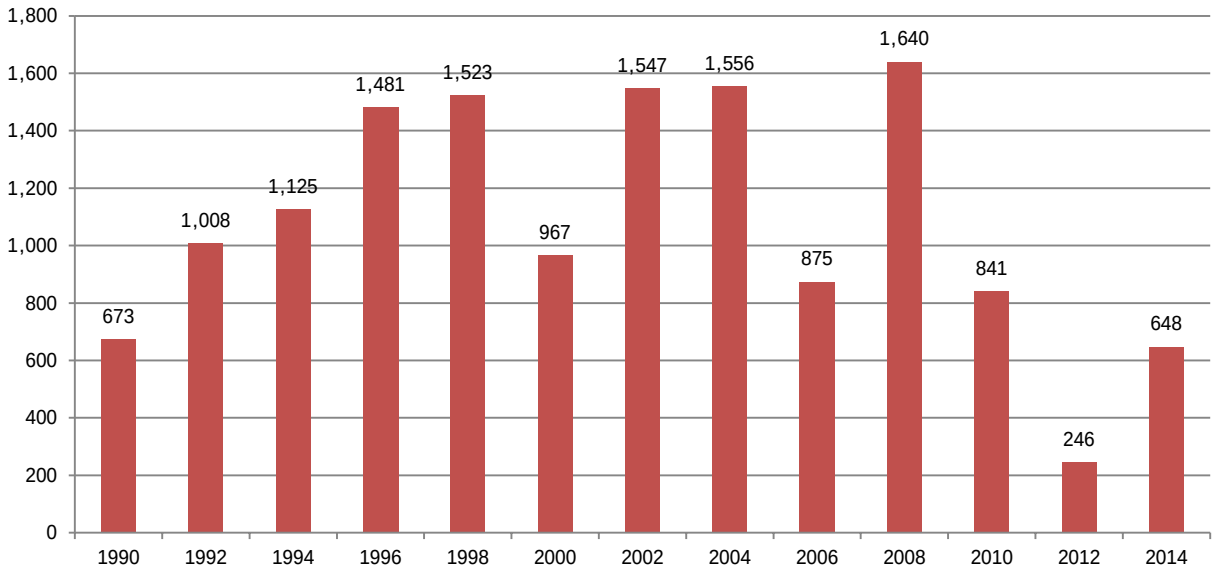


Figure 77: Regional distribution of winter oat crops grown in Northern Ireland (ha), 2014.

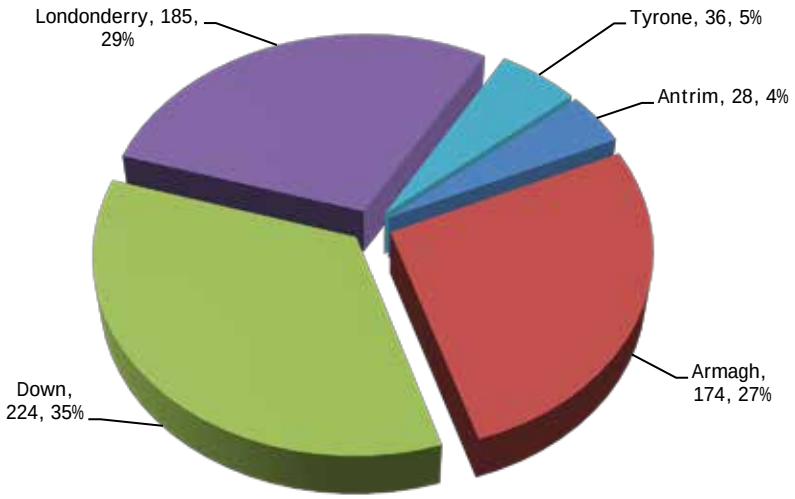


Figure 78: Pesticide usage (spha) on winter oat crops in Northern Ireland, 2014.

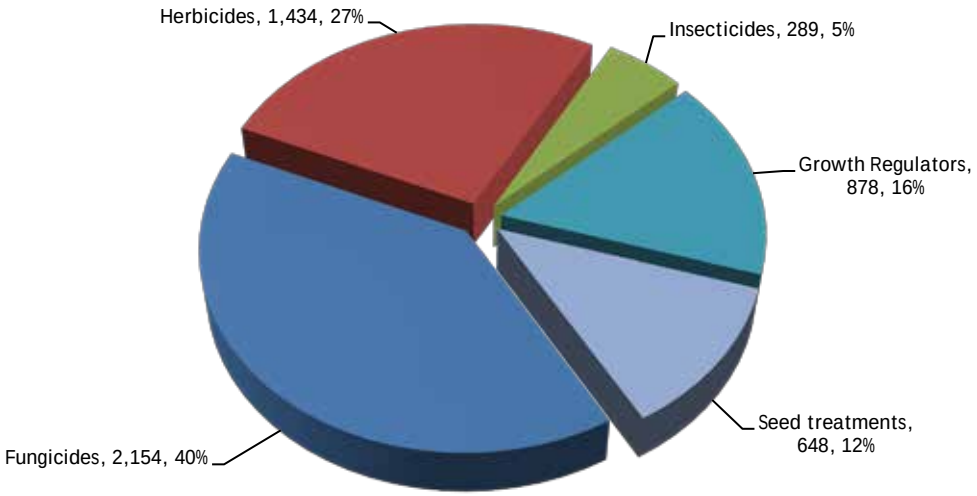


Figure 79: Weight of pesticides (kg) applied to winter oat crops in Northern Ireland, 2014.

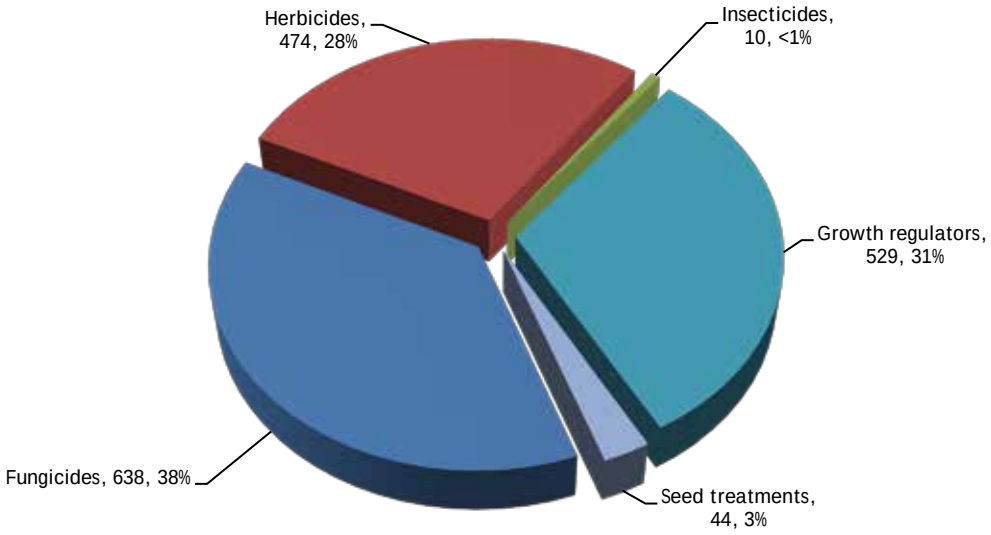
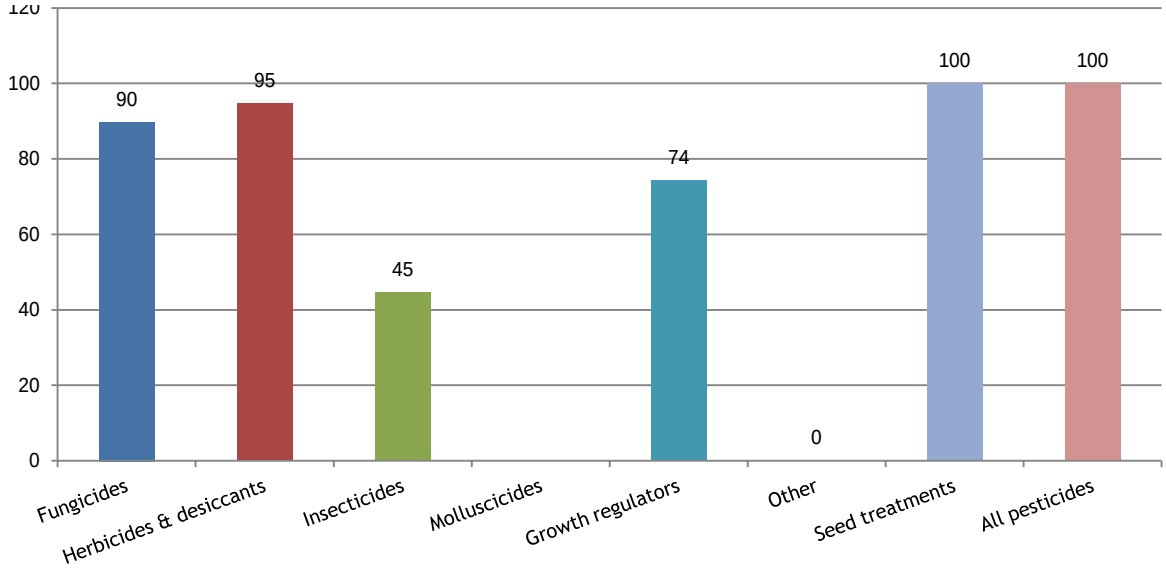


Figure 80: Proportional area (%) of winter oat crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – winter oats

· Basic area treated: 581 hectares

· Area treated: 2,154 spray hectares

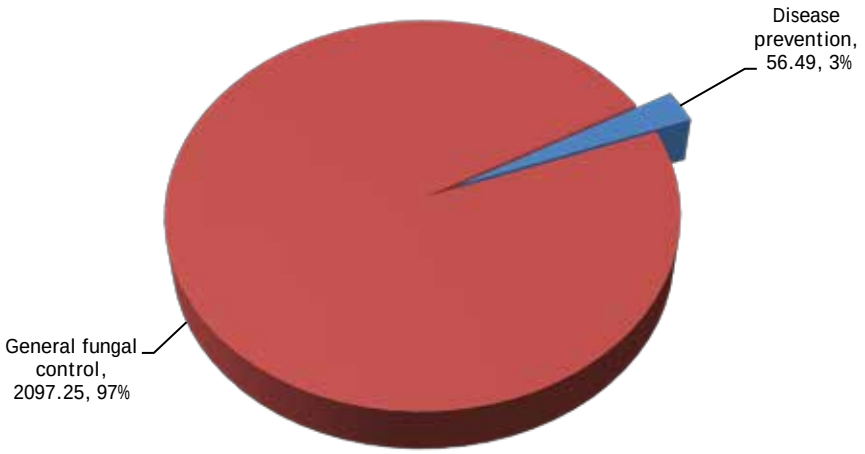
· Weight of active substances applied: 638 kilogrammes

· 90% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Fenpropimorph	524.40	286.11	106.91	24.35
Epoxiconazole/fenpropimorph/metrafenone	409.19	254.62	229.50	19.00
Chlorothalonil	310.57	204.66	159.54	14.42
Epoxiconazole	175.63	175.63	11.53	8.15
Tebuconazole	137.15	68.58	18.64	6.37

Figure 81: Winter oats: reasons for fungicide use (spha), 2014



Herbicides & desiccants – winter oats

· Basic area treated: 613 hectares

· Area treated: 1,434 spray hectares

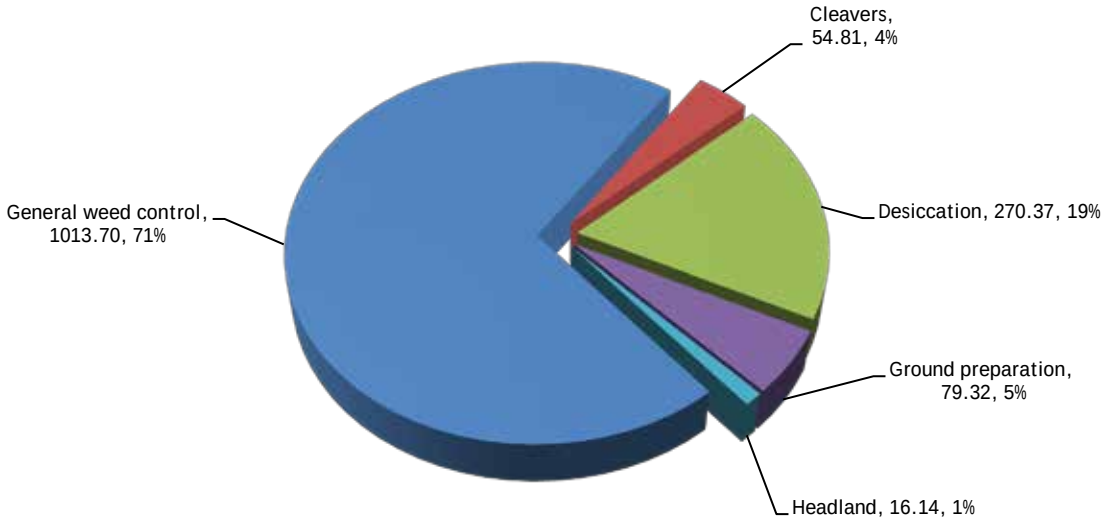
· Weight of active substances applied: 474 kilogrammes

· 95% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	365.83	330.09	263.82	25.51
Carfentrazone-ethyl/flupyrsulfron-methyl	245.5	245.50	6.70	17.12
Mecoprop-P	178.9	178.90	155.45	12.47
Metsulfuron-methyl/Thifensulfuron-methyl	133.71	133.71	3.82	9.32
Flupyrsulfuron-methyl/Thifensulfuron-methyl	119.15	119.15	5.96	8.31
Thifensulfuron-methyl/tribenuron-methyl	119.15	119.15	2.68	8.31

Figure 82: Winter oats: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – winter oats

· Basic area treated: 289 hectares

· Area treated: 289 spray hectares

· Weight of active substances applied: 10 kilogrammes

· 45% of the area grown treated with insecticides

· All applications were to control aphids

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	220.67	220.67	1.09	76.29
Pirimicarb	68.58	68.58	9.15	23.71

Growth regulators – winter oats

· Basic area treated: 481 hectares

· Area treated: 878 spray hectares

· Weight of active substances applied: 529 kilogrammes

· 74% of the area grown treated with growth regulators

· All applications were for growth regulation

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Chlormequat	556.33	426.21	485.91	63.37
Mepiquat chloride/Prohexadione-calcium	228.76	173.96	38.12	26.06
Trinexapac-ethyl	92.78	92.78	4.59	10.57

Seed treatments – winter oats

· Area treated: 648 hectares

· Weight of active substances applied: 44 kilogrammes

· 100% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Clothianidin/prothioconazole	393.72	39.49	60.80
Prochloraz/triticonazole	134.72	3.95	20.80
Fludioxonil	119.15	0.94	18.40

Pesticide usage on winter oilseed rape:

· 427 hectares of winter oilseed rape grown in Northern Ireland

· 3,300 treated hectares

· 1,536 kilogrammes applied

· 100% of the area of winter oilseed rape crops grown received a pesticide treatment

· Winter oilseed rape crops received on average 2.89 fungicide, 2.15 herbicide, 1 insecticide, 1.92 molluscicide and 1.05 other applications.

Figure 83: Comparison of the areas of winter oilseed rape crops grown in Northern Ireland (ha), 1990 - 2014.

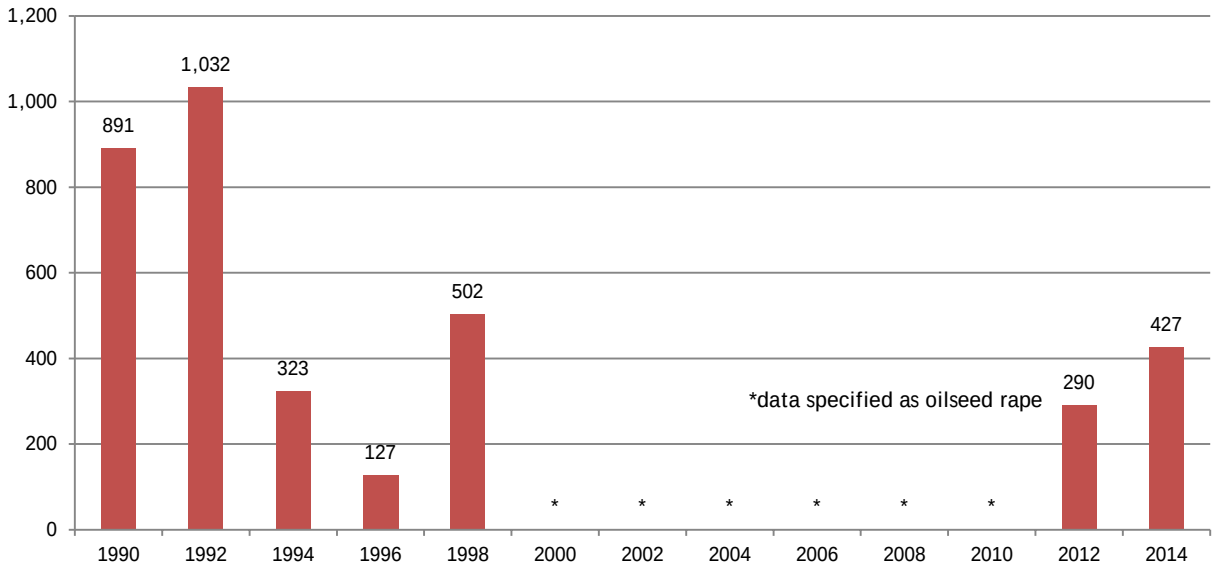


Figure 84: Regional distribution of winter oilseed rape crops grown in Northern Ireland (ha), 2014.

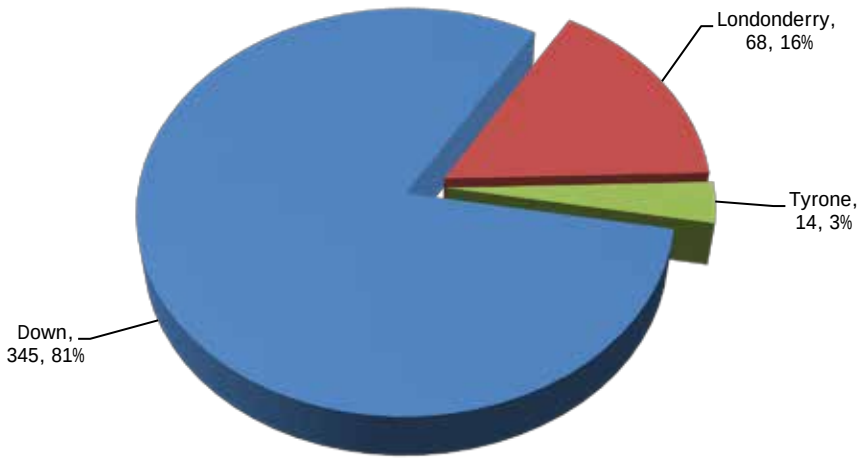


Figure 85: Pesticide usage (spha) on winter oilseed rape crops in Northern Ireland, 2014.

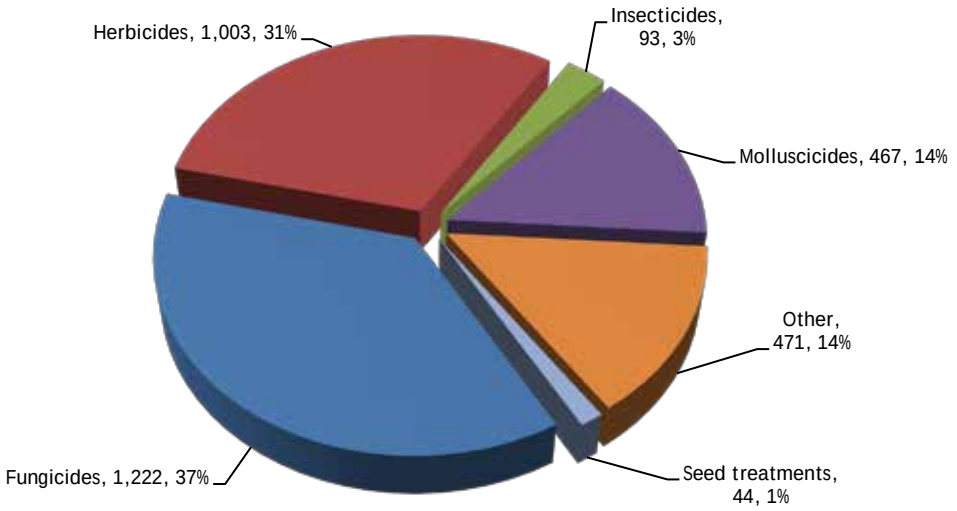


Figure 86: Weight of pesticides (kg) applied to winter oilseed rape crops in Northern Ireland, 2014.

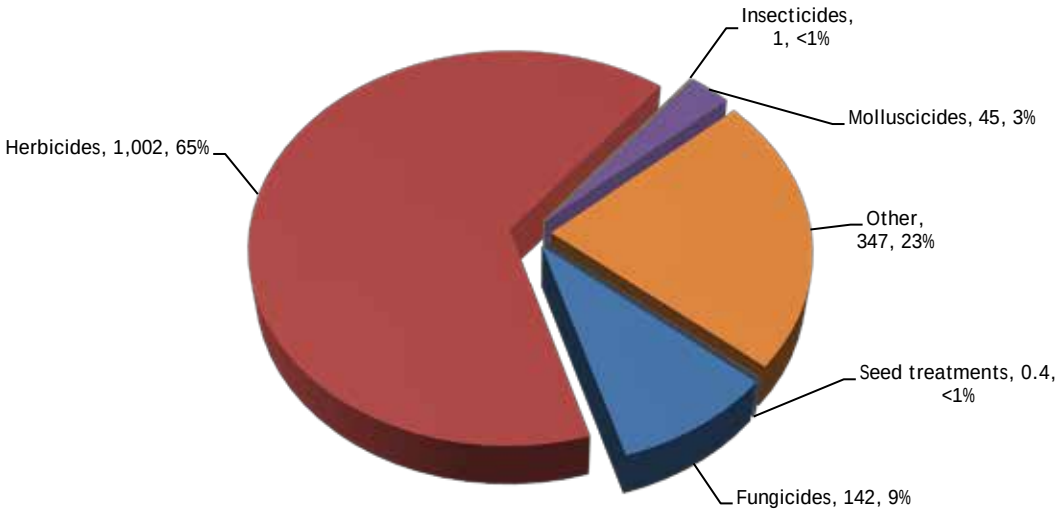
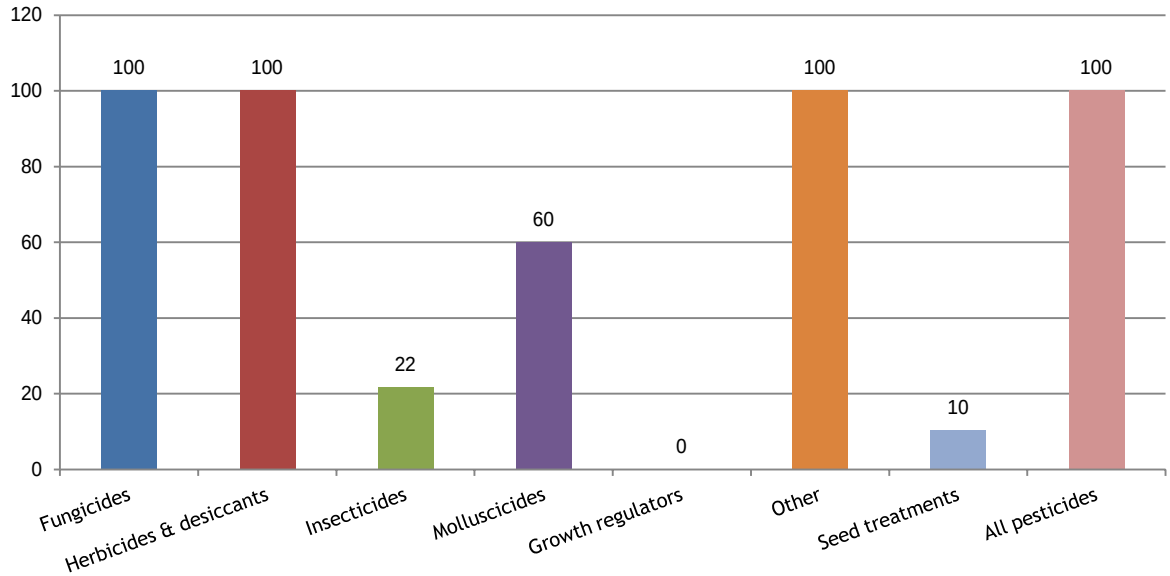


Figure 87: Proportional area (%) of winter oilseed rape crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – winter oilseed rape

· Basic area treated: 427 hectares

· Area treated: 1,222 spray hectares

· Weight of active substances applied: 142 kilogrammes

· All applications were for general fungal control

· 100% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Prothioconazole	651.95	426.63	57.39	53.35
Azoxystrobin	358.71	358.71	39.47	29.35
Tebuconazole	174	160.09	37.72	14.24
Prothioconazole/tebuconazole	23.46	23.46	5.87	1.92
Fluoxastrobin/prothioconazole	13.92	13.92	1.39	1.14

Herbicides & desiccants – winter oilseed rape

· Basic area treated: 427 hectares

· Area treated: 1,003 spray hectares

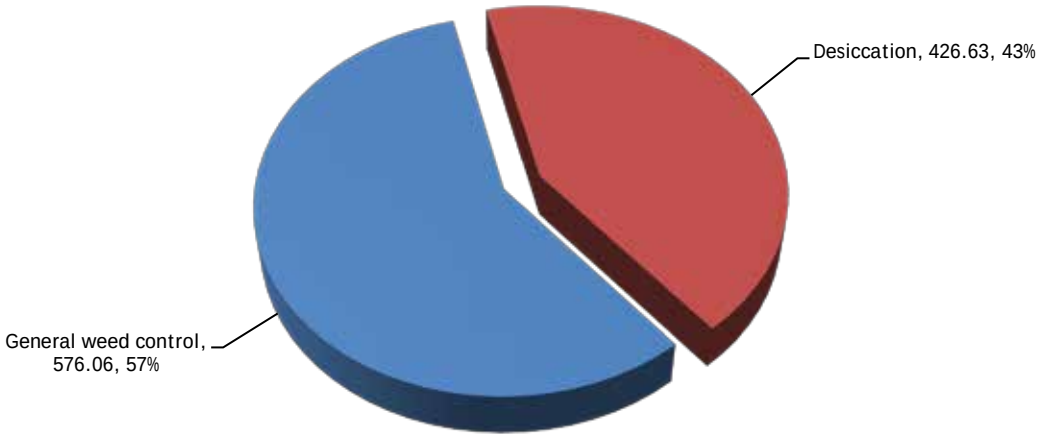
· Weight of active substances applied: 1,002 kilogrammes

· 100% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	426.63	426.63	654.95	42.549
Propyzamide	382.18	382.18	258.95	38.115
Propaquizafop	101.72	101.72	10.87	10.145
Metazachlor	78.25	78.25	75.4	7.804
Clopyralid/picloram	13.92	13.92	1.53	1.388

Figure 88: Winter oilseed rape: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – oilseed rape

· Basic area treated: 93 hectares

· Area treated: 93 spray hectares

· Weight of active substances applied: 1 kilogrammes

· 22% of the area grown treated with insecticides

· All applications were for general insect control

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	92.52	92.52	0.69	100

Molluscicides - winter oilseed rape

· Basic area treated: 256 hectares

· Area treated: 467 spray hectares

· Weight of active substances applied: 45 kilogrammes

· 60% of the area grown treated with molluscicides

· All applications were to control slugs

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Methiocarb	467.26	255.85	44.55	100

Other treatment – winter oilseed rape

· Basic area treated: 427 spray hectare

· Area treated: 471 spray hectares

· Weight of active substances applied: 347 kilogrammes

· 100% of the area grown treated with other treatments.

· These applications were used as ‘pod stickers’

· The active substances applied were:

	Treated area (spha)	Quantity applied (kgs)	% of the treated area
Synthetic latex	382.18	321.66	81.2
Calcium chloride	44.45	1.11	9.4
Carboxylated styrene-butadiene	44.45	24.23	9.4

Seed treatments – winter oilseed rape

· Area treated: 44 hectares

· Weight of active substances applied: 0.4 kilogrammes

· 10% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Thiram	44.45	0.44	100.00

Pesticide usage on spring oilseed rape:

· 67 hectares of spring oilseed rape grown in Northern Ireland

· 269 treated hectares

· 136 kilogrammes applied

· 100% of the area of spring oilseed rape crops grown received a pesticide treatment

· Spring oilseed rape crops received on average 1.00 fungicide and 3.39 herbicide applications.

Figure 89: Comparison of the areas of spring oilseed rape crops grown in Northern Ireland (ha), 1990 - 2014.

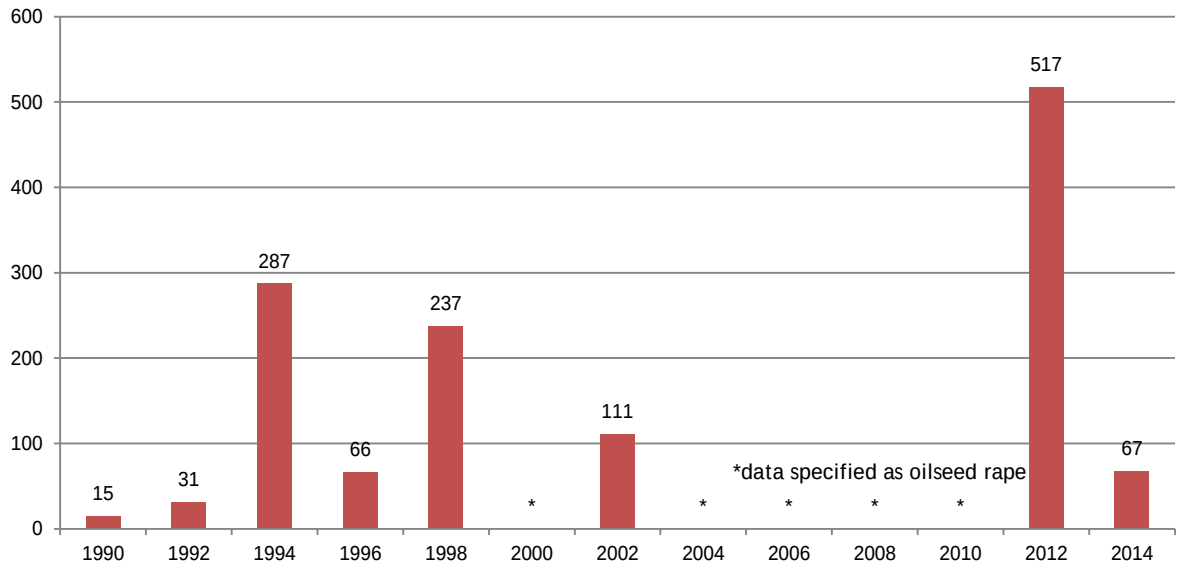


Figure 90: Regional distribution of spring oilseed rape crops grown in Northern Ireland (ha), 2014.

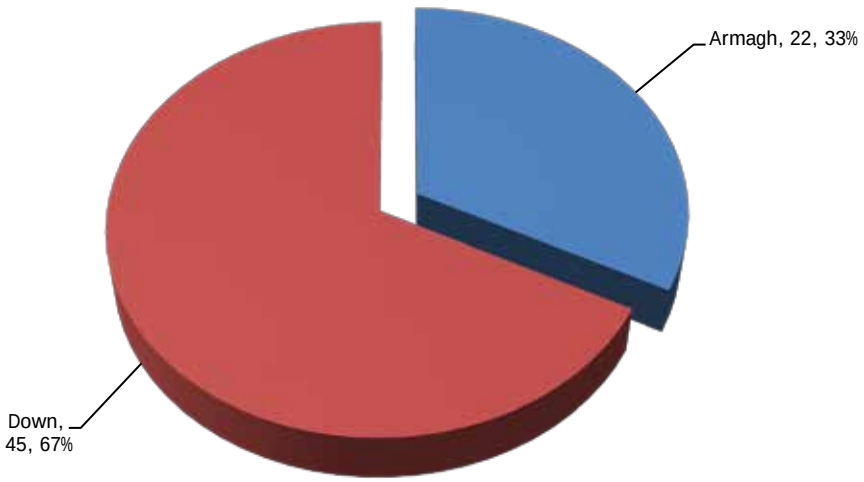


Figure 91: Pesticide usage (spha) on spring oilseed rape crops in Northern Ireland, 2014.

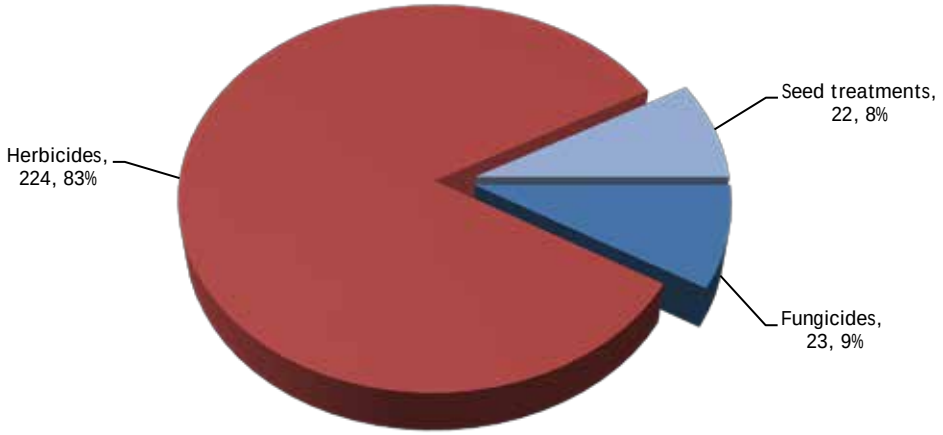


Figure 92: Weight of pesticides (kg) applied to spring oilseed rape crops in Northern Ireland, 2014.

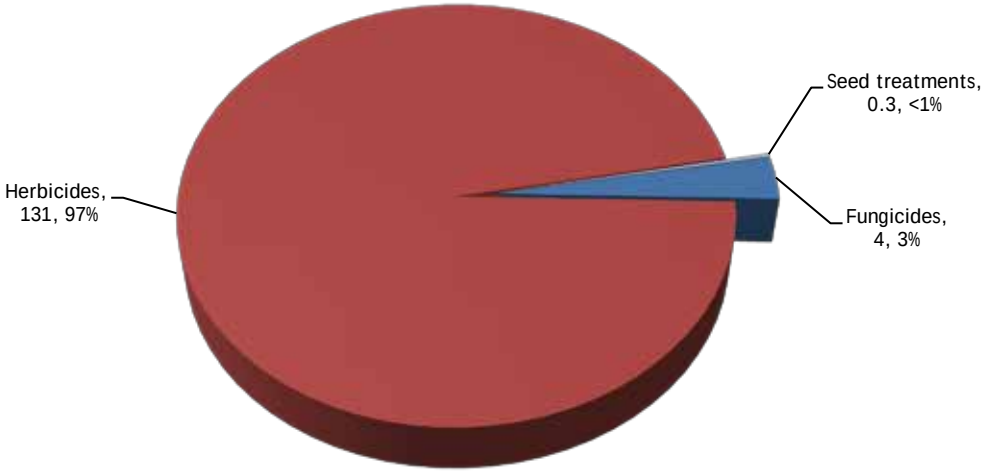
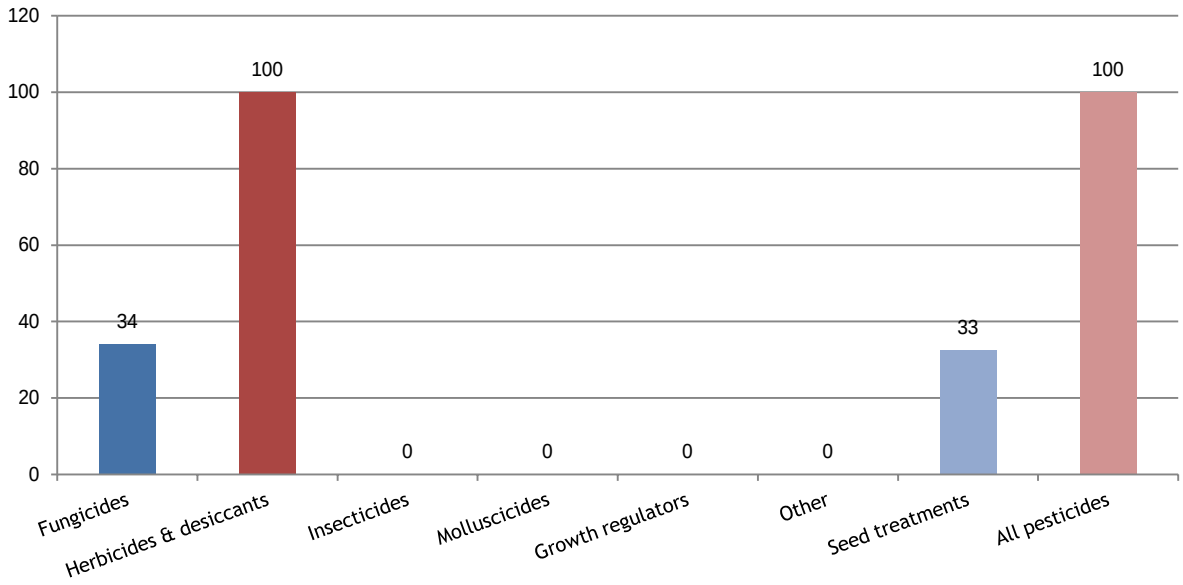


Figure 93: Proportional area (%) of spring oilseed rape crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – spring oilseed rape

· Basic area treated: 23 hectares

· Area treated: 23 spray hectares

· Weight of active substances applied: 4 kilogramme

· 34% of the area grown treated with fungicides

· All fungicide applications were for general fungal control

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Tebuconazole	22.88	22.88	4.29	100

Herbicides & desiccants – spring oilseed rape

· Basic area treated: 67 hectares

· Area treated: 224 spray hectares

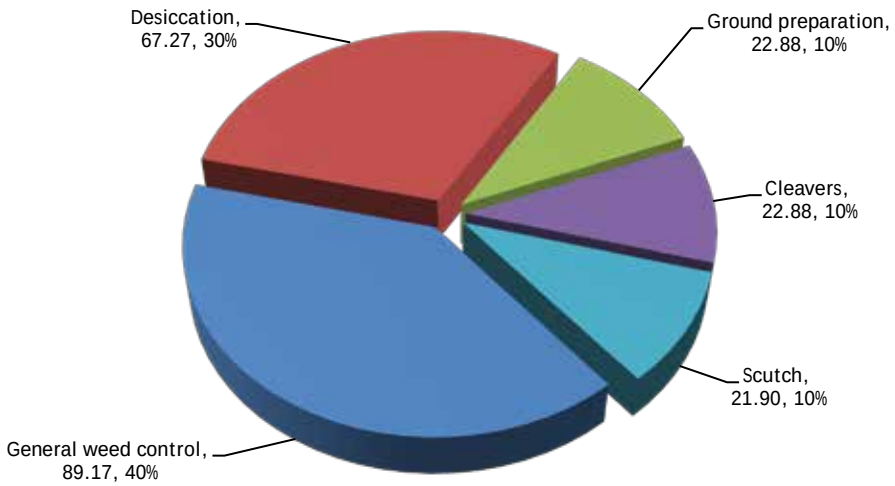
· Weight of active substances applied: 131 kilogrammes

· 100% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	67.27	67.27	77.41	30.02
Metazachlor	67.27	67.27	41.16	30.02
Clopyralid/picloram	22.88	22.88	2.68	10.21
Diquat	22.88	22.88	9.15	10.21
Clomazone	21.9	21.9	0.98	9.77
Unknown herbicide	21.9	21.9	.	9.77

Figure 94: Spring oilseed rape: reasons for herbicide & desiccant use (spha), 2014.



Seed treatments – oilseed rape

· Area treated: 22 hectares

· Weight of active substances applied: 0.3 kilogrammes

· 33% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Thiram	21.90	0.32	100.00

Pesticide usage on peas & field beans:

· 54 hectares of peas & field bean crops grown in Northern Ireland

· 276 treated hectares

· 103 kilogrammes applied

· 100% of the area of pea & bean crops grown received a pesticide treatment

· Pea & field bean crops received on average 3.00 fungicide, 1.47 herbicide and 1 insecticde applications.

Figure 95: Comparison of the areas of pea & field bean crops grown in Northern Ireland (ha), 1990 - 2014.

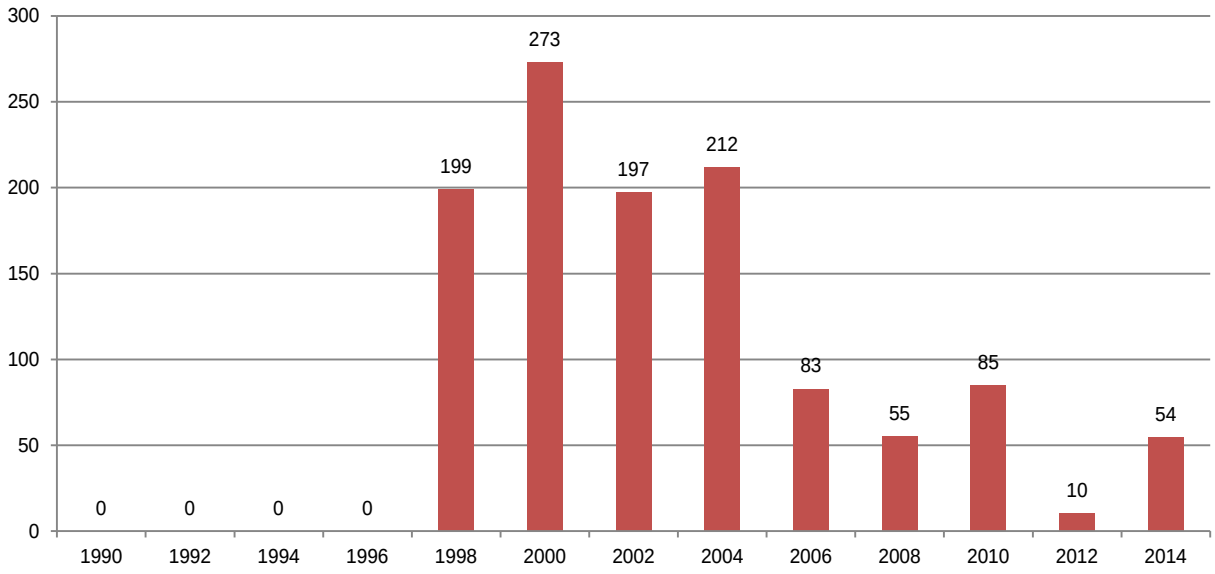


Figure 96: Regional distribution of pea & bean crops grown in Northern Ireland (ha), 2014.

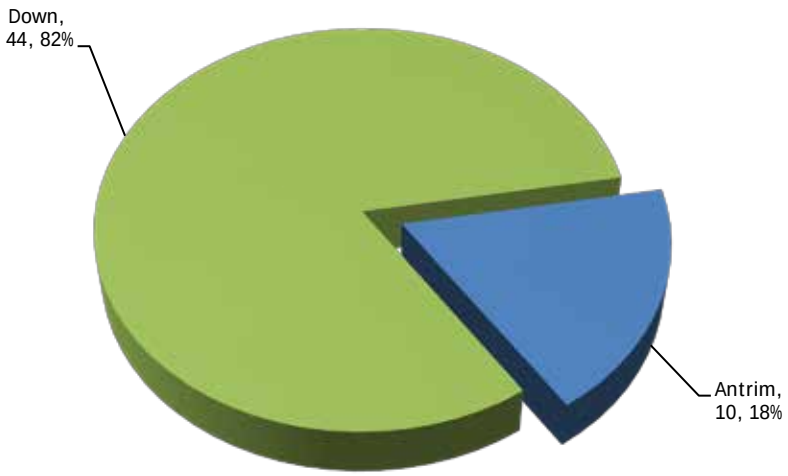


Figure 97: Pesticide usage (spha) on pea & field bean crops in Northern Ireland, 2014.

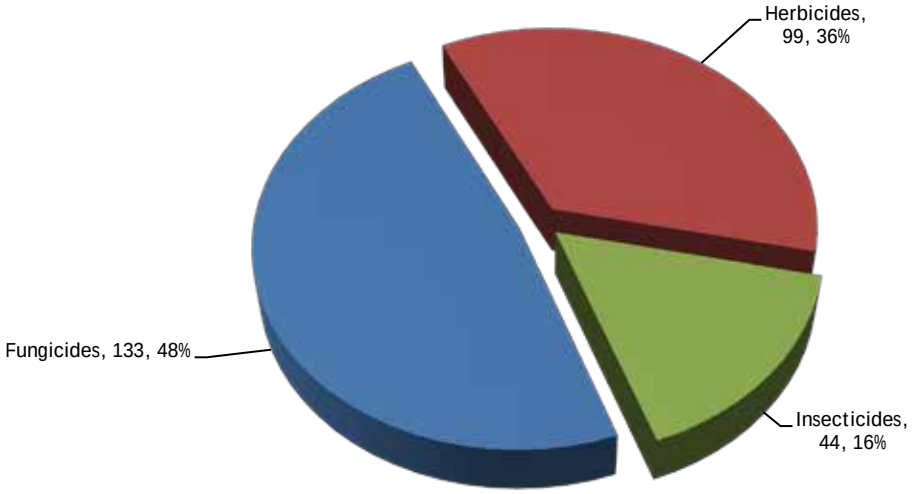


Figure 98: Weight of pesticides (kg) applied to pea & field bean crops in Northern Ireland, 2014.

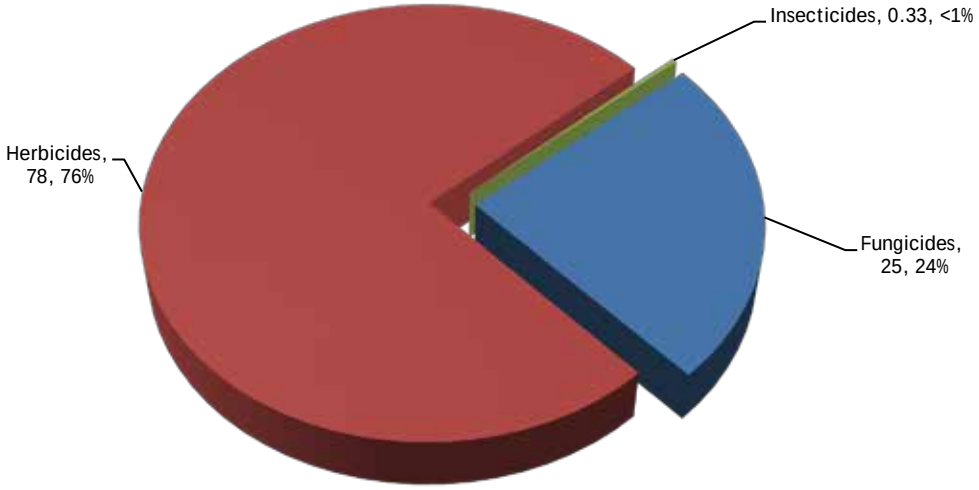
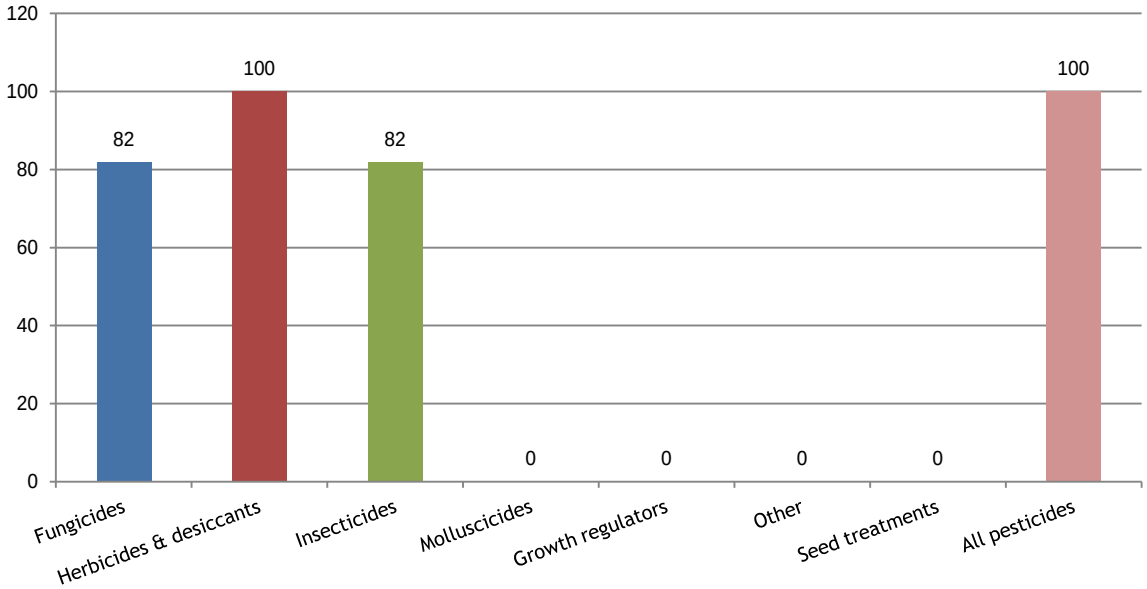


Figure 99: Proportional area (%) of pea & field bean crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – peas & field beans

· Basic area treated: 44 hectares

· Area treated: 133 spray hectares

· Weight of active substances applied: 25 kilogrammes

· 82% of the area grown treated with fungicides

· All fungicide applications were for general fungal control

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Tebuconazole	88.8	44.4	17.11	66.66
Azoxystrobin	44.4	44.4	7.81	33.33

Herbicide & desiccants – peas & field beans

· Basic area treated: 54 hectares

· Area treated: 99 spray hectares

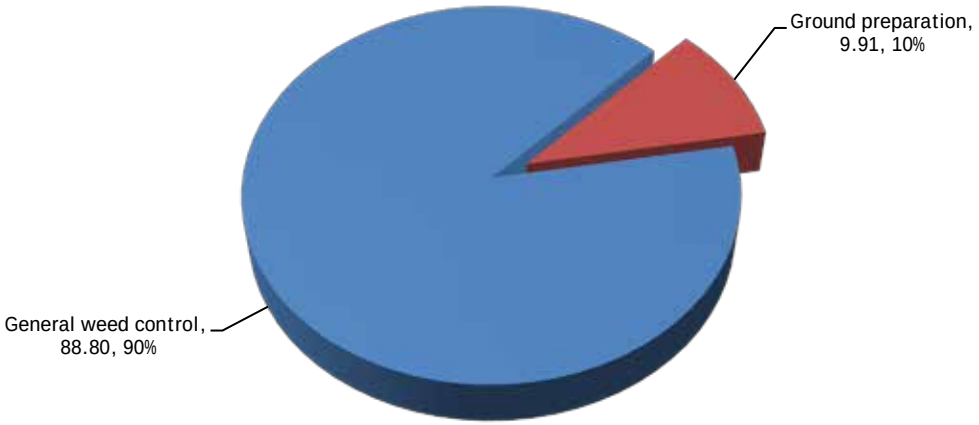
· Weight of active substances applied: 78 kilogrammes

· 100% of the area grown treated with herbicide & desiccants

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Bentazone	44.4	44.4	16.58	44.98
Pendimethalin	44.4	44.4	57.88	44.98
Glyphosate	9.91	9.91	3.57	10.04

Figure 100: Peas & field beans: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – peas & field beans

· Basic area treated: 44 hectares

· Area treated: 44 spray hectares

· Weight of active substances applied: 0.3 kilogrammes

· 82% of the area grown treated with insecticides

· All applications were for general insect control

· The active substances applied were:

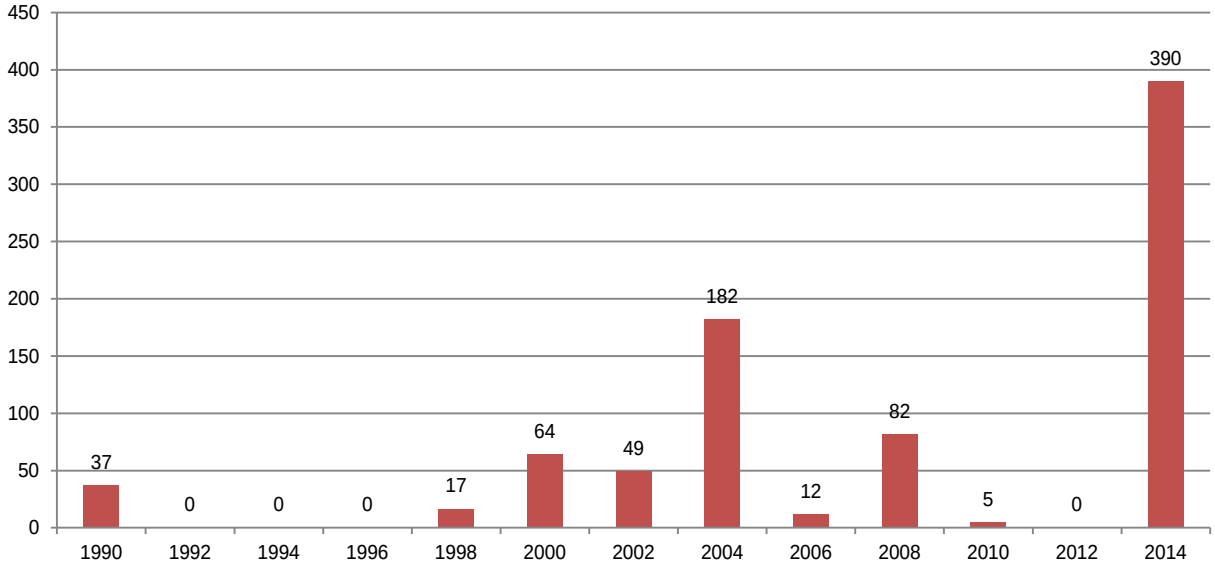
	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	44.4	44.4	0.33	100

Pesticide usage on triticale:

· 390 hectares of triticale crops grown in Northern Ireland all of which were in county Londonderry

· Triticale crops received no pesticide applications

Figure 101: Comparison of the areas of triticale crops grown in Northern Ireland (ha), 1990 - 2014.



Pesticide usage on early potatoes:

· 155 hectares of early potatoes grown in Northern Ireland

· 1,629 treated hectares

· 1,132 kilogrammes applied

· 100% of the area of early potato crops grown received a pesticide treatment

· Early potato crops received on average 7.35 fungicide, 2.83 herbicide & desiccant and 1 insecticide applications

Figure 102: Comparison of the areas of early potato crops grown in Northern Ireland (ha), 1990 - 2012.

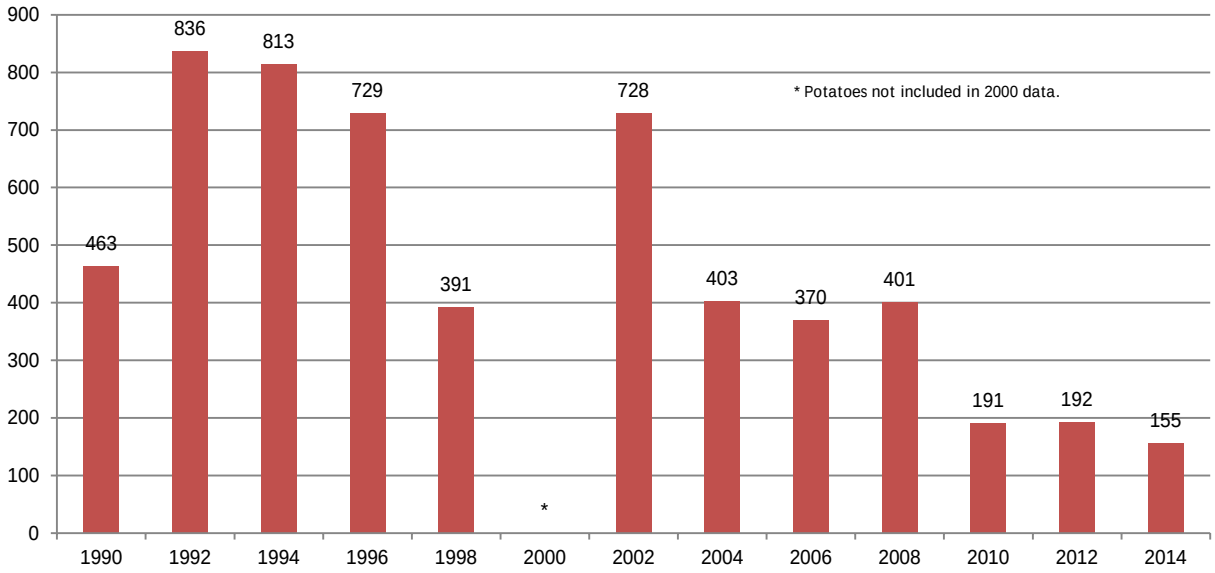


Figure 103: Regional distribution of early potato crops grown in Northern Ireland (ha), 2014.

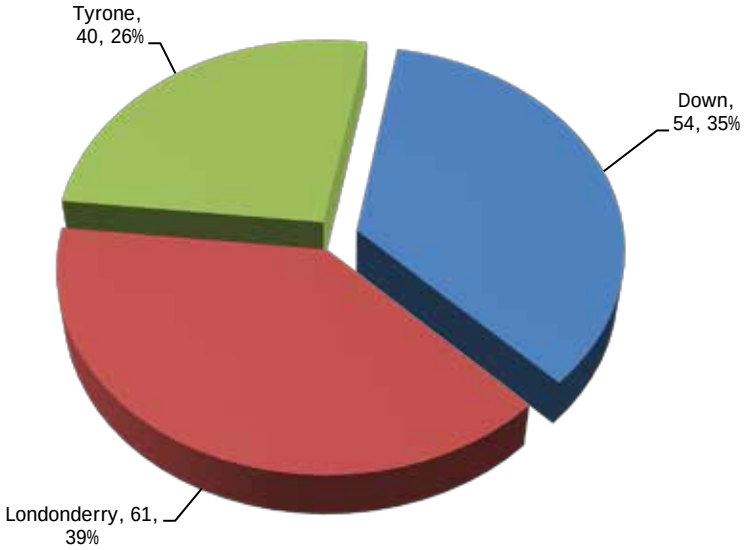


Figure 104: Pesticide usage (spha) on early potato crops in Northern Ireland, 2014.

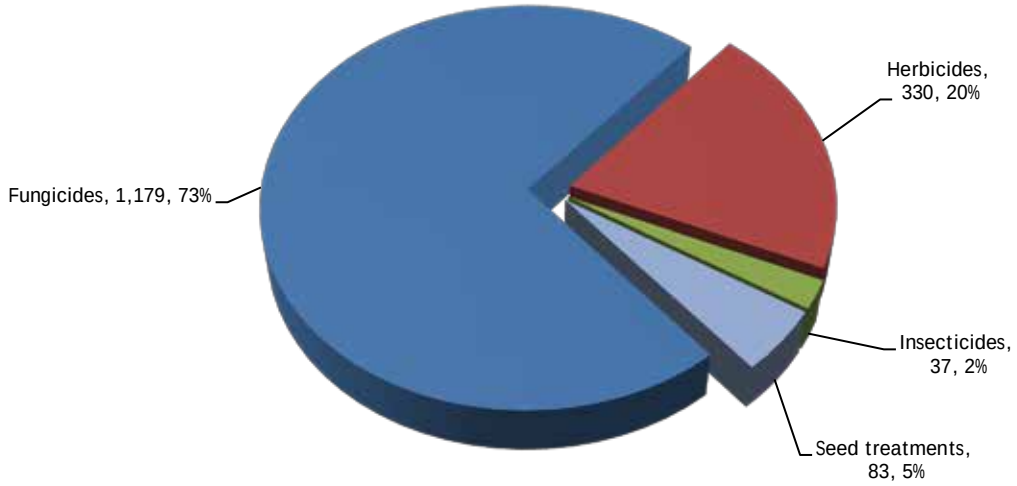


Figure 105: Weight of pesticides (kg) applied to early potato crops in Northern Ireland, 2014.

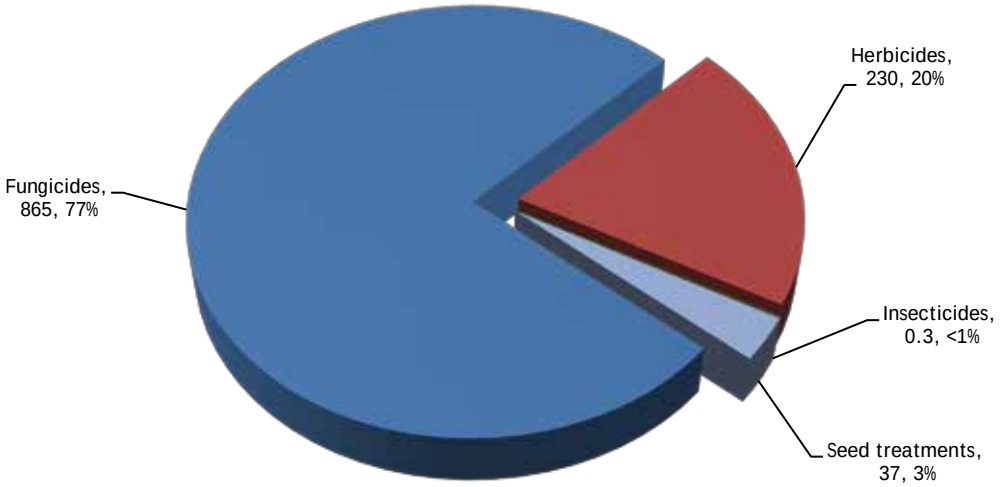
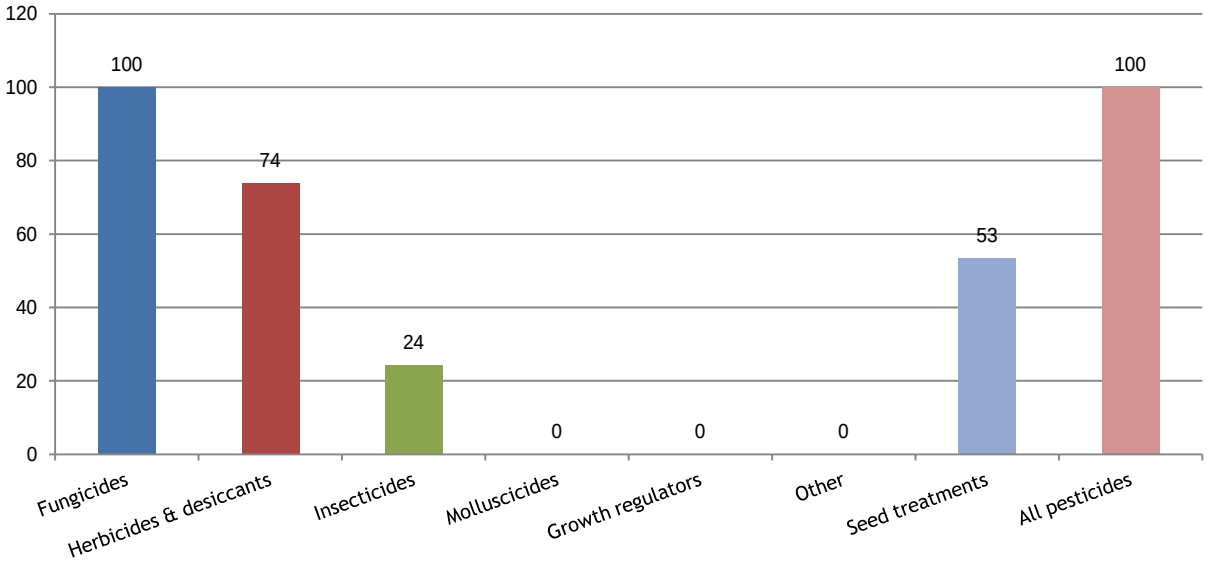


Figure 106: Proportional area (%) of early potato crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – early potatoes

· Basic area treated: 155 hectares

· Area treated: 1,179 spray hectares

· Weight of active substances applied: 865 kilogrammes

· 100% of the area grown treated with fungicides

· All fungicide applications were to control blight

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Fluazinam	403.54	102.9	78.59	34.23
Mancozeb	393.05	75.73	628.87	33.34
Cyazofamid	191.96	42.38	9.97	16.28
Fenamidone/propamocarb hydrochloride	100.2	25.05	90.18	8.50
Benthiavalicarb-isopropyl/mancozeb	42.38	42.38	45.61	3.59

Herbicides & desiccants – early potatoes

· Basic area treated: 114 hectares

· Area treated: 330 spray hectares

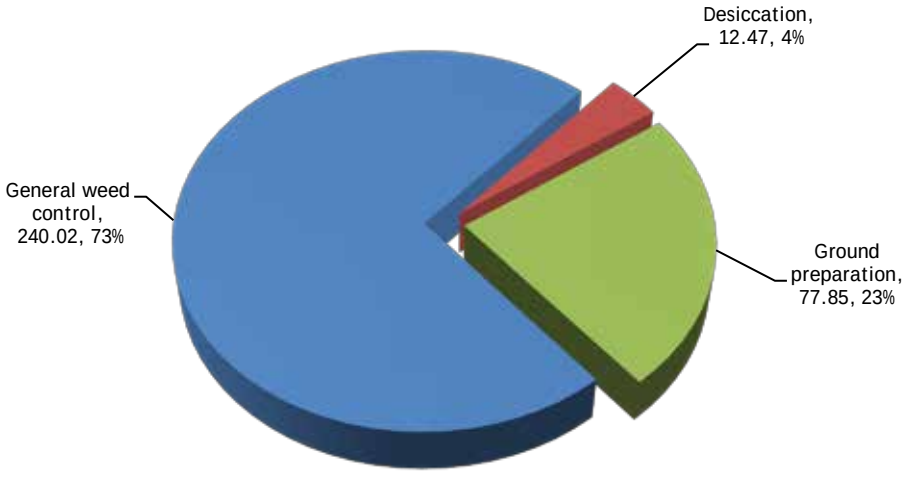
· Weight of active substances applied: 230 kilogrammes

· 74% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	102.9	102.9	63.37	31.15
Metribuzin	102.9	102.9	80.65	31.15
Diquat	89.26	89.26	37.98	27.02
Carfentrazone-ethyl	12.47	12.47	0.75	3.78
Linuron	11.41	11.41	10.27	3.45
Prosulfocarb	11.41	11.41	36.51	3.45

Figure 107: Early potatoes: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – early potatoes

· Basic area treated: 37 hectares

· Area treated: 37 spray hectares

· Weight of active substances applied: 0.3 kilogrammes

· 24% of the area grown treated with insecticides

· All applications were to control aphids

· The only active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	37.4	37.4	0.28	100

Seed treatments – early potatoes

· Area treated: 83 hectares

· Weight of active substances applied: 37 kilogrammes

· 53% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Imazalil/pencycuron	42.38	35.54	51.28
Imazalil	40.26	1.01	48.72

Pesticide usage on seed & maincrop potatoes:

· 3,610 hectares of seed & maincrop potatoes grown in Northern Ireland

· 52,784 treated hectares

· 30,123 kilogrammes applied

· 97% of the area of maincrop potatoes grown received a pesticide treatment

· Maincrop potatoes received on average 9.95 fungicide, 3.11 herbicide & desiccant, 1.38 insecticide, 1 molluscicide and 1.0 growth regulator applications

Figure 108: Comparison of the areas of seed & maincrop potato crops grown in Northern Ireland (ha), 1990 - 2014.

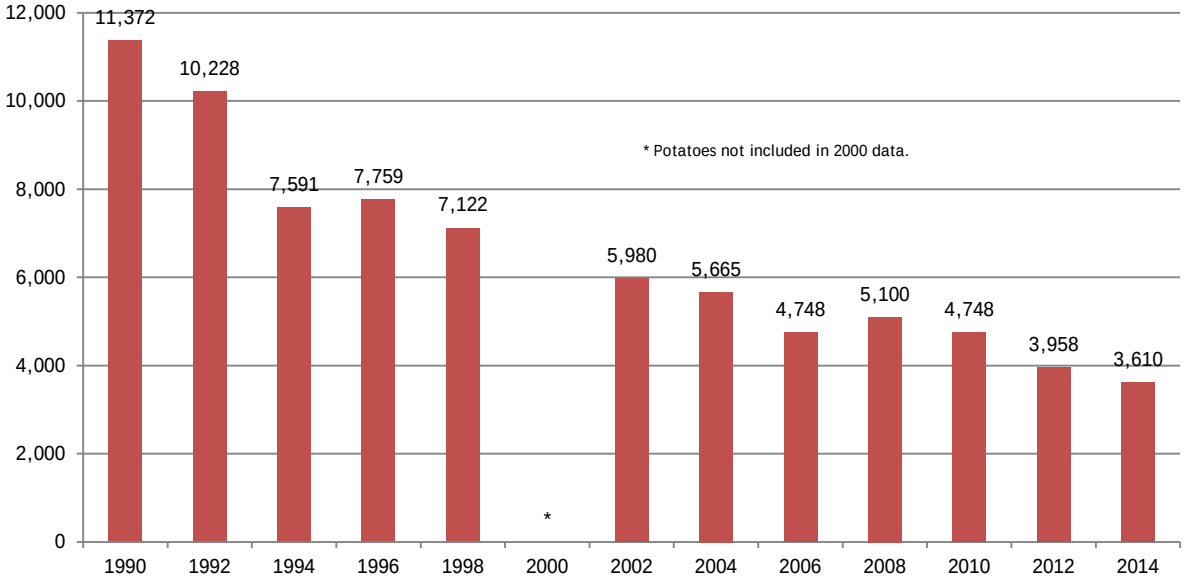


Figure 109: Regional distribution of seed & maincrop potato crops grown in Northern Ireland (ha), 2014.

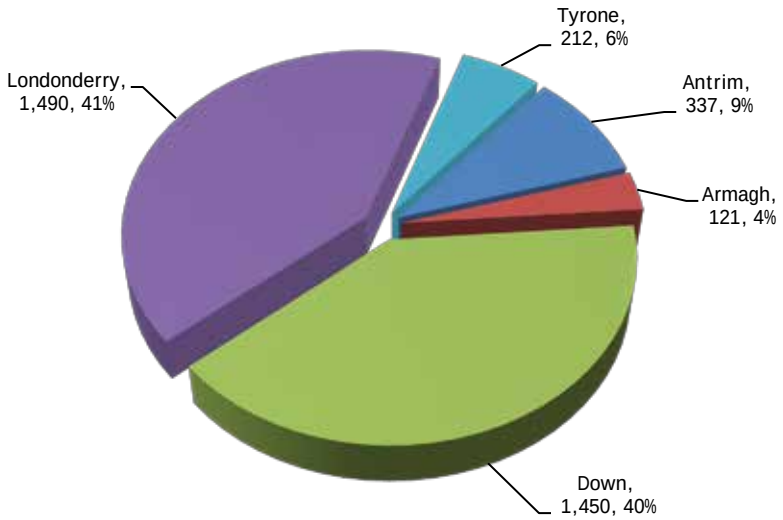


Figure 110: Pesticide usage (spha) on seed & maincrop potato crops in Northern Ireland, 2014.

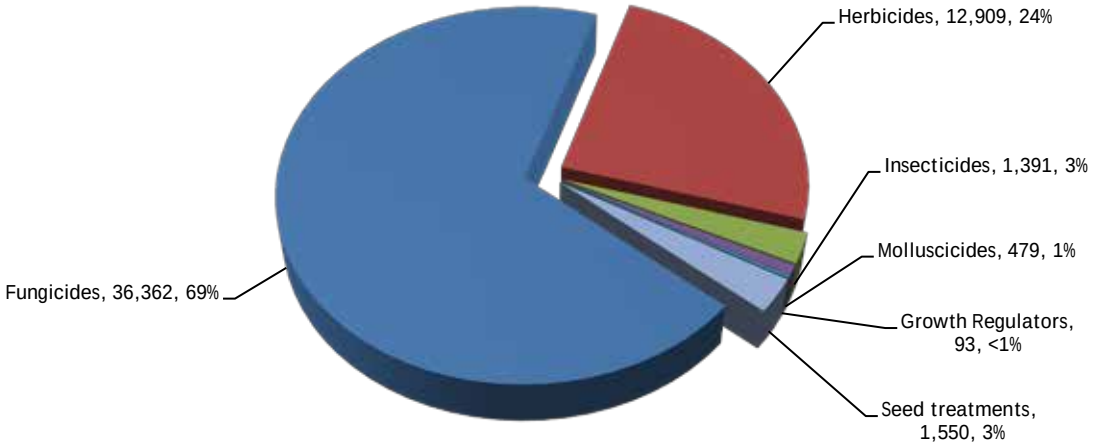


Figure 111: Weight of pesticides (kg) applied to seed & maincrop potato crops in Northern Ireland, 2014.

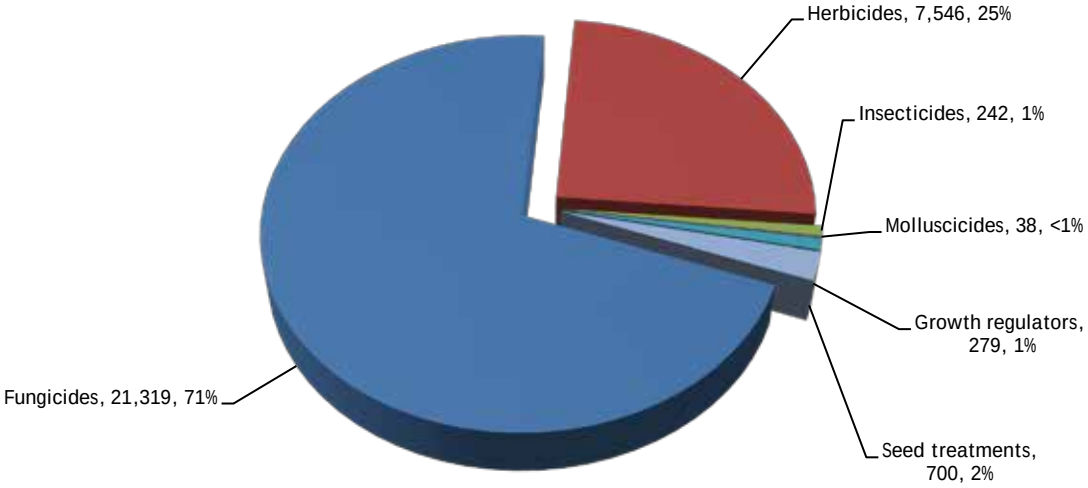
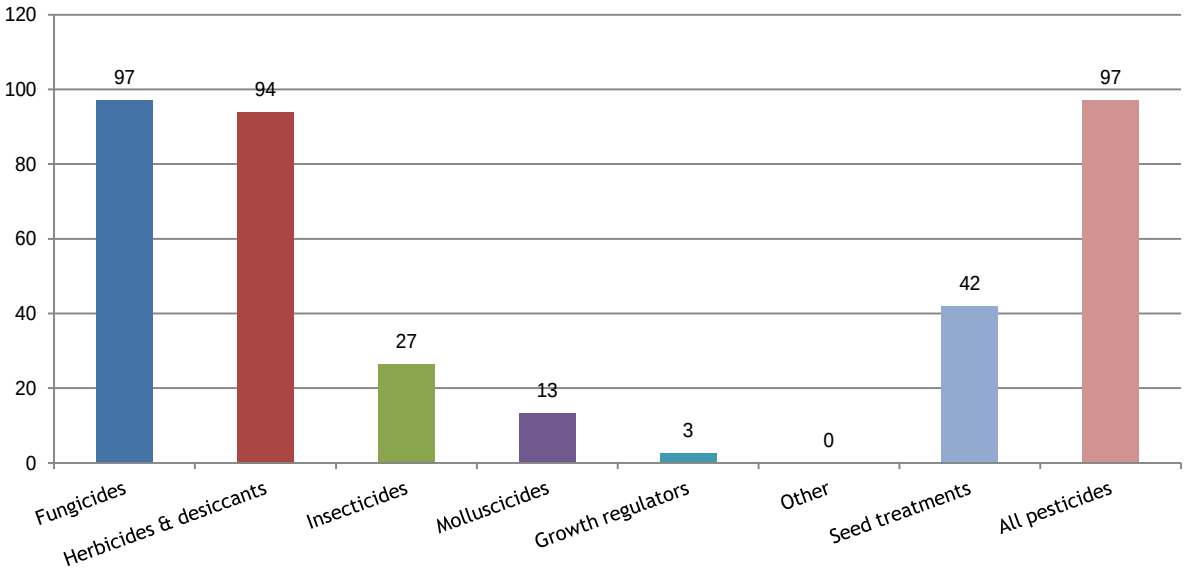


Figure 112: Proportional area (%) of seed & maincrop potato crops treated with each pesticide group in Northern Ireland, 2014.



Fungicides – seed & maincrop potatoes

· Basic area treated: 3,503 hectares

· Area treated: 36,362 spray hectares

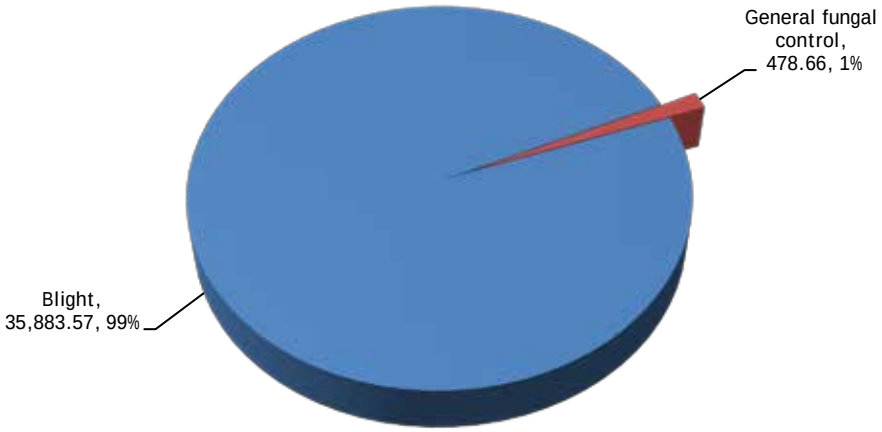
· Weight of active substances applied: 21,319 kilogrammes

· 97% of the area grown treated with fungicides

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Fluazinam	10,233.68	3,134.27	1,920.14	28.14
Mandipropamid	5,621.96	1,797.85	758.64	15.46
Cyazofamid	3,745.95	1,967.37	291.86	10.30
Cymoxanil/mancozeb	3,398.96	1,203.97	4,948.06	9.35
Fluopicolide/propamocarb hydrochloride	3,279.42	1,280.52	3,536.72	9.02

Figure 113: Maincrop potatoes: reasons for fungicide use (spha), 2014.



Herbicides & desiccants – seed & maincrop potatoes

· Basic area treated: 3,393 hectares

· Area treated: 12,909 spray hectares

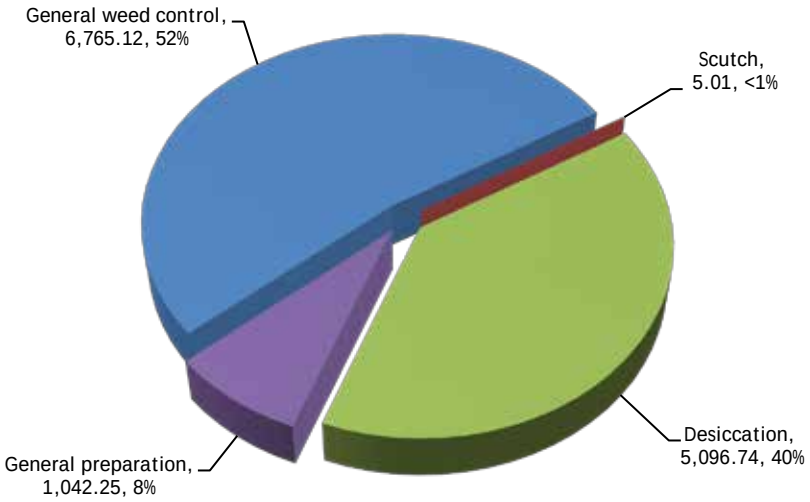
· Weight of active substances applied: 7,546 kilogrammes

· 94% of the area grown treated with herbicides & desiccants

· The most commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Diquat	5,935.50	3,244.24	2,302.77	45.98
Metribuzin	3,003.42	3,003.42	2,279.46	23.27
Glyphosate	1,847.39	1,806.86	1,308.95	14.31
Carfentrazone-ethyl	836.97	836.97	50.22	6.48
Prosulfocarb	611.55	611.55	1,290.22	4.74

Figure 114: Maincrop potatoes: reasons for herbicide & desiccant use (spha), 2014.



Insecticides – seed & maincrop potatoes

· Basic area treated: 959hectares

· Area treated: 1,391 spray hectares

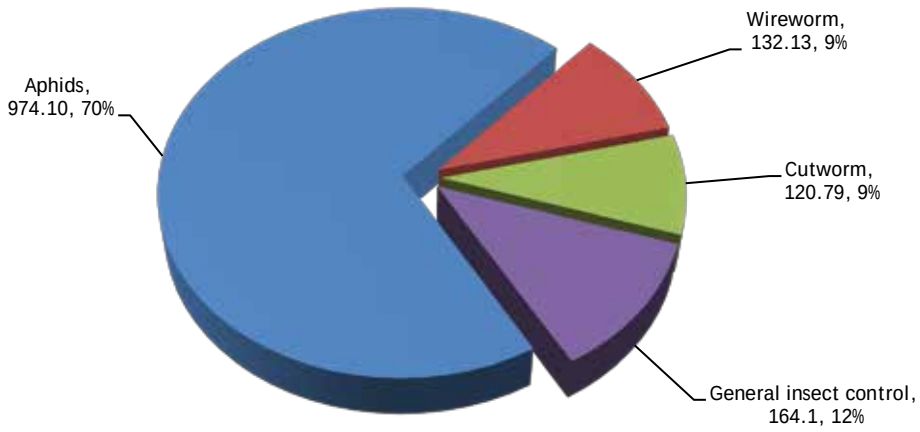
· Weight of active substances applied: 242 kilogrammes

· 27% of the area grown treated with insecticides

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	713.06	591.87	4.67	51.26
Esfenvalerate	323.79	195.45	1.30	23.28
Chlorpyrifos	252.92	252.92	227.63	18.18
Flonicamid	101.33	50.67	8.11	7.28

Figure 115: Maincrop potatoes: reasons for insecticide use (spha), 2014.



Molluscicides – seed & maincrop potatoes

· Basic area treated: 479 hectares

· Area treated: 479 spray hectares

· Weight of active substances applied: 38 kilogrammes

· 13% of the area grown treated with molluscicides

· All applications were to control slugs

· The active substances applied were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Methiocarb	478.66	478.66	38.29	100.0

Growth regulators – seed & maincrop potatoes

· Basic area treated: 93 hectares

· Area treated: 93 spray hectares

· Weight of active substances applied: 279 kilogrammes

· 3% of the area grown treated with growth regulators

· All applications were for growth regulation

· The only active substance applied was:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)	% of the treated area
Maleic hydrazide	93.04	93.04	279.12	100

Seed treatments – seed & maincrop potatoes

· Area treated: 1,519 hectares

· Weight of active substances applied: 700 kilogrammes

· 42% of the area grown was sown with treated seed

· The active substances applied were:

	Treated area (ha)	Quantity applied (kg)	% of the treated area
Imazalil/pencycuron	653.86	466.57	42.19
Imazalil	271.88	6.49	17.54
Pencycuron	239.25	156.53	15.44
Flutolanil	224.37	51.82	14.48
Imazalil/thiabendazole	160.33	18.11	10.35

Potato storage:

· 41,336 tonnes of potatoes stored.

· The majority are stored in Counties Down and Londonderry

· No stored potatoes are treated

Figure 116: Comparison of the quantities (t) of potatoes stored in Northern Ireland, 1990 - 2014.

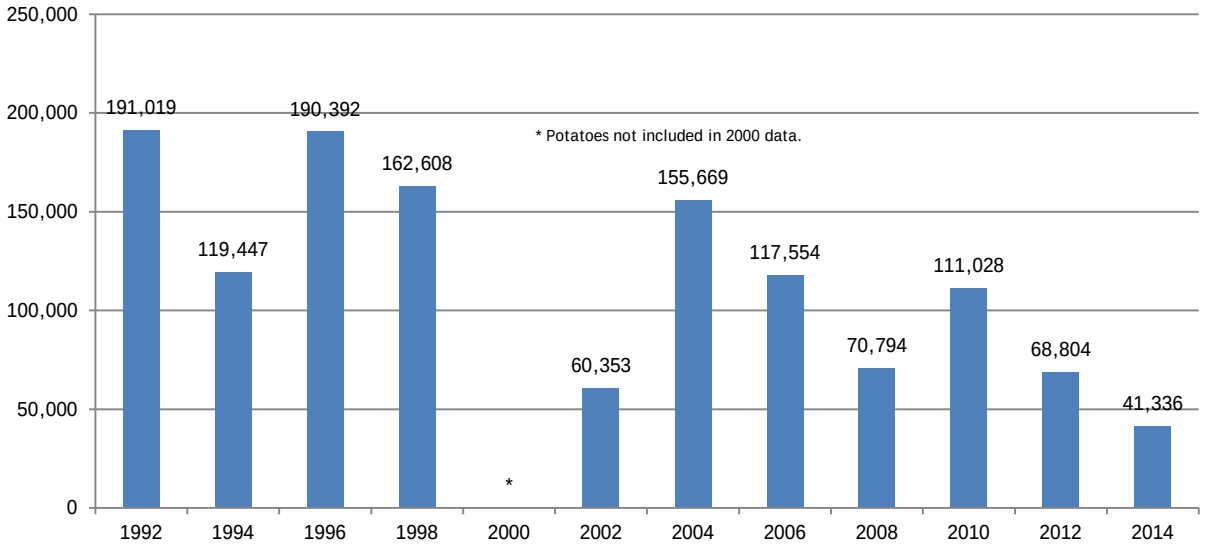


Figure 117: Potato storage: estimated quantity (t) of potatoes stored in each region in Northern Ireland, 2014

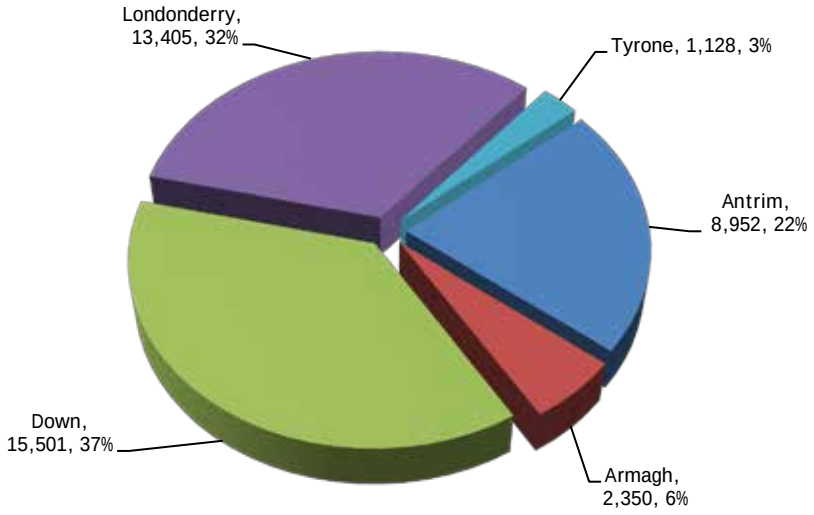


Figure 118: Potato storage: estimated quantity (t) of ware potatoes stored in each region in Northern Ireland, 2014

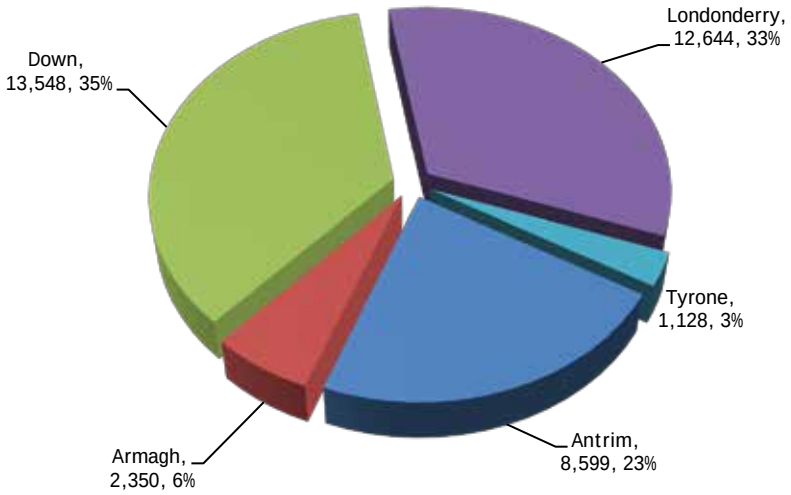


Figure 119: Potato storage: estimated quantity (t) of seed potatoes stored in each region in Northern Ireland, 2014

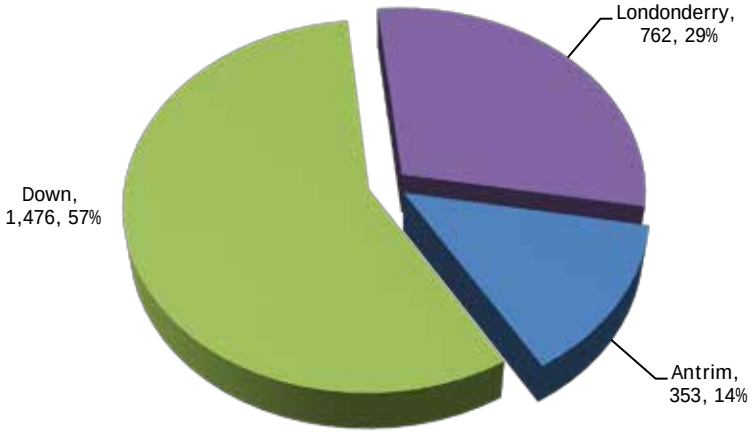


Figure 120: Potato storage: type of storage building used and quantities (t) of potatoes stored in Northern Ireland, 2014.

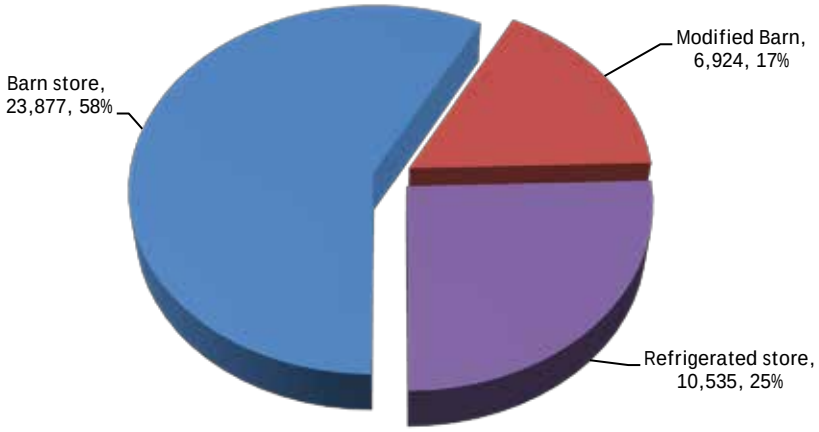


Figure 121: Potato storage: type of storage method used and quantities (t) of potatoes stored in Northern Ireland, 2014.

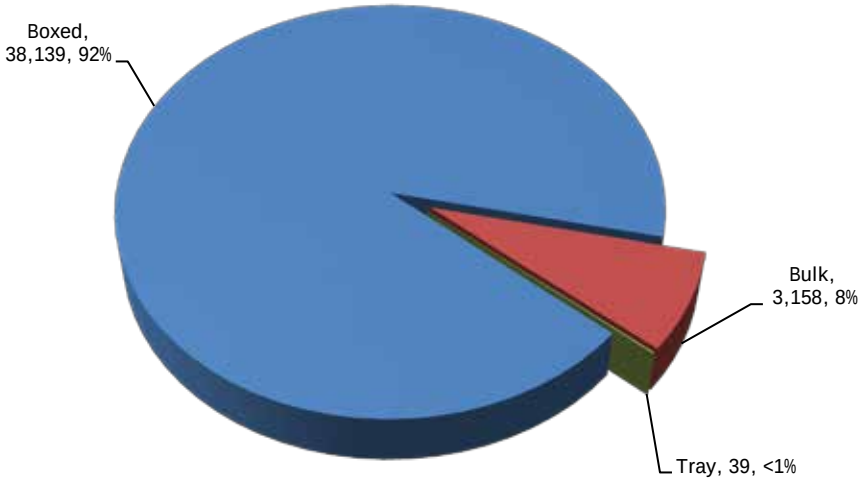


Table 1a: **Number of holdings in each size class with cereal crops in the Northern Ireland June 2014 census and the number of samples from each class.**

	Size group (hectares)													
	< 5		5< 10		10 < 20		20 < 50		50 < 100		100+		Total	
County	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled
Antrim	207	4	123	5	90	4	63	12	19	6	2	0	504	31
Armagh	71	0	56	3	40	4	19	2	7	2	3	1	196	12
Down	400	6	215	7	186	16	141	20	64	21	23	8	1029	78
Fermanagh	12	0	3	0	0	0	1	0	0	0	0	0	16	0
Londonderry	241	3	138	1	107	5	81	11	22	10	15	6	604	36
Tyrone	126	4	63	1	53	2	24	4	5	2	3	2	274	15
Northern Ireland	***1,057***	***17***	***598***	***17***	***476***	***31***	***329***	***49***	***117***	***41***	***46***	***17***	***2,623***	***172***

Table 1b: **Number of holdings in each size class with potato crops in the Northern Ireland June 2014 census and the number of samples from each class.**

	Size group (hectares)											
	< 2		2 < 5		5 < 10		10 < 20		20+		Total	
	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled	Holdings in size group	Holdings sampled
Northern Ireland	240	3	151	10	64	3	51	6	52	7	558	29

Table 2: **The total number and area (hectares) of crops sampled, and the proportion (%) of the total area of arable crops surveyed in Northern Ireland, 2014.**

Crop	Number of crops surveyed	Survey area (ha)	Proportion of crops surveyed
Spring barley	197	3001.2	18.3%
Undersown spring barley	6	21.7	5.1%
Winter barley	126	1861.9	27.8%
Spring wheat	14	166.1	27.5%
Winter wheat	99	1655.2	21.0%
Spring oats	20	235.5	17.6%
Undersown spring oats	2	2.4	2.5%
Winter oats	14	154.2	23.8%
Winter oilseed rape	6	101.4	23.8%
Spring oilseed rape	3	27.9	41.5%
Peas & beans	2	17.4	32.0%
Triticale	1	4.9	1.2%
Early potatoes	8	13.4	8.6%
Maincrop potatoes	50	461.2	12.8%
Total	***548***	***7724.4***	***19.9%***

Table 3: **Estimated area (hectares) of arable crops grown regionally in Northern Ireland 2014.**

	County					
Crop	**Antrim**	**Armagh**	**Down**	**Londonderry**	**Tyrone**	**Northern Ireland**
Spring barley	2,993	628	7,661	3,843	1,292	16,417
Undersown spring barley	169	.	56	205	.	430
Winter barley	1,179	327	2,651	2,014	537	6,709
Spring wheat	.	.	374	217	13	604
Winter wheat	871	1,274	3,739	1,549	461	7,894
Spring oats	51	511	525	176	77	1,341
Undersown spring oats	.	.	98	.	.	98
Winter oats	28	174	224	185	36	648
Winter oilseed rape	.	.	345	68	14	427
Spring oilseed rape	.	22	45	.	.	67
Peas & beans	10	.	44	.	.	54
Triticale	.	.	.	390	.	390
Early potatoes	.	.	54	61	40	155
Maincrop & seed potatoes	337	121	1,450	1,490	212	3,610
Total	***5,638***	***3,057***	***17,266***	***10,199***	***2,684***	***38,843***

Table 4a: **Estimated area (spray hectares) of arable crops treated regionally with each pesticide type in Northern Ireland 2014.**

	County					
Pesticide type	**Antrim**	**Armagh**	**Down**	**Londonderry**	**Tyrone**	**Northern Ireland**
Fungicides	13,387	11,732	63,565	43,185	8,836	140,704
Herbicides	14,719	8,025	46,391	29,619	6,617	105,371
Insecticides	3,195	1,708	11,523	5,396	1,866	23,689
Molluscicides	.	151	561	675	.	1,387
Growth Regulators	3,048	3,514	11,751	10,192	2,759	31,265
Other	.	.	345	274	14	633
Seed treatments	4,806	2,903	13,623	7,969	2,865	32,167
Total	***39,155***	***28,033***	***147,759***	***97,311***	***22,957***	***335,215***

Table 4b: **Estimated weight (kg) applied to arable crops regionally with each pesticide type in Northern Ireland 2014.**

	County					
Pesticide type	**Antrim**	**Armagh**	**Down**	**Londonderry**	**Tyrone**	**Northern Ireland**
Fungicides	6,403	3,977	23,939	14,969	3,907	53,195
Herbicides	6,435	3,209	21,642	11,264	3,142	45,693
Insecticides	324	166	364	602	633	2,088
Molluscicides	.	12	54	68	.	134
Growth Regulators	1,582	1,237	6,678	4,290	971	14,758
Other	.	.	291	45	15	351
Seed treatments	250	182	900	580	106	2,018
Total	***14,994***	***8,783***	***53,867***	***31,818***	***8,774***	***118,237***

Table 5: **The total area spray hectares and the basic area (hectares), (in parentheses), of arable crops treated with each pesticide type, in Northern Ireland 2014.**

	Pesticide type															
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Growth Regulators		Other		Seed treatments		All pesticides	
Crop	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**	**Sp ha**	**(ha)**
Spring barley	35,801	(14,651)	46,032	(16,125)	10,387	(8,433)	70	(70)	12,037	(8,587)	.	.	12,828	(12,727)	117,154	(16,303)
Undersown spring barley	373	(225)	583	(417)	148	(148)	.	.	.	.	.	.	239	(239)	1,342	(430)
Winter barley	19,573	(5,803)	17,319	(6,500)	4,166	(2,769)	4	(4)	6,636	(4,731)	74	(074)	6,376	(6,167)	54,149	(6,709)
Spring wheat	1,366	(416)	1,604	(565)	256	(218)	.	.	580	(372)	.	.	529	(529)	4,336	(604)
Winter wheat	40,435	(7,713)	20,292	(7853)	6,484	(4,555)	367	(367)	9,415	(6,105)	88	(088)	8,772	(7576)	85,853	(7894)
Spring oats	1,986	(891)	3,444	(1,341)	393	(393)	.	.	1,529	(992)	.	.	1,028	(1,028)	8,379	(1,341)
Undersown spring oats	98	(098)	98	(098)	.	.	.	.	98	(098)	.	.	49	(049)	342	(098)
Winter oats	2,154	(581)	1,434	(613)	289	(289)	.	.	878	(481)	.	.	648	(648)	5,403	(648)
Winter oilseed rape	1,222	(427)	1,003	(427)	93	(093)	467	(256)	.	.	471	(427)	44	(044)	3,300	(427)
Spring oilseed rape	23	(023)	224	(067)	.	.	.	.	.	.	.	.	22	(022)	269	(067)
Peas & beans	133	(44)	99	(054)	44	(044)	.	.	.	.	.	.	.	.	276	(054)
Early potatoes	1,179	(155)	330	(114)	37	(037)	.	.	.	.	.	.	83	(083)	1,629	(155)
Maincrop & seed potatoes	36,362	(3,503)	12,909	(3393)	1,391	(959)	479	(479)	93	(093)	.	.	1,550	(1,519)	52,784	(3503)
Total	***140,704***	***(34,530)***	***105,371***	***(37,568)***	***23,689***	***(17,937)***	***1,387***	***(1,176)***	***31,265***	***(21,458)***	***633***	***(588)***	***32,167***	***(30,629)***	***335,215***	***(38,231)***

Table 6: **Total quantity (kilograms) of each pesticide type used on arable crops in Northern Ireland 2014.**

Crop	Fungicides	Herbicides & desiccants	Insecticides	Molluscicides	Growth Regulators	Other	Seed treatments	Total
Spring barley	11,043	16,349	1,368	10	4,296	.	297	33,363
Undersown spring barley	110	141	0.4	.	.	.	7	259
Winter barley	6,314	9,477	220	1	3,207	2	373	19,593
Spring wheat	338	740	18	.	242	.	9	1,345
Winter wheat	11,837	8,234	227	41	5,475	2	532	26,348
Spring oats	501	1,291	2	.	567	.	18	2,379
Undersown spring oats	59	0.4	.	.	165	.	0.4	224
Winter oats	638	474	10	.	529	.	44	1,695
Winter oilseed rape	142	1,002	1	45	.	347	0.4	1,536
Spring oilseed rape	4	131	.	.	.	.	0.3	136
Peas & beans	25	78	0.3	.	.	.	.	103
Early potatoes	865	230	0.3	.	.	.	37	1,132
Maincrop & seed potatoes	21,319	7,546	242	38	279	.	700	30,123
Total	*53,195*	*45,693*	*2,088*	*134*	*14,758*	*351*	*2,018*	*118,237*

Table 7: **The proportional area (%) of each crop treated with pesticides and the mean number of spray applications (in parentheses) in Northern Ireland, 2014.**

Crop	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Growth Regulators		Other		Seed treatments	All pesticides	
	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	%	sp apps
Spring barley	89	(2.16)	98	(2.62)	51	(1.28)	0.43	(1.00)	52	(1.27)	.	.	78	99	(1.78)
Undersown spring barley	52	(1.77)	97	(1.39)	34	(1.00)	.	.	.	.	.	.	56	100	(1.30)
Winter barley	86	(2.97)	97	(2.70)	41	(1.54)	0.06	(1.00)	71	(1.23)	1.10	(1.00)	92	100	(1.95)
Spring wheat	69	(3.47)	94	(3.01)	36	(1.25)	.	.	62	(1.48)	.	.	88	100	(2.16)
Winter wheat	98	(4.83)	99	(2.40)	58	(1.35)	5	(1.00)	77	(1.62)	1.11	(1.00)	96	100	(2.37)
Spring oats	66	(1.53)	100	(2.52)	29	(1.00)	.	.	74	(1.15)	.	.	77	100	(1.60)
Undersown spring oats	100	(1.00)	100	(1.00)	.	.	.	.	100	(1.00)	.	.	50	100	(1.00)
Winter oats	90	(3.05)	95	(2.22)	45	(1.00)		.	74	(1.77)	.	.	100	100	(1.88)
Winter oilseed rape	100	(2.89)	100	(2.15)	22	(1.00)	60	(1.92)	.	.	100	(1.05)	10	100	(1.94)
Spring oilseed rape	34	(1.00)	100	(3.39)	.	.	.	.	.	.	.	.	33	100	(2.41)
Peas & beans	82	(3.00)	100	(1.47)	82	(1.00)	.	.	.	.	.	.	.	100	(1.72)
Triticale	.	.	.	.	.	.	.	.	.		.	.	.	.	(.)
Early potatoes	100	(7.35)	74	(2.83)	24	(1.00)	.	.	.	.	.	.	53	100	(4.27)
Maincrop potatoes	97	(9.95)	94	(3.11)	27	(1.38)	13	(1.00)	3	(1.00)	.	.	42	97	(5.01)
Total	***90***	***(4.27)***	***97***	***(2.63)***	***46***	***(1.34)***	***3***	***(1.35)***	***56***	***(1.31)***	***1.5***	***(1.04)***	***80***	***99***	***(2.33)***

Table 8 Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Fungicides														
Ametoctradin/Dimethomorph	.	.	.	.	.	.	.	.	.	.	.	22.82	1,857.17	1,879.98
Azoxystrobin	.	.	8.26	.	902.68	.	.	.	358.71	.	44.40	.	478.66	1,792.71
Azoxystrobin/chlorothalonil	92.88	.	132.98	.	87.77	.	.	.	.	.	.	.	.	313.62
Benthiavalicarb-isopropyl/mancozeb	.	.	.	.	.	.	.	.	.	.	.	42.38	1,482.48	1,524.87
Bixafen/Fluoxastrobin/Prothioconazole	.	.	.	.	1,484.89	.	.	.	.	.	.	.	.	1,484.89
Bixafen/Prothioconazole	1,555.42	.	1,930.16	34.19	1,716.94	.	.	.	.	.	.	.	.	5,236.71
Bixafen/Prothioconazole/Spiroxamine	101.05	.	.	.	224.10	.	.	.	.	.	.	.	.	325.15
Boscalid/Epoxiconazole	446.72	.	92.74	110.99	1,810.38	52.95	.	119.15	.	.	.	.	.	2,632.94
Carbendazim/flusilazole	1,064.94	.	332.55	.	.	.	.	.	.	.	.	.	.	1,397.49
Chlorothalonil	5,955.81	147.89	4,969.44	248.44	9,656.03	.	.	310.57	.	.	.	.	.	21,288.17
Chlorothalonil/cyproconazole	624.25	.	243.70	.	39.05	.	.	.	.	.	.	.	.	907.01
Chlorothalonil/cyproconazole/propiconazole	577.72	.	210.91	49.37	423.35	.	.	.	.	.	.	.	.	1,261.34
Chlorothalonil/Penthiopyrad	1,261.67	.	545.39	.	2,471.67	.	.	.	.	.	.	.	.	4,278.74
Chlorothalonil/picoxystrobin	399.46	.	.	.	.	.	.	.	.	.	.	.	.	399.46
Chlorothalonil/propiconazole	13.69	.	9.93	.	.	.	.	.	.	.	.	.	.	23.61
Chlorothalonil/Proquinazid	1,126.18	.	406.19	.	.	.	.	.	.	.	.	.	.	1,532.37
Chlorothalonil/Tebuconazole	.	.	.	.	351.33	.	.	.	.	.	.	.	.	351.33
Cyazofamid	.	.	.	.	.	.	.	.	.	.	.	191.96	3,745.95	3,937.91
Cymoxanil	.	.	.	.	.	.	.	.	.	.	.	.	522.12	522.12
Cymoxanil/mancozeb	.	.	.	.	.	.	.	.	.	.	.	.	3,398.96	3,398.96
Cyproconazole	.	.	.	.	100.16	.	.	.	.	.	.	.	.	100.16
Cyproconazole/propiconazole	92.88	.	.	.	.	.	.	.	.	.	.	.	.	92.88
Cyprodinil	1,872.08	21.43	376.25	.	46.62	.	.	.	.	.	.	.	.	2,316.37
Cyprodinil/isopyrazam	1,723.65	.	840.39	.	38.67	.	.	.	.	.	.	.	.	2,602.71
Cyprodinil/picoxystrobin	145.50	.	322.10	.	.	.	.	.	.	.	.	.	.	467.60
Dimethomorph/mancozeb	.	.	.	.	.	.	.	.	.	.	.	.	2,449.62	2,449.62
Epoxiconazole	460.52	.	381.40	198.40	2,135.75	52.95	.	175.63	.	.	.	.	.	3,404.65
Epoxiconazole/fenpropimorph	395.13	.	87.12	.	383.86	35.50	.	.	.	.	.	.	.	901.61

Table 8 cont. **Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.**

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Fungicides														
Epoxiconazole/fenpropimorph/kresoxim-methyl	794.17	147.89	.	.	127.43	184.51	.	54.81	.	.	.	.	.	1,308.80
Epoxiconazole/fenpropimorph/metrafenone	34.84	12.44	37.22	150.62	84.20	81.26	.	409.19	.	.	.	.	.	809.77
Epoxiconazole/Fluxapyroxad	.	.	.	.	500.93	.	.	.	.	.	.	.	.	500.93
Epoxiconazole/Fluxapyroxad/Pyraclostrobin	223.16	.	241.37	31.91	183.25	.	.	.	.	.	.	.	.	679.69
Epoxiconazole/Isopyrazam	.	.	.	.	542.48	.	.	.	.	.	.	.	.	542.48
Epoxiconazole/metconazole	204.69	.	.	70.98	4,158.25	23.70	.	.	.	.	.	.	.	4,457.62
Epoxiconazole/prochloraz	769.84	.	555.63	.	1,057.73	.	.	.	.	.	.	.	.	2,383.20
Fenamidone/propamocarb hydrochloride	.	.	.	.	.	.	.	.	.	.	.	100.20	2,755.18	2,855.37
Fenpropidin	.	.	.	49.37	.	.	.	.	.	.	.	.	.	49.37
Fenpropimorph	1,940.65	.	424.10	.	158.94	456.44	97.59	524.40	.	.	.	.	.	3,602.12
Fenpropimorph/flusilazole	1,122.72	.	810.54	.	242.77	.	.	.	.	.	.	.	.	2,176.04
Fenpropimorph/pyraclostrobin	.	.	.	.	.	324.84	.	54.81	.	.	.	.	.	379.65
Fluazinam	.	.	.	.	.	.	.	.	.	.	.	403.54	10,233.68	10,637.23
Fluopicolide/propamocarb hydrochloride	.	.	.	.	.	.	.	.	.	.	.	.	3,279.42	3,279.42
Fluoxastrobin/prothioconazole	2,252.92	43.17	1,441.25	.	232.72	.	.	43.94	13.92	.	.	.	.	4,027.92
Fluoxastrobin/prothioconazole/trifloxystrobin	513.38	.	421.49	.	.	.	.	.	.	.	.	.	.	934.87
Fluxapyroxad	464.86	.	.	.	344.27	.	.	.	.	.	.	.	.	809.13
Folpet	1,084.22	.	268.13	60.68	206.76	.	.	.	.	.	.	.	.	1,619.80
Isopyrazam	144.83	.	10.18	.	.	.	.	.	.	.	.	.	.	155.01
Mancozeb	.	.	.	.	.	.	.	.	.	.	.	393.05	317.12	710.17
Mancozeb/zoxamide	.	.	.	.	.	.	.	.	.	.	.	.	219.92	219.92
Mandipropamid	.	.	.	.	.	.	.	.	.	.	.	25.05	5,621.96	5,647.01
Metrafenone	.	.	.	.	.	23.70	.	.	.	.	.	.	.	23.70
Penthiopyrad	74.65	.	488.26	31.30	1,351.82	.	.	.	.	.	.	.	.	1,946.04
Picoxystrobin	155.95	.	.	.	.	.	.	.	.	.	.	.	.	155.95
Prochloraz/tebuconazole	.	.	41.35	.	426.52	.	.	.	.	.	.	.	.	467.88
Proquinazid	102.06	.	298.07	110.99	631.27	156.68	.	68.58	.	.	.	.	.	1,367.65
Prothioconazole	2,775.02	.	1,370.92	.	1,740.79	53.98	.	.	651.95	.	.	.	.	6,592.66
Prothioconazole/Spiroxamine	359.53	.	66.74	.	.	.	.	.	.	.	.	.	.	426.28
Prothioconazole/tebuconazole	1,244.90	.	409.64	171.67	3,337.48	237.46	.	119.15	23.46	.	.	.	.	5,543.76

Table 8 cont. Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Fungicides														
Prothioconazole/trifloxystrobin	2,169.44	.	1,119.27	.	670.40	.	.	.	.	.	.	.	.	3,959.12
Pyraclostrobin	977.60	.	129.03	47.36	1,284.64	110.81	.	136.36	.	.	.	.	.	2,685.79
Spiroxamine/tebuconazole	277.86	.	409.89	.	67.65	.	.	.	.	.	.	.	.	755.40
Sulphur	124.42	.	.	.	.	.	.	.	.	.	.	.	.	124.42
Tebuconazole	79.30	.	140.58	.	1211.31	190.84	.	137.15	174.00	22.88	88.80	.	.	2044.87
All fungicides	***35,800.56***	***372.82***	***19,573.18***	***1,366.25***	***40,434.86***	***1,985.64***	***97.59***	***2,153.73***	***1,222.04***	***22.88***	***133.20***	***1,179.00***	***36,362.23***	***140,703.98***

Table 8 cont. **Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.**

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Herbicides & desiccants														
2,4-D	89.81	.	.	39.07	.	.	.	.	.	.	.	.	.	128.88
2,4-DB	202.50	147.89	.	.	.	.	.	.	.	.	.	.	.	350.39
Amidosulfuron/iodosulfron-methyl-sodium	271.61	.	.	.	.	.	.	.	.	.	.	.	.	271.61
Bentazone	.	.	.	.	.	.	.	.	.	.	44.40	.	.	44.40
Bromoxynil/ioxynil	690.45	.	.	.	40.59	.	.	.	.	.	.	.	.	731.04
Carfentrazone-ethyl	.	.	.	.	.	.	.	.	.	.	.	12.47	836.97	849.43
Carfentrazone-ethyl/flupyrsulfron-methyl	.	.	.	.	.	.	.	245.50	.	.	.	.	.	245.50
Chlorotoluron	.	.	145.70	.	.	.	.	.	.	.	.	.	.	145.70
Chlorotoluron/diflufenican	974.91	.	688.96	13.32	328.53	.	.	.	.	.	.	.	.	2,005.72
Clomazone	.	.	.	.	.	.	.	.	.	21.90	.	.	.	21.90
Clopyralid	.	.	.	18.94	.	.	.	.	.	.	.	.	.	18.94
Clopyralid/picloram	.	.	.	.	.	.	.	.	13.92	22.88	.	.	.	36.80
Cloquintocet-mexyl/Pinoxaden	350.12	.	13.30	.	.	.	.	.	.	.	.	.	.	363.42
Dicamba/MCPA/mecoprop-P	218.41	43.17	30.14	.	.	.	.	.	.	.	.	.	.	291.73
Dicamba/mecoprop-P	877.75	.	199.12	.	93.90	.	.	16.14	.	.	.	.	.	1,186.90
Diflufenican	560.30	.	2,445.97	55.50	1,325.96	140.07	.	.	.	.	.	.	.	4,527.78
Diflufenican/flufenacet	820.63	.	1,429.11	104.87	1,138.11	.	.	35.74	.	.	.	.	.	3,528.46
Diflufenican/iodosulfron-methyl-sodium/mesosulfuron-methyl	.	.	44.01	.	3,521.61	.	.	.	.	.	.	.	.	3,565.61
Diflufenican/isoproturon	28.58	.	.	.	.	.	.	.	.	.	.	.	.	28.58
Diquat	.	.	.	.	.	.	.	.	.	22.88	.	89.26	5,935.50	6,047.64
Florasulam/fluroxypyr	1,716.18	17.83	465.09	18.94	887.55	112.00	.	98.38	.	.	.	.	.	3,315.97
Florasulam/Pyroxsulam	.	.	.	.	285.92	.	.	.	.	.	.	.	.	285.92
Flufenacet/pendimethalin	203.46	.	2,463.46	.	1,224.51	.	.	.	.	.	.	.	.	3,891.44
Flumioxazine	.	.	.	.	.	.	.	68.58	.	.	.	.	.	68.58
Flupyrsulfuron-methyl/Thifensulfuron-methyl	.	.	.	.	.	.	.	119.15	.	.	.	.	.	119.15
Fluroxypyr	6,717.61	.	1,263.07	275.21	2,255.75	761.50	.	24.21	.	.	.	.	.	11,297.34
Glyphosate	10,525.00	.	4,560.37	566.15	4,795.53	882.54	.	365.83	426.63	67.27	9.91	102.90	1,847.39	24,149.52
Iodosulfron-methyl-sodium	1,537.32	.	45.43	.	5.41	.	.	.	.	.	.	.	.	1,588.16
iodosulfron-methyl-sodium/mesosulfuron-methyl	.	.	.	.	202.93	.	.	.	.	.	.	.	.	202.93
Isoproturon	.	.	47.49	.	53.97	.	.	.	.	.	.	.	.	101.46

Table 8 cont. **Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.**

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Herbicides & desiccants														
Isoproturon/pendimethalin	.	.	39.97	.	65.39	.	.	.	.	.	.	.	.	105.35
Linuron	.	.	.	.	.	.	.	.	.	.	.	11.41	537.17	548.58
MCPA	446.64	.	5.74	.	.	60.37	.	.	.	.	.	.	.	512.75
Mecoprop-P	4,288.62	.	424.71	169.21	883.54	338.21	.	178.90	.	.	.	.	.	6,283.19
Metazachlor	.	.	.	.	.	.	.	.	78.25	67.27	.	.	.	145.52
Metribuzin	.	.	.	.	.	.	.	.	.	.	.	102.90	3,003.42	3,106.32
Metsulfuron-methyl	3,643.83	.	566.98	107.22	277.14	344.21	.	29.05	.	.	.	.	.	4,968.42
Metsulfuron-methyl/Thifensulfuron-methyl	2,213.55	17.83	149.60	34.19	208.86	.	.	133.71	.	.	.	.	.	2,757.74
Metsulfuron-methyl/tribenuron-methyl	4,393.18	.	367.73	70.37	.	567.29	.	.	.	.	.	.	.	5,398.57
Pendimethalin	484.70	.	71.19	.	235.62	.	.	.	.	.	44.40	.	.	835.92
Pendimethalin/picolinafen	252.91	.	410.42	.	126.37	.	.	.	.	.	.	.	.	789.70
Pinoxaden	2,642.02	.	789.65	47.36	1,255.91	.	.	.	.	.	.	.	.	4,734.94
Propaquizafop	.	.	.	.	.	.	.	.	101.72	.	.	.	5.01	106.73
Propyzamide	.	.	.	.	.	.	.	.	382.18	.	.	.	.	382.18
Prosulfocarb	.	.	228.21	.	379.82	.	.	.	.	.	.	11.41	611.55	1,230.99
Pyroxsulam	218.41	.	.	.	.	.	.	.	.	.	.	.	.	218.41
Rimsulfuron	.	.	.	.	.	.	.	.	.	.	.	.	132.10	132.10
Thifensulfuron-methyl/tribenuron-methyl	1,461.03	.	376.48	83.91	698.69	237.46	.	119.15	.	.	.	.	.	2,976.72
Tribenuron-methyl	202.50	356.25	.	.	.	.	97.59	.	.	.	.	.	.	656.34
Trifluralin	.	.	47.49	.	.	.	.	.	.	.	.	.	.	47.49
Unknown herbicide	.	.	.	.	.	.	.	.	.	21.90	.	.	.	21.90
All herbicides & desiccants	***46,032.03***	***582.97***	***17,319.38***	***1,604.24***	***20,291.61***	***3,443.65***	***97.59***	***1,434.34***	***1,002.69***	***224.11***	***98.71***	***330.33***	***12,909.11***	***105,370.76***

Table 8 cont. **Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.**

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Insecticides														
Alpha-cypermethrin	.	.	.	.	426.52	.	.	.	.	.	.	.	.	426.52
Chlorpyrifos	1,775.15	.	208.99	22.99	185.45	.	.	.	.	.	.	.	252.92	2,445.49
Cypermethrin	.	.	236.76	.	19.98	18.27	.	.	.	.	.	.	.	275.00
Deltamethrin	31.43	.	20.90	.	320.10	80.03	.	.	.	.	.	.	.	452.46
Dimethoate	28.58	.	.	.	262.07	.	.	.	.	.	.	.	.	290.64
Esfenvalerate	6,399.26	147.89	2,156.22	95.12	2,828.53	130.67	.	.	.	.	.	.	323.79	12,081.47
Flonicamid	.	.	.	.	.	.	.	.	.	.	.	.	101.33	101.33
Lambda-cyhalothrin	2,152.34	.	1,472.15	138.00	2,441.54	163.77	.	220.67	92.52	.	44.40	37.40	713.06	7,475.83
Pirimicarb	.	.	71.19	.	.	.	.	68.58	.	.	.	.	.	139.77
All insecticides	***10,386.76***	***147.89***	***4,166.20***	***256.10***	***6,484.19***	***392.73***	***.***	***289.25***	***92.52***	***.***	***44.40***	***37.40***	***1,391.10***	***23,688.53***
Molluscicides														
Methiocarb	70.11	.	4.19	.	367.22	.	.	.	467.26	.	.	.	478.66	1,387.44
All molluscicides	***70.11***	***.***	***4.19***	***.***	***367.22***	***.***	***.***	***.***	***467.26***	***.***	***.***	***.***	***478.66***	***1,387.44***
Growth regulators														
2-chloroethylphosphonic acid	1,448.15	.	1,131.06	49.37	399.26	18.27	.	.	.	.	.	.	.	3,046.11
Chlormequat	5,311.90	.	2,923.99	152.52	5,008.03	550.16	97.59	556.33	.	.	.	.	.	14,600.52
Chlormequat with choline chloride	.	.	.	150.62	208.06	.	.	.	.	.	.	.	.	358.67
Chlormequat/Imazaquin	.	.	.	.	637.25	.	.	.	.	.	.	.	.	637.25
Ethephon	.	.	.	.	.	18.27	.	.	.	.	.	.	.	18.27
Maleic hydrazide	.	.	.	.	.	.	.	.	.	.	.	.	93.04	93.04
Mepiquat chloride/Prohexadione-calcium	233.05	.	216.23	55.50	.	184.51	.	228.76	.	.	.	.	.	918.05
Trinexapac-ethyl	5,043.56	.	2,364.74	172.35	3,162.35	757.78	.	92.78	.	.	.	.	.	11,593.56
All growth regulators	***12,036.66***	***.***	***6,636.02***	***580.36***	***9,414.94***	***1,528.99***	***97.59***	***877.88***	***.***	***.***	***.***	***.***	***93.04***	***31,265.47***

Table 8 cont. **Estimated area (spray hectares) of arable crops treated with pesticide formulations in Northern Ireland in 2014.**

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Other														
Calcium chloride	.	.	73.77	.	87.77	.	.	.	44.45	.	.	.	.	205.99
Carboxylated styrene-butadiene	.	.	.	.	.	.	.	.	44.45	.	.	.	.	44.45
Synthetic latex	.	.	.	.	.	.	.	.	382.18	.	.	.	.	382.18
All other	***.***	***.***	***73.77***	***.***	***87.77***	***.***	***.***	***.***	***471.08***	***.***	***.***	***.***	***.***	***632.62***
Seed treatments														
Carboxin/thiram	133.16	.	.	.	.	.	.	.	.	.	.	.	.	133.16
Clothianidin/prothioconazole	515.31	.	2,964.14	.	3,410.24	.	.	393.72	.	.	.	.	.	7,283.41
Fludioxonil	6,302.33	33.87	1,513.79	361.78	1,176.32	504.47	48.79	119.15	.	.	.	.	.	10,060.52
Fludioxonil/flutriafol	529.79	.	.	.	.	.	.	.	.	.	.	.	.	529.79
Fluopyram/Prothioconazole/Tebuconazole	374.56	.	.	.	.	70.17	.	.	.	.	.	.	.	444.73
Fluquinconazole/prochloraz	.	.	.	.	249.68	.	.	.	.	.	.	.	.	249.68
Flutolanil	.	.	.	.	.	.	.	.	.	.	.	.	224.37	224.37
Imazalil	.	.	.	.	.	.	.	.	.	.	.	40.26	271.88	312.15
Imazalil/pencycuron	.	.	.	.	.	.	.	.	.	.	.	42.38	653.86	696.24
Imazalil/thiabendazole	.	.	.	.	.	.	.	.	.	.	.	.	160.33	160.33
Imidacloprid/tebuconazole/triazoxide	100.88	.	83.59	.	.	.	.	.	.	.	.	.	.	184.47
Pencycuron	.	.	.	.	.	.	.	.	.	.	.	.	239.25	239.25
Prochloraz/triticonazole	4,770.70	204.76	1,528.89	167.10	2,659.82	453.37	.	134.72	.	.	.	.	.	9,919.36
Prothioconazole	.	.	76.46	.	79.45	.	.	.	.	.	.	.	.	155.92
Silthiofam	100.84	.	209.54	.	1,196.41	.	.	.	.	.	.	.	.	1,506.79
Thiram	.	.	.	.	.	.	.	.	44.45	21.90	.	.	.	66.35
All seed treatments	***12,827.58***	***238.64***	***6,376.42***	***528.88***	***8,771.92***	***1,028.01***	***48.79***	***647.59***	***44.45***	***21.90***	***.***	***82.65***	***1,549.70***	***32,166.52***
All pesticides	***117,153.69***	***1,342.31***	***54,149.17***	***4,335.84***	***85,852.51***	***8,379.01***	***341.56***	***5,402.78***	***3,300.04***	***268.89***	***276.31***	***1,629.37***	***52,783.85***	***335,215.33***

Table 9: Estimated quantities (kilograms) of pesticide formulations used on arable crops in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Fungicides														
Ametoctradin/Dimethomorph	.	.	.	.	.	.	.	.	.	.	.	9.58	901.50	911.08
Azoxystrobin	.	.	1.03	.	97.88	.	.	.	39.47	.	7.81	.	119.67	265.86
Azoxystrobin/chlorothalonil	64.42	.	98.54	.	52.66	.	.	.	.	.	.	.	.	215.62
Benthiavalicarb-isopropyl/mancozeb	.	.	.	.	.	.	.	.	.	.	.	45.61	1,692.41	1,738.02
Bixafen/Fluoxastrobin/Prothioconazole	.	.	.	.	262.80	.	.	.	.	.	.	.	.	262.80
Bixafen/Prothioconazole	258.18	.	333.00	10.04	409.48	.	.	.	.	.	.	.	.	1,010.71
Bixafen/Prothioconazole/Spiroxamine	36.38	.	.	.	94.40	.	.	.	.	.	.	.	.	130.78
Boscalid/Epoxiconazole	135.62	.	37.49	18.31	522.01	1.59	.	21.45	.	.	.	.	.	736.47
Carbendazim/flusilazole	230.85	.	74.05	.	.	.	.	.	.	.	.	.	.	304.89
Chlorothalonil	3,060.95	59.15	2,537.50	111.57	4,837.60	.	.	159.54	.	.	.	.	.	10,766.31
Chlorothalonil/cyproconazole	392.51	.	151.70	.	8.10	.	.	.	.	.	.	.	.	552.32
Chlorothalonil/cyproconazole/propiconazole	376.83	.	111.21	19.25	242.70	.	.	.	.	.	.	.	.	750.00
Chlorothalonil/Penthiopyrad	675.30	.	237.39	.	1,359.96	.	.	.	.	.	.	.	.	2,272.65
Chlorothalonil/picoxystrobin	210.35	.	.	.	.	.	.	.	.	.	.	.	.	210.35
Chlorothalonil/propiconazole	4.28	.	3.10	.	.	.	.	.	.	.	.	.	.	7.38
Chlorothalonil/Proquinazid	548.12	.	188.98	.	.	.	.	.	.	.	.	.	.	737.10
Chlorothalonil/Tebuconazole	.	.	.	.	235.88	.	.	.	.	.	.	.	.	235.88
Cyazofamid	.	.	.	.	.	.	.	.	.	.	.	9.97	291.86	301.83
Cymoxanil	.	.	.	.	.	.	.	.	.	.	.	.	49.17	49.17
Cymoxanil/mancozeb	.	.	.	.	.	.	.	.	.	.	.	.	4,948.06	4,948.06
Cyproconazole	.	.	.	.	7.01	.	.	.	.	.	.	.	.	7.01
Cyproconazole/propiconazole	18.81	.	.	.	.	.	.	.	.	.	.	.	.	18.81
Cyprodinil	423.19	4.05	72.50	.	13.99	.	.	.	.	.	.	.	.	513.72
Cyprodinil/isopyrazam	573.35	.	317.73	.	10.01	.	.	.	.	.	.	.	.	901.09
Cyprodinil/picoxystrobin	17.97	.	84.71	.	.	.	.	.	.	.	.	.	.	102.68
Dimethomorph/mancozeb	.	.	.	.	.	.	.	.	.	.	.	.	3,861.94	3,861.94
Epoxiconazole	38.05	.	46.19	20.50	208.47	2.64	.	11.53	.	.	.	.	.	327.39
Epoxiconazole/fenpropimorph	137.31	.	43.65	.	124.13	17.79	.	.	.	.	.	.	.	322.87
Epoxiconazole/fenpropimorph/kresoxim-methyl	178.25	35.49	.	.	30.49	55.35	.	21.92	.	.	.	.	.	321.51
Epoxiconazole/fenpropimorph/metrafenone	17.42	6.22	15.51	75.34	53.30	35.89	.	229.50	.	.	.	.	.	433.19
Epoxiconazole/Fluxapyroxad	.	.	.	.	80.78	.	.	.	.	.	.	.	.	80.78
Epoxiconazole/Fluxapyroxad/Pyraclostrobin	66.91	.	63.05	8.26	47.98	.	.	.	.	.	.	.	.	186.20
Epoxiconazole/Isopyrazam	.	.	.	.	109.26	.	.	.	.	.	.	.	.	109.26

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on arable crops in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Fungicides														
Epoxiconazole/metconazole	26.41	.	.	4.59	475.08	1.54	.	.	.	.	.	.	.	507.63
Epoxiconazole/prochloraz	326.88	.	185.07	.	409.01	.	.	.	.	.	.	.	.	920.97
Fenamidone/propamocarb hydrochloride	.	.	.	.	.	.	.	.	.	.	.	90.18	2,445.56	2,535.73
Fenpropidin	.	.	.	7.41	.	.	.	.	.	.	.	.	.	7.41
Fenpropimorph	449.60	.	84.55	.	36.53	169.70	58.55	106.91	.	.	.	.	.	905.83
Fenpropimorph/flusilazole	470.89	.	312.32	.	129.88	.	.	.	.	.	.	.	.	913.10
Fenpropimorph/pyraclostrobin	.	.	.	.	.	132.39	.	26.03	.	.	.	.	.	158.42
Fluazinam	.	.	.	.	.	.	.	.	.	.	.	78.59	1,920.14	1,998.73
Fluopicolide/propamocarb hydrochloride	.	.	.	.	.	.	.	.	.	.	.	.	3,536.72	3,536.72
Fluoxastrobin/prothioconazole	410.60	5.40	346.58	.	52.53	.	.	9.08	1.39	.	.	.	.	825.57
Fluoxastrobin/prothioconazole/trifloxystrobin	87.36	.	68.45	.	.	.	.	.	.	.	.	.	.	155.81
Fluxapyroxad	19.65	.	.	.	23.50	.	.	.	.	.	.	.	.	43.15
Folpet	457.31	.	129.90	24.42	108.12	.	.	.	.	.	.	.	.	719.74
Isopyrazam	6.72	.	0.64	.	.	.	.	.	.	.	.	.	.	7.36
Mancozeb	.	.	.	.	.	.	.	.	.	.	.	628.87	495.95	1,124.83
Mancozeb/zoxamide	.	.	.	.	.	.	.	.	.	.	.	.	296.89	296.89
Mandipropamid	.	.	.	.	.	.	.	.	.	.	.	2.50	758.64	761.14
Metrafenone	.	.	.	.	.	0.71	.	.	.	.	.	.	.	0.71
Penthiopyrad	14.93	.	66.89	6.26	254.33	.	.	.	.	.	.	.	.	342.41
Picoxystrobin	15.59	.	.	.	.	.	.	.	.	.	.	.	.	15.59
Prochloraz/tebuconazole	.	.	8.27	.	137.70	.	.	.	.	.	.	.	.	145.97
Proquinazid	2.04	.	10.50	2.22	16.49	4.89	.	2.72	.	.	.	.	.	38.85
Prothioconazole	307.55	.	191.51	.	220.57	6.67	.	.	57.39	.	.	.	.	783.69
Prothioconazole/Spiroxamine	69.64	.	15.35	.	.	.	.	.	.	.	.	.	.	84.99
Prothioconazole/tebuconazole	152.46	.	92.29	24.69	606.46	23.46	.	14.89	5.87	.	.	.	.	920.13
Prothioconazole/trifloxystrobin	304.65	.	180.45	.	148.54	.	.	.	.	.	.	.	.	633.64
Pyraclostrobin	94.98	.	15.72	4.74	201.25	13.72	.	15.84	.	.	.	.	.	346.26
Spiroxamine/tebuconazole	141.95	.	168.17	.	32.00	.	.	.	.	.	.	.	.	342.11
Sulphur	199.07	.	.	.	.	.	.	.	.	.	.	.	.	199.07
Tebuconazole	19.83	.	19.71	.	176.48	34.69	.	18.64	37.72	4.29	17.11	.	.	328.46
All fungicides	***11,043.18***	***110.32***	***6,313.72***	***337.60***	***11,837.37***	***501.02***	***58.55***	***638.05***	***141.83***	***4.29***	***24.93***	***865.31***	***21,318.51***	***53,194.68***

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on arable crops in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Herbicides & desiccants														
2,4-D	31.43	.	.	13.67	.	.	.	.	.	.	.	.	.	45.11
2,4-DB	200.07	87.67	.	.	.	.	.	.	.	.	.	.	.	287.74
Amidosulfuron/iodosulfron-methyl-sodium	8.27	.	.	.	.	.	.	.	.	.	.	.	.	8.27
Bentazone	.	.	.	.	.	.	.	.	.	.	16.58	.	.	16.58
Bromoxynil/ioxynil	202.36	.	.	.	16.24	.	.	.	.	.	.	.	.	218.60
Carfentrazone-ethyl	.	.	.	.	.	.	.	.	.	.	.	0.75	50.22	50.97
Carfentrazone-ethyl/flupyrsulfron-methyl	.	.	.	.	.	.	.	6.70	.	.	.	.	.	6.70
Chlorotoluron	.	.	179.94	.	.	.	.	.	.	.	.	.	.	179.94
Chlorotoluron/diflufenican	1,448.33	.	1,006.60	21.39	628.71	.	.	.	.	.	.	.	.	3,105.03
Clomazone	.	.	.	.	.	.	.	.	.	0.98	.	.	.	0.98
Clopyralid	.	.	.	1.33	.	.	.	.	.	.	.	.	.	1.33
Clopyralid/picloram	.	.	.	.	.	.	.	.	1.53	2.68	.	.	.	4.21
Cloquintocet-mexyl/Pinoxaden	18.62	.	0.60	.	.	.	.	.	.	.	.	.	.	19.22
Dicamba/MCPA/mecoprop-P	265.68	49.43	37.11	.	.	.	.	.	.	.	.	.	.	352.22
Dicamba/mecoprop-P	712.16	.	128.58	.	80.28	.	.	13.63	.	.	.	.	.	934.66
Diflufenican	32.13	.	200.16	2.77	106.90	11.51	.	.	.	.	.	.	.	353.47
Diflufenican/flufenacet	116.08	.	234.21	12.96	229.35	.	.	6.43	.	.	.	.	.	599.04
Diflufenican/iodosulfron-methyl-sodium/mesosulfuron-methyl	.	.	2.55	.	204.90	.	.	.	.	.	.	.	.	207.45
Diflufenican/isoproturon	8.47	.	.	.	.	.	.	.	.	.	.	.	.	8.47
Diquat	.	.	.	.	.	.	.	.	.	9.15	.	37.98	2,302.77	2,349.90
Florasulam/fluroxypyr	163.93	1.40	54.54	1.99	92.30	4.89	.	9.74	.	.	.	.	.	328.79
Florasulam/Pyroxsulam	.	.	.	.	6.08	.	.	.	.	.	.	.	.	6.08
Flufenacet/pendimethalin	137.95	.	2,602.20	.	1,237.31	.	.	.	.	.	.	.	.	3,977.47
Flumioxazine	.	.	.	.	.	.	.	2.04	.	.	.	.	.	2.04
Flupyrsulfuron-methyl/Thifensulfuron-methyl	.	.	.	.	.	.	.	5.96	.	.	.	.	.	5.96
Fluroxypyr	953.63	.	218.92	41.14	428.53	104.45	.	3.59	.	.	.	.	.	1,750.25
Glyphosate	7,504.88	.	3,505.34	524.07	3,418.49	745.82	.	263.82	654.95	77.41	3.57	63.37	1,308.95	18,070.67
Iodosulfron-methyl-sodium	10.08	.	0.31	.	0.04	.	.	.	.	.	.	.	.	10.43
iodosulfron-methyl-sodium/mesosulfuron-methyl	.	.	.	.	1.80	.	.	.	.	.	.	.	.	1.80
Isoproturon	.	.	94.99	.	80.95	.	.	.	.	.	.	.	.	175.94
Isoproturon/pendimethalin	.	.	22.48	.	36.78	.	.	.	.	.	.	.	.	59.26
Linuron	.	.	.	.	.	.	.	.	.	.	.	10.27	312.40	322.67
MCPA	268.68	.	1.43	.	.	54.71	.	.	.	.	.	.	.	324.83
Mecoprop-P	3,353.40	.	340.29	114.20	627.88	355.25	.	155.45	.	.	.	.	.	4,946.47

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on arable crops in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Herbicides & desiccants														
Metazachlor	.	.	.	.	.	.	.	.	75.40	41.16	.	.	.	116.56
Metribuzin	.	.	.	.	.	.	.	.	.	.	.	80.65	2,279.46	2,360.12
Metsulfuron-methyl	19.82	.	3.42	0.52	1.47	2.07	.	0.17	.	.	.	.	.	27.47
Metsulfuron-methyl/Thifensulfuron-methyl	78.18	0.78	5.11	1.50	6.39	.	.	3.82	.	.	.	.	.	95.79
Metsulfuron-methyl/tribenuron-methyl	45.26	.	3.84	0.61	.	5.55	.	.	.	.	.	.	.	55.26
Pendimethalin	396.10	.	28.41	.	173.97	.	.	.	.	.	57.88	.	.	656.36
Pendimethalin/picolinafen	228.08	.	336.44	.	122.19	.	.	.	.	.	.	.	.	686.71
Pinoxaden	92.34	.	25.07	1.42	37.59	.	.	.	.	.	.	.	.	156.41
Propaquizafop	.	.	.	.	.	.	.	.	10.87	.	.	.	0.50	11.37
Propyzamide	.	.	.	.	.	.	.	.	258.95	.	.	.	.	258.95
Prosulfocarb	.	.	414.11	.	682.83	.	.	.	.	.	.	36.51	1,290.22	2,423.67
Pyroxsulam	4.10	.	.	.	.	.	.	.	.	.	.	.	.	4.10
Rimsulfuron	.	.	.	.	.	.	.	.	.	.	.	.	1.40	1.40
Thifensulfuron-methyl/tribenuron-methyl	46.79	.	7.85	1.96	13.22	6.46	.	2.68	.	.	.	.	.	78.96
Tribenuron-methyl	2.03	1.71	.	.	.	.	0.44	.	.	.	.	.	.	4.17
Trifluralin	.	.	22.80	.	.	.	.	.	.	.	.	.	.	22.80
Unknown herbicide	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All herbicides & desiccants	***16,348.86***	***140.99***	***9,477.29***	***739.55***	***8,234.20***	***1,290.70***	***0.44***	***474.03***	***1,001.69***	***131.38***	***78.03***	***229.53***	***7,545.92***	***45,692.61***
Insecticides														
Alpha-cypermethrin	.	.	.	.	6.40	.	.	.	.	.	.	.	.	6.40
Chlorpyrifos	1,323.82	.	186.21	16.74	120.85	.	.	.	.	.	.	.	227.63	1,875.25
Cypermethrin	.	.	5.92	.	0.50	0.46	.	.	.	.	.	.	.	6.88
Deltamethrin	0.08	.	0.10	.	1.96	0.50	.	.	.	.	.	.	.	2.64
Dimethoate	9.86	.	.	.	73.86	.	.	.	.	.	.	.	.	83.73
Esfenvalerate	24.10	0.37	8.03	0.38	11.24	0.59	.	.	.	.	.	.	1.30	46.01
Flonicamid	.	.	.	.	.	.	.	.	.	.	.	.	8.11	8.11
Lambda-cyhalothrin	10.08	.	10.40	0.68	11.94	0.81	.	1.09	0.69	.	0.33	0.28	4.67	40.98
Pirimicarb	.	.	9.08	.	.	.	.	9.15	.	.	.	.	.	18.23
All insecticides	***1,367.94***	***0.37***	***219.74***	***17.81***	***226.75***	***2.36***	***.***	***10.24***	***0.69***	***.***	***0.33***	***0.28***	***241.70***	***2,088.21***

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on arable crops in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Molluscicides														
Methiocarb	9.53	.	0.62	.	40.84	.	.	.	44.55	.	.	.	38.29	133.83
All molluscicides	***9.53***	***.***	***0.62***	***.***	***40.84***	***.***	***.***	***.***	***44.55***	***.***	***.***	***.***	***38.29***	***133.83***
Growth Regulators														
2-chloroethylphosphonic acid	297.57	.	314.74	11.85	92.42	1.75	.	.	.	.	.	.	.	718.33
Chlormequat	3,701.96	.	2,709.33	91.23	4,688.67	503.16	164.68	485.91	.	.	.	.	.	12,344.95
Chlormequat with choline chloride	.	.	.	119.98	232.03	.	.	.	.	.	.	.	.	352.00
Chlormequat/Imazaquin	.	.	.	.	291.66	.	.	.	.	.	.	.	.	291.66
Ethephon	.	.	.	.	.	2.63	.	.	.	.	.	.	.	2.63
Maleic hydrazide	.	.	.	.	.	.	.	.	.	.	.	.	279.12	279.12
Mepiquat chloride/Prohexadione-calcium	34.57	.	43.30	7.77	.	25.83	.	38.12	.	.	.	.	.	149.58
Trinexapac-ethyl	261.90	.	139.56	10.83	169.79	33.31	.	4.59	.	.	.	.	.	619.98
All growth regulators	***4,296.00***	***.***	***3,206.92***	***241.66***	***5,474.56***	***566.69***	***164.68***	***528.62***	***.***	***.***	***.***	***.***	***279.12***	***14,758.26***
Other														
Calcium chloride	.	.	1.84	.	2.19	.	.	.	1.11	.	.	.	.	5.15
Carboxylated styrene-butadiene	.	.	.	.	.	.	.	.	24.23	.	.	.	.	24.23
Synthetic latex	.	.	.	.	.	.	.	.	321.66	.	.	.	.	321.66
All other	***.***	***.***	***1.84***	***.***	***2.19***	***.***	***.***	***.***	***347.00***	***.***	***.***	***.***	***.***	***351.04***
Seed treatments														
Carboxin/thiram	24.61	.	.	.	.	.	.	.	.	.	.	.	.	24.61
Clothianidin/prothioconazole	49.08	.	299.62	.	358.62	.	.	39.49	.	.	.	.	.	746.81
Fludioxonil	55.80	0.28	13.05	3.42	10.41	4.51	0.38	0.94	.	.	.	.	.	88.78
Fludioxonil/flutriafol	11.21	.	.	.	.	.	.	.	.	.	.	.	.	11.21
Fluopyram/Prothioconazole/Tebuconazole	5.26	.	.	.	.	1.25	.	.	.	.	.	.	.	6.50
Fluquinconazole/prochloraz	.	.	.	.	32.29	.	.	.	.	.	.	.	.	32.29
Flutolanil	.	.	.	.	.	.	.	.	.	.	.	.	51.82	51.82
Imazalil	.	.	.	.	.	.	.	.	.	.	.	1.01	6.49	7.50
Imazalil/pencycuron	.	.	.	.	.	.	.	.	.	.	.	35.54	466.57	502.11
Imazalil/thiabendazole	.	.	.	.	.	.	.	.	.	.	.	.	18.11	18.11

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on arable crops in Northern Ireland in 2014.

Pesticide type & formulation	Spring barley	Undersown spring barley	Winter barley	Spring wheat	Winter wheat	Spring oats	Undersown spring oats	Winter oats	Winter oilseed rape	Spring oilseed rape	Peas & beans	Early potatoes	Maincrop potatoes (inc.seed)	All crops
Seed treatments														
Imidacloprid/tebuconazole/triazoxide	7.79	.	4.45	.	.	.	.	.	.	.	.	.	.	12.24
Pencycuron	.	.	.	.	.	.	.	.	.	.	.	.	156.53	156.53
Prochloraz/triticonazole	139.76	7.20	45.49	5.27	76.06	12.73	.	3.95	.	.	.	.	.	290.47
Prothioconazole	.	.	1.44	.	1.15	.	.	.	.	.	.	.	.	2.59
Silthiofam	3.96	.	8.73	.	53.13	.	.	.	.	.	.	.	.	65.82
Thiram	.	.	.	.	.	.	.	.	0.44	0.32	.	.	.	0.76
All seed treatments	***297.45***	***7.48***	***372.78***	***8.70***	***531.67***	***18.48***	***0.38***	***44.37***	***0.44***	***0.32***	***.***	***36.55***	***699.53***	***2,018.16***
All pesticides	***33,362.96***	***259.17***	***19,592.92***	***1,345.31***	***26,347.57***	***2,379.26***	***224.06***	***1,695.32***	***1,536.19***	***135.99***	***103.28***	***1,131.68***	***30,123.08***	***118,236.78***

Table 10: The fifty active substances most extensively used on arable crops in Northern Ireland in 2014, ranked by area treated (spray hectares).

	Active substance	Treated area (sp ha)
1	Chlorothalonil	30,355.65
2	Prothioconazole	28,531.36
3	Glyphosate	24,149.53
4	Epoxiconazole	17,621.69
5	Chlormequat	15,237.78
6	Fluroxypyr	14,613.31
7	Diflufenican	13,656.16
8	Metsulfuron-methyl	13,124.74
9	Esfenvalerate	12,081.47
10	Trinexapac-ethyl	11,593.56
11	Fluazinam	10,637.24
12	Fenpropimorph	9,177.99
13	Tebuconazole	9,163.25
14	Tribenuron-methyl	9,031.63
15	Mancozeb	8,303.54
16	Mecoprop-P	7,761.82
17	Lambda-cyhalothrin	7,475.83
18	Flufenacet	7,419.90
19	Bixafen	7,046.74
20	Fluoxastrobin	6,447.67
21	Penthiopyrad	6,224.78
22	Propamocarb hydrochloride	6,134.78
23	Diquat	6,047.64
24	Thifensulfuron-methyl	5,853.61
25	Mandipropamid	5,647.01
26	Iodosulfron-methyl-Sodium	5,628.31
27	Pendimethalin	5,622.41
28	Cyprodinil	5,386.69
29	Pinoxaden	5,098.36
30	Trifloxystrobin	4,893.99
31	Metconazole	4,457.62
32	Dimethomorph	4,329.61
33	Cyazofamid	3,937.91
34	Cymoxanil	3,921.08
35	Mesosulfuron-methyl	3,768.55
36	Pyraclostrobin	3,745.12
37	Florasulam	3,601.89
38	Flusilazole	3,573.53
39	Isopyrazam	3,300.21
40	Fluopicolide	3,279.41
41	Metribuzin	3,106.32
42	2-chloroethylphosphonic acid	3,046.11
43	Proquinazid	2,900.02
44	Fenamidone	2,855.37
45	Prochloraz	2,851.08
46	Boscalid	2,632.94
47	Cyproconazole	2,361.38
48	Chlorpyrifos	2,313.37
49	Chlorotoluron	2,151.43
50	Azoxystrobin	2,106.34

Table 11: The fifty active substances most extensively used on arable crops in Northern Ireland in 2014, ranked by weight (kilograms).

	Active substance	Quantity (kg)
1	Glyphosate	18,070.67
2	Chlorothalonil	14,704.27
3	Chlormequat	12,635.98
4	Mancozeb	11,196.14
5	Mecoprop-P	5,818.36
6	Propamocarb hydrochloride	5,328.31
7	Pendimethalin	4,669.73
8	Chlorotoluron	3,169.94
9	Prothioconazole	3,100.29
10	Prosulfocarb	2,423.67
11	Metribuzin	2,360.11
12	Diquat	2,349.90
13	Fenpropimorph	2,289.86
14	Fluroxypyr	2,068.93
15	Fluazinam	1,998.74
16	Chlorpyrifos	1,756.33
17	Epoxiconazole	1,413.97
18	Cyprodinil	1,270.60
19	Flufenacet	1,133.75
20	Penthiopyrad	989.44
21	Tebuconazole	943.19
22	Prochloraz	818.19
23	Dimethomorph	780.83
24	Diflufenican	771.00
25	Mandipropamid	761.15
26	Folpet	719.74
27	2-chloroethylphosphonic acid	718.33
28	Trinexapac-ethyl	619.98
29	MCPA	604.69
30	Boscalid	542.69
31	Fluoxastrobin	520.90
32	Ametoctradin	520.62
33	Flusilazole	476.34
34	Pyraclostrobin	462.40
35	Fenamidone	422.62
36	Spiroxamine	360.48
37	Cymoxanil	357.20
38	Chlormequat with choline chloride	352.00
39	Bixafen	340.48
40	Trifloxystrobin	324.35
41	Linuron	322.67
42	Fluopicolide	321.52
43	Cyazofamid	301.82
44	Azoxystrobin	301.79
45	Isopyrazam	296.15
46	2,4-DB	287.74
47	Maleic hydrazide	279.12
48	Propyzamide	258.95
49	Metconazole	214.76
50	Isoproturon	202.75

Table 12: Spring barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	General disease control	Disease prevention	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides						
Azoxystrobin/chlorothalonil	.	.	92.88	92.88	92.88	64.42
Bixafen/Prothioconazole	.	.	1,555.42	1,555.42	1,545.22	258.18
Bixafen/Prothioconazole/Spiroxamine	.	.	101.05	101.05	101.05	36.38
Boscalid/Epoxiconazole	.	.	446.72	446.72	446.72	135.62
Carbendazim/flusilazole	.	388.76	676.18	1,064.94	1,064.94	230.85
Chlorothalonil	.	583.67	5,372.13	5,955.81	4,778.48	3,060.95
Chlorothalonil/cyproconazole	.	300.14	324.11	624.25	624.25	392.51
Chlorothalonil/cyproconazole/propiconazole	.	.	577.72	577.72	532.46	376.83
Chlorothalonil/Penthiopyrad	.	351.83	909.84	1,261.67	1,261.67	675.30
Chlorothalonil/picoxystrobin	.	.	399.46	399.46	399.46	210.35
Chlorothalonil/propiconazole	.	13.69	.	13.69	13.69	4.28
Chlorothalonil/Proquinazid	.	.	1,126.18	1,126.18	1,126.18	548.12
Cyproconazole/propiconazole	.	.	92.88	92.88	92.88	18.81
Cyprodinil	.	.	1,872.08	1,872.08	1,797.79	423.19
Cyprodinil/isopyrazam	.	.	1,723.65	1,723.65	1,190.86	573.35
Cyprodinil/picoxystrobin	.	.	145.50	145.50	72.75	17.97
Epoxiconazole	167.18	236.39	56.95	460.52	342.32	38.05
Epoxiconazole/fenpropimorph	.	60.96	334.16	395.13	395.13	137.31
Epoxiconazole/fenpropimorph/kresoxim-methyl	.	200.86	593.32	794.17	794.17	178.25
Epoxiconazole/fenpropimorph/metrafenone	.	.	34.84	34.84	34.84	17.42
Epoxiconazole/Fluxapyroxad/Pyraclostrobin	32.15	.	191.01	223.16	223.16	66.91
Epoxiconazole/metconazole	.	125.39	79.30	204.69	204.69	26.41
Epoxiconazole/prochloraz	.	73.48	696.35	769.84	654.82	326.88
Fenpropimorph	.	.	1,940.65	1,940.65	1,940.65	449.60
Fenpropimorph/flusilazole	.	670.86	451.86	1,122.72	1,040.22	470.89
Fluoxastrobin/prothioconazole	.	800.03	1,452.89	2,252.92	1,659.61	410.60
Fluoxastrobin/prothioconazole/trifloxystrobin	.	.	513.38	513.38	513.38	87.36
Fluxapyroxad	.	131.05	333.81	464.86	433.76	19.65
Folpet	.	54.74	1,029.48	1,084.22	896.58	457.31
Isopyrazam	.	.	144.83	144.83	144.83	6.72
Penthiopyrad	.	.	74.65	74.65	74.65	14.93
Picoxystrobin	.	.	155.95	155.95	155.95	15.59
Proquinazid	.	.	102.06	102.06	102.06	2.04
Prothioconazole	.	251.16	2,523.86	2,775.02	2,518.12	307.55
Prothioconazole/Spiroxamine	.	.	359.53	359.53	359.53	69.64
Prothioconazole/tebuconazole	.	54.74	1,190.16	1,244.90	950.48	152.46
Prothioconazole/trifloxystrobin	.	68.43	2,101.01	2,169.44	1,863.56	304.65
Pyraclostrobin	.	57.03	920.57	977.60	714.28	94.98
Spiroxamine/tebuconazole	.	200.62	77.23	277.86	277.86	141.95
Sulphur	.	124.42	.	124.42	124.42	199.07
Tebuconazole	.	.	79.30	79.30	79.30	19.83
All fungicides	***199.33***	***4,748.27***	***30,852.96***	***35,800.56***	***.***	***11,043.18***

Table 12 cont: **Spring barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	General weed				Ground		Volunteer				All	area (ha) of	Quantity
Herbicides & desiccants	control	Cleavers	Desiccation	Docks	preparation	Chickweed	oats	Redshank	Scutch	Headlands	reasons	treatment	(kgs)
Amidosulfuron/iodosulfron-methyl-sodium	271.61	.	.	.	.	.	.	.	.	.	271.61	271.61	8.27
Bromoxynil/ioxynil	690.45	.	.	.	.	.	.	.	.	.	690.45	690.45	202.36
Chlorotoluron/diflufenican	974.91	.	.	.	.	.	.	.	.	.	974.91	974.91	1,448.33
Cloquintocet-mexyl/Pinoxaden	231.47	.	.	.	.	.	118.65	.	.	.	350.12	350.12	18.62
2,4-D	89.81	.	.	.	.	.	.	.	.	.	89.81	89.81	31.43
2,4-DB	202.50	.	.	.	.	.	.	.	.	.	202.50	202.50	200.07
Dicamba/MCPA/mecoprop-P	218.41	.	.	.	.	.	.	.	.	.	218.41	218.41	265.68
Dicamba/mecoprop-P	433.59	.	.	69.89	.	374.27	.	.	.	.	877.75	877.75	712.16
Diflufenican	560.30	.	.	.	.	.	.	.	.	.	560.30	560.30	32.13
Diflufenican/flufenacet	158.61	.	.	.	.	.	.	.	.	.	158.61	158.61	29.41
Diflufenican/flufenacet	662.02	.	.	.	.	.	.	.	.	.	662.02	662.02	86.67
Diflufenican/isoproturon	28.58	.	.	.	.	.	.	.	.	.	28.58	28.58	8.47
Florasulam/fluroxypyr	1,427.80	215.63	.	.	.	.	.	.	.	72.75	1,716.18	1,716.18	163.93
Flufenacet/pendimethalin	141.25	.	.	.	.	.	.	.	.	.	141.25	141.25	98.76
Flufenacet/pendimethalin	62.21	.	.	.	.	.	.	.	.	.	62.21	62.21	39.19
Fluroxypyr	6,493.42	60.01	.	.	.	164.18	.	.	.	.	6,717.61	6,717.61	953.63
Glyphosate	7.07	.	4,604.73	.	5,089.44	.	.	.	80.20	743.56	10,525.00	8,897.02	7,504.88
Iodosulfron-methyl-sodium	1,537.32	.	.	.	.	.	.	.	.	.	1,537.32	1,537.32	10.08
MCPA	446.64	.	.	.	.	.	.	.	.	.	446.64	446.64	268.68
Mecoprop-P	4,137.98	.	.	.	.	.	.	150.64	.	.	4,288.62	4,008.00	3,353.40
Metsulfuron-methyl	3,643.83	.	.	.	.	.	.	.	.	.	3,643.83	3,643.83	19.82
Metsulfuron-methyl/Thifensulfuron-methyl	2,213.55	.	.	.	.	.	.	.	.	.	2,213.55	2,213.55	78.18
Metsulfuron-methyl/tribenuron-methyl	4,393.18	.	.	.	.	.	.	.	.	.	4,393.18	4,393.18	45.26
Pendimethalin	484.70	.	.	.	.	.	.	.	.	.	484.70	484.70	396.10
Pendimethalin/picolinafen	252.91	.	.	.	.	.	.	.	.	.	252.91	252.91	228.08
Pinoxaden	.	.	.	.	.	.	2,642.02	.	.	.	2,642.02	2,517.61	92.34
Pyroxsulam	218.41	.	.	.	.	.	.	.	.	.	218.41	218.41	4.10
Thifensulfuron-methyl/tribenuron-methyl	1,461.03	.	.	.	.	.	.	.	.	.	1,461.03	1,461.03	46.79
Tribenuron-methyl	202.50	.	.	.	.	.	.	.	.	.	202.50	202.50	2.03
	31,646.05	***275.64***	***4,604.73***	***69.89***	***5,089.44***	***538.45***	***2,760.67***	***150.64***	***80.20***	***816.31***	***46,032.03***	**.**	***16,348.86***

Table 12 cont: **Spring barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	Cereal aphids	Leatherjackets	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides						
Chlorpyrifos	105.63	1,662.45	7.07	1,775.15	1,775.15	1,323.82
Deltamethrin	31.43	.	.	31.43	31.43	0.08
Dimethoate	28.58	.	.	28.58	28.58	9.86
Esfenvalerate	6,294.85	.	104.41	6,399.26	5,664.18	24.10
Fipronil	263.32	.	.	263.32	263.32	3.95
Lambda-cyhalothrin	2,152.34	.	.	2,152.34	1,767.10	10.08
All insecticides	***8,876.15***	***1,662.45***	***111.48***	***10,650.07***	**.**	***1,371.89***

Pesticide type & formulation	Slugs	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Molluscicides				
Methiocarb	70.11	70.11	70.11	9.53
All molluscicides	***70.11***	***70.11***	**.**	***9.53***

Pesticide type & formulation	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Chlormequat	5,311.90	5,311.90	5,115.47	3,701.96
2-chloroethylphosphonic acid	1,448.15	1,448.15	1,422.60	297.57
Mepiquat chloride/Prohexadione-calcium	233.05	233.05	233.05	34.57
Trinexapac-ethyl	5,043.56	5,043.56	4,596.24	261.90
All growth regulators	***12,036.66***	***12,036.66***	**.**	***4,296.00***

Table 13: Undersown barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	General weed control	Cereal aphids	Disease prevention	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides							
Chlorothalonil	.	.	.	147.89	147.89	147.89	59.15
Cyprodinil	.	.	.	21.43	21.43	21.43	4.05
Epoxiconazole/fenpropimorph/kresoxim-methyl	.	.	.	147.89	147.89	147.89	35.49
Epoxiconazole/fenpropimorph/metrafenone	.	.	.	12.44	12.44	12.44	6.22
Fluoxastrobin/prothioconazole	.	.	43.17	.	43.17	43.17	5.40
All fungicides	***.***	***.***	***43.17***	***329.65***	***372.82***	***.***	***110.32***
Herbicides & desiccants							
2,4-DB	147.89	.	.	.	147.89	147.89	87.67
Dicamba/MCPA/mecoprop-P	43.17	.	.	.	43.17	43.17	49.43
Florasulam/fluroxypyr	17.83	.	.	.	17.83	17.83	1.40
Metsulfuron-methyl/Thifensulfuron-methyl	17.83	.	.	.	17.83	17.83	0.78
Tribenuron-methyl	356.25	.	.	.	356.25	356.25	1.71
All herbicides & desiccants	***582.97***	***.***	***.***	***.***	***582.97***	***.***	***140.99***
Insecticides							
Esfenvalerate	.	147.89	.	.	147.89	147.89	0.37
All insecticides	***.***	***147.89***	***.***	***.***	***147.89***	***.***	***0.37***

Table 14: Winter barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	General disease control	Disease prevention	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides						
Azoxystrobin	.	.	8.26	8.26	4.13	1.03
Azoxystrobin/chlorothalonil	.	.	132.98	132.98	66.49	98.54
Bixafen/Prothioconazole	.	91.19	1,838.98	1,930.16	1,686.38	333.00
Boscalid/Epoxiconazole	.	75.65	17.10	92.74	92.74	37.49
Carbendazim/flusilazole	.	.	332.55	332.55	299.47	74.05
Chlorothalonil	287.00	283.82	4,398.63	4,969.44	3,366.61	2,537.50
Chlorothalonil/cyproconazole	.	213.56	30.14	243.70	243.70	151.70
Chlorothalonil/cyproconazole/propiconazole	.	.	210.91	210.91	193.69	111.21
Chlorothalonil/Penthiopyrad	.	79.94	465.46	545.39	505.43	237.39
Chlorothalonil/propiconazole	.	9.93	.	9.93	9.93	3.10
Chlorothalonil/Proquinazid	.	.	406.19	406.19	373.10	188.98
Cyprodinil	.	.	376.25	376.25	376.25	72.50
Cyprodinil/isopyrazam	.	.	840.39	840.39	694.40	317.73
Cyprodinil/picoxystrobin	.	.	322.10	322.10	238.51	84.71
Epoxiconazole	136.78	.	244.62	381.40	381.40	46.19
Epoxiconazole/fenpropimorph	.	.	87.12	87.12	87.12	43.65
Epoxiconazole/fenpropimorph/metrafenone	.	.	37.22	37.22	37.22	15.51
Epoxiconazole/Fluxapyroxad/Pyraclostrobin	95.67	.	145.70	241.37	241.37	63.05
Epoxiconazole/prochloraz	95.67	.	459.97	555.63	415.19	185.07
Fenpropimorph	.	26.47	397.63	424.10	424.10	84.55
Fenpropimorph/flusilazole	.	385.96	424.58	810.54	701.43	312.32
Fluoxastrobin/prothioconazole	.	.	1,441.25	1,441.25	1,077.91	346.58
Fluoxastrobin/prothioconazole/trifloxystrobin	.	.	421.49	421.49	388.41	68.45
Folpet	.	66.22	201.91	268.13	193.10	129.90
Isopyrazam	.	.	10.18	10.18	10.18	0.64
Penthiopyrad	.	.	488.26	488.26	306.24	66.89
Prochloraz/tebuconazole	.	.	41.35	41.35	41.35	8.27
Proquinazid	.	.	298.07	298.07	298.07	10.50
Prothioconazole	.	27.67	1,343.25	1,370.92	1,041.39	191.51
Prothioconazole/Spiroxamine	.	.	66.74	66.74	66.74	15.35
Prothioconazole/tebuconazole	.	.	409.64	409.64	304.59	92.29
Prothioconazole/trifloxystrobin	.	316.06	803.22	1,119.27	916.11	180.45
Pyraclostrobin	.	.	129.03	129.03	81.53	15.72
Spiroxamine/tebuconazole	.	.	409.89	409.89	409.89	168.17
Tebuconazole	.	.	140.58	140.58	140.58	19.71
All fungicides	***615.11***	***1,576.45***	***17,381.63***	***19,573.18***	***.***	***6,313.72***

Table 14 cont: **Winter barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	General weed control	Cleavers	Harvest aid	Desiccation	Ground preparation	Volunteer oats	Wild oats	Headlands	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants											
Chlorotoluron	145.70	.	.	.	.	.	.	.	145.70	145.70	179.94
Chlorotoluron/diflufenican	656.73	.	.	.	.	.	.	32.23	688.96	688.96	1006.6
Cloquintocet-mexyl/Pinoxaden	.	.	.	.	.	13.30	.	.	13.30	13.30	0.6
Dicamba/MCPA/mecoprop-P	30.14	.	.	.	.	.	.	.	30.14	30.14	37.11
Dicamba/mecoprop-P	199.12	.	.	.	.	.	.	.	199.12	199.12	128.58
Diflufenican	2,445.97	.	.	.	.	.	.	.	2,445.97	2,445.97	200.16
Diflufenican/flufenacet	121.95	.	.	.	.	.	.	.	121.95	121.95	20.92
Diflufenican/flufenacet	1,307.16	.	.	.	.	.	.	.	1,307.16	1,307.16	213.3
Diflufenican/iodosulfron-methyl-sodium/mesosulfuron-methyl	44.01	.	.	.	.	.	.	.	44.01	44.01	2.55
Florasulam/fluroxypyr	447.18	17.91	.	.	.	.	.	.	465.09	465.09	54.54
Flufenacet/pendimethalin	691.06	.	.	.	.	.	.	.	691.06	691.06	841.71
Flufenacet/pendimethalin	1,772.40	.	.	.	.	.	.	.	1,772.40	1,772.40	1760.49
Fluroxypyr	1,188.71	47.89	.	.	.	.	.	26.47	1,263.07	1,158.01	218.92
Glyphosate	.	.	152.66	2,654.48	1,699.38	.	.	53.86	4,560.37	3,888.64	3505.34
Iodosulfron-methyl-sodium	45.43	.	.	.	.	.	.	.	45.43	45.43	0.31
Isoproturon	47.49	.	.	.	.	.	.	.	47.49	47.49	94.99
Isoproturon/pendimethalin	39.97	.	.	.	.	.	.	.	39.97	39.97	22.48
MCPA	5.74	.	.	.	.	.	.	.	5.74	5.74	1.43
Mecoprop-P	424.71	.	.	.	.	.	.	.	424.71	424.71	340.29
Metsulfuron-methyl	566.98	.	.	.	.	.	.	.	566.98	566.98	3.42
Metsulfuron-methyl/Thifensulfuron-methyl	149.60	.	.	.	.	.	.	.	149.60	149.60	5.11
Metsulfuron-methyl/tribenuron-methyl	367.73	.	.	.	.	.	.	.	367.73	367.73	3.84
Pendimethalin	71.19	.	.	.	.	.	.	.	71.19	71.19	28.4
Pendimethalin/picolinafen	410.42	.	.	.	.	.	.	.	410.42	410.42	336.4
Pinoxaden	.	.	.	.	.	713.19	76.46	.	789.65	756.57	25.1
Prosulfocarb	228.21	.	.	.	.	.	.	.	228.21	228.21	414.1
Thifensulfuron-methyl/tribenuron-methyl	376.48	.	.	.	.	.	.	.	376.48	376.48	7.9
Trifluralin	47.49	.	.	.	.	.	.	.	47.49	47.49	22.8
All herbicides & desiccants	***11,724.03***	***65.80***	***152.66***	***2,654.48***	***1,699.38***	***726.49***	***76.46***	***112.55***	***17,319.38***	***.***	***9,477.3***

Table 14 cont: Winter barley: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Cereal aphids	Leatherjackets	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides						
Chlorpyrifos	38.84	170.15	.	208.99	208.99	186.21
Cypermethrin	195.40	.	41.35	236.76	236.76	5.92
Deltamethrin	20.90	.	.	20.90	20.90	0.10
Esfenvalerate	2,156.22	.	.	2,156.22	1,412.92	8.03
Lambda-cyhalothrin	1,472.15	.	.	1,472.15	1,288.01	10.40
Pirimicarb	71.19	.	.	71.19	71.19	9.08
	3,954.70	***170.15***	***41.35***	***4,166.20***	**.**	***219.74***

	Slugs	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Molluscicides				
Methiocarb	4.19	4.19	4.19	0.62
All molluscicides	***4.19***	***4.19***	***4.19***	***0.62***

	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Chlormequat	2,923.99	2,923.99	2,599.27	2,709.33
2-chloroethylphosphonic acid	1,131.06	1,131.06	1,131.06	314.74
Mepiquat chloride/Prohexadione-calcium	216.23	216.23	216.23	43.30
Trinexapac-ethyl	2,364.74	2,364.74	2,242.29	139.56
All growth regulators	***6,636.02***	***6,636.02***	**.**	***3,206.92***

Table 15: Spring wheat: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Disease prevention	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides					
Bixafen/Prothioconazole	.	34.19	34.19	34.19	10.04
Boscalid/Epoxiconazole	.	110.99	110.99	55.50	18.31
Chlorothalonil	.	248.44	248.44	185.84	111.57
Chlorothalonil/cyproconazole/propiconazole	.	49.37	49.37	49.37	19.25
Epoxiconazole	39.07	159.33	198.40	167.10	20.50
Epoxiconazole/fenpropimorph/metrafenone	.	150.62	150.62	75.31	75.34
Epoxiconazole/Fluxapyroxad/Pyraclostrobin	.	31.91	31.91	31.91	8.26
Epoxiconazole/metconazole	.	70.98	70.98	70.98	4.59
Fenpropidin	.	49.37	49.37	49.37	7.41
Folpet	.	60.68	60.68	60.68	24.42
Penthiopyrad	.	31.30	31.30	31.30	6.26
Proquinazid	.	110.99	110.99	55.50	2.22
Prothioconazole/tebuconazole	.	171.67	171.67	116.17	24.69
Pyraclostrobin	.	47.36	47.36	47.36	4.74
All fungicides	***39.07***	***1,327.18***	***1,366.25***	***.***	***337.60***

	General weed control	Desiccation	Ground preparation	Volunteer oats	Headlands	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants								
Chlorotoluron/diflufenican	13.32	.	.	.	.	13.32	13.32	21.39
Clopyralid	18.94	.	.	.	.	18.94	18.94	1.33
2,4-D	39.07	.	.	.	.	39.07	39.07	13.67
Diflufenican	55.50	.	.	.	.	55.50	55.50	2.77
Diflufenican/flufenacet	104.87	.	.	.	.	104.87	104.87	12.96
Florasulam/fluroxypyr	18.94	.	.	.	.	18.94	18.94	1.99
Fluroxypyr	275.21	.	.	.	.	275.21	275.21	41.14
Glyphosate	47.36	351.55	153.92	.	13.32	566.15	477.71	524.07
Mecoprop-P	169.21	.	.	.	.	169.21	169.21	114.20
Metsulfuron-methyl	107.22	.	.	.	.	107.22	107.22	0.52
Metsulfuron-methyl/Thifensulfuron-methyl	34.19	.	.	.	.	34.19	34.19	1.50
Metsulfuron-methyl/tribenuron-methyl	70.37	.	.	.	.	70.37	70.37	0.61
Pinoxaden	.	.	.	47.36	.	47.36	47.36	1.42
Thifensulfuron-methyl/tribenuron-methyl	83.91	.	.	.	.	83.91	83.91	1.96
All herbicides & desiccants	***1,038.10***	***351.55***	***153.92***	***47.36***	***13.32***	***1,604.24***	***.***	***739.55***

Table 15 cont: Spring wheat: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Cereal aphids	Leatherjackets	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides						
Chlorpyrifos	.	16.60	6.38	22.99	22.99	16.74
Esfenvalerate	95.12	.	.	95.12	63.21	0.38
Lambda-cyhalothrin	138.00	.	.	138.00	138.00	0.68
All insecticides	***233.12***	***16.60***	6.38	***256.10***	**.**	***17.81***

	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Chlormequat	152.52	152.52	152.52	91.23
Chlormequat with choline chloride	150.62	150.62	75.31	119.98
2-chloroethylphosphonic acid	49.37	49.37	49.37	11.85
Mepiquat chloride/Prohexadione-calcium	55.50	55.50	55.50	7.77
Trinexapac-ethyl	172.35	172.35	172.35	10.83
All growth regulators	***580.36***	***580.36***	**.**	***241.66***

Table 16: Winter wheat: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	General disease control	Septoria	Disease prevention	General fungal control	Headwash	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides								
Azoxystrobin	.	.	.	902.68	.	902.68	878.70	97.88
Azoxystrobin/chlorothalonil	.	.	.	87.77	.	87.77	87.77	52.66
Bixafen/Fluoxastrobin/Prothioconazole	.	.	58.18	1,426.71	.	1,484.89	978.76	262.80
Bixafen/Prothioconazole	102.56	.	.	1,614.38	.	1,716.94	1,619.26	409.48
Bixafen/Prothioconazole/Spiroxamine	.	.	.	224.10	.	224.10	224.10	94.40
Boscalid/Epoxiconazole	77.35	.	108.38	1,624.65	.	1,810.38	1,444.26	522.01
Chlorothalonil	598.79	228.85	121.78	8,644.46	62.16	9,656.03	6,534.17	4,837.60
Chlorothalonil/cyproconazole	.	.	.	39.05	.	39.05	39.05	8.10
Chlorothalonil/cyproconazole/propiconazole	.	.	.	423.35	.	423.35	423.35	242.70
Chlorothalonil/Penthiopyrad	419.65	.	196.16	1,855.87	.	2,471.67	2,288.81	1,359.96
Chlorothalonil/Tebuconazole	.	.	.	351.33	.	351.33	351.33	235.88
Cyproconazole	.	.	.	100.16	.	100.16	100.16	7.01
Cyprodinil	.	.	.	46.62	.	46.62	46.62	13.99
Cyprodinil/isopyrazam	.	.	.	38.67	.	38.67	38.67	10.01
Epoxiconazole	102.56	.	.	2,033.19	.	2,135.75	1,730.98	208.47
Epoxiconazole/fenpropimorph	.	.	.	383.86	.	383.86	383.86	124.13
Epoxiconazole/fenpropimorph/kresoxim-methyl	77.35	.	.	50.08	.	127.43	127.43	30.49
Epoxiconazole/fenpropimorph/metrafenone	.	.	.	84.20	.	84.20	84.20	53.30
Epoxiconazole/Fluxapyroxad	.	.	.	500.93	.	500.93	500.93	80.78
Epoxiconazole/Fluxapyroxad/Pyraclostrobin	93.90	.	.	89.35	.	183.25	183.25	47.98
Epoxiconazole/Isopyrazam	.	.	.	542.48	.	542.48	302.32	109.26
Epoxiconazole/metconazole	650.74	.	95.45	3,412.06	.	4,158.25	2,910.12	475.08
Epoxiconazole/prochloraz	93.90	.	.	963.83	.	1,057.73	1,057.73	409.01
Fenpropimorph	.	.	.	158.94	.	158.94	124.76	36.53
Fenpropimorph/flusilazole	.	.	196.16	46.62	.	242.77	112.00	129.88
Fluoxastrobin/prothioconazole	.	.	.	232.72	.	232.72	162.80	52.53
Fluxapyroxad	.	.	29.77	314.50	.	344.27	307.19	23.50
Folpet	.	.	14.88	191.88	.	206.76	184.57	108.12
Penthiopyrad	.	.	.	1,351.82	.	1,351.82	1,171.53	254.33
Prochloraz/tebuconazole	.	.	.	426.52	.	426.52	426.52	137.70
Proquinazid	.	.	.	631.27	.	631.27	631.27	16.49
Prothioconazole	.	.	121.78	1,556.86	62.16	1,740.79	1,291.16	220.57
Prothioconazole/tebuconazole	.	228.85	44.65	3,063.98	.	3,337.48	2,353.75	606.46
Prothioconazole/trifloxystrobin	.	.	121.78	548.63	.	670.40	670.40	148.54
Pyraclostrobin	.	.	.	1,284.64	.	1,284.64	1,284.64	201.25
Spiroxamine/tebuconazole	.	.	.	67.65	.	67.65	67.65	32.00
Tebuconazole	77.35	.	.	1,133.97	.	1,211.31	1,018.95	176.48
All fungicides	***2294.12***	***457.70***	***1,108.96***	***36,449.77***	***124.31***	***40,434.86***	***.***	***11,837.37***

Table 16 cont: **Winter wheat: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	General weed control	Harvest aid	Ground Desiccation	Ground preparation	Volunteer Chickweed	Volunteer oats	Wild oats	Headlands	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants											
Bromoxynil/ioxynil	40.59	.	.	.	.	.	.	.	40.59	40.59	16.24
Chlorotoluron/diflufenican	328.53	.	.	.	.	.	.	.	328.53	328.53	628.71
Dicamba/mecoprop-P	93.90	.	.	.	.	.	.	.	93.90	93.90	80.28
Diflufenican	1325.96	.	.	.	.	.	.	.	1,325.96	1,325.96	106.90
Diflufenican/flufenacet	34.19	.	.	.	.	.	.	.	34.19	34.19	6.15
Diflufenican/flufenacet	1103.93	.	.	.	.	.	.	.	1,103.93	1,103.93	223.20
Diflufenican/iodosulfron-methyl-sodium/mesosulfuron-methyl	3521.61	.	.	.	.	.	.	.	3,521.61	3,521.61	204.90
Florasulam/fluroxypyr	837.47	.	.	.	50.08	.	.	.	887.55	854.29	92.30
Florasulam/Pyroxsulam	285.92	.	.	.	.	.	.	.	285.92	285.92	6.08
Flufenacet/pendimethalin	659.89	.	.	.	.	.	.	.	659.89	659.89	701.62
Flufenacet/pendimethalin	564.62	.	.	.	.	.	.	.	564.62	564.62	535.69
Fluroxypyr	1695.23	.	506.13	.	54.39	.	.	.	2,255.75	2,175.87	428.53
Glyphosate	.	124.31	2,852.80	1,623.02	.	.	.	195.39	4,795.53	4,312.08	3,418.49
Iodosulfron-methyl-sodium	5.41	.	.	.	.	.	.	.	5.41	5.41	0.04
iodosulfron-methyl-sodium/mesosulfuron-methyl	202.93	.	.	.	.	.	.	.	202.93	174.52	1.80
Isoproturon	53.97	.	.	.	.	.	.	.	53.97	53.97	80.95
Isoproturon/pendimethalin	65.39	.	.	.	.	.	.	.	65.39	65.39	36.78
Mecoprop-P	813.62	.	.	.	69.93	.	.	.	883.54	883.54	627.88
Metsulfuron-methyl	277.14	.	.	.	.	.	.	.	277.14	277.14	1.47
Metsulfuron-methyl/Thifensulfuron-methyl	208.86	.	.	.	.	.	.	.	208.86	208.86	6.39
Pendimethalin	235.62	.	.	.	.	.	.	.	235.62	235.62	173.97
Pendimethalin/picolinafen	126.37	.	.	.	.	.	.	.	126.37	126.37	122.19
Pinoxaden	93.90	.	.	.	.	1,034.37	127.64	.	1,255.91	1,222.65	37.59
Prosulfocarb	379.82	.	.	.	.	.	.	.	379.82	379.82	682.83
Thifensulfuron-methyl/tribenuron-methyl	698.69	.	.	.	.	.	.	.	698.69	698.69	13.22
All herbicides & desiccants	***13653.55***	***124.31***	***3,358.93***	***1,623.02***	***174.39***	***1,034.37***	***127.64***	***195.39***	***20,291.61***	***.***	***8,234.20***

Table 16 cont: **Winter wheat: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	Cereal aphids	Leatherjackets	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides						
Alpha-cypermethrin	329.13	.	97.39	426.52	426.52	6.40
Chlorpyrifos	33.26	60.09	92.10	185.45	185.45	120.85
Cypermethrin	19.98	.	.	19.98	19.98	0.50
Deltamethrin	320.10	.	.	320.10	320.10	1.96
Dimethoate	262.07	.	.	262.07	262.07	73.86
Esfenvalerate	2828.53	.	.	2,828.53	2,015.04	11.24
Lambda-cyhalothrin	2201.79	.	239.75	2,441.54	2,042.79	11.94
	5994.86	***60.09***	***429.24***	***6,484.19***	**.**	***226.75***

	Slugs	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Molluscicides				
Methiocarb	367.22	367.22	367.22	40.84
All molluscicides	***367.22***	***367.22***	**.**	***40.84***

	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Chlormequat	5008.03	5008.03	4,582.36	4,688.67
Chlormequat with choline chloride	208.06	208.06	208.06	232.03
Chlormequat/Imazaquin	637.25	637.25	637.25	291.66
2-chloroethylphosphonic acid	399.26	399.26	399.26	92.42
Trinexapac-ethyl	3162.35	3162.35	2,985.53	169.79
All growth regulators	***9414.94***	***9414.94***	**.**	***5,474.56***

Table 17: Spring oats: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Disease prevention	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides					
Boscalid/Epoxiconazole	.	52.95	52.95	52.95	1.59
Epoxiconazole	.	52.95	52.95	52.95	2.64
Epoxiconazole/fenpropimorph	35.50	.	35.50	35.50	17.79
Epoxiconazole/fenpropimorph/kresoxim-methyl	.	184.51	184.51	184.51	55.35
Epoxiconazole/fenpropimorph/metrafenone	.	81.26	81.26	62.99	35.89
Epoxiconazole/metconazole	.	23.70	23.70	23.70	1.54
Fenpropimorph	93.33	363.10	456.44	403.48	169.70
Fenpropimorph/pyraclostrobin	.	324.84	324.84	254.67	132.39
Metrafenone	.	23.70	23.70	23.70	0.71
Proquinazid	.	156.68	156.68	156.68	4.89
Prothioconazole	53.98	.	53.98	53.98	6.67
Prothioconazole/tebuconazole	.	237.46	237.46	237.46	23.46
Pyraclostrobin	.	110.81	110.81	110.81	13.72
Tebuconazole	.	190.84	190.84	190.84	34.69
All fungicides	***182.82***	***1,802.82***	***1,985.64***	***.***	***501.02***

Pesticide type & formulation	General weed control	Desiccation	Ground preparation	Chickweed and cleavers	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants							
Diflufenican	140.07	.	.	.	140.07	140.07	11.51
Florasulam/fluroxypyr	.	.	.	112.00	112.00	112.00	4.89
Fluroxypyr	737.80	.	.	.	761.50	761.50	104.45
Glyphosate	.	393.88	488.67	.	882.54	680.56	745.82
MCPA	60.37	.	.	.	60.37	60.37	54.71
Mecoprop-P	338.21	.	.	.	338.21	338.21	355.25
Metsulfuron-methyl	344.21	.	.	.	344.21	344.21	2.07
Metsulfuron-methyl/tribenuron-methyl	567.29	.	.	.	567.29	567.29	5.55
Thifensulfuron-methyl/tribenuron-methyl	237.46	.	.		237.46	237.46	6.46
All herbicides & desiccants	***2,425.40***	***393.88***	***488.67***	***112.00***	***3,443.65***	***.***	***1,290.70***

Pesticide type & formulation	Cereal aphids	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides					
Cypermethrin	18.27	.	18.27	18.27	0.46
Deltamethrin	.	80.03	80.03	80.03	0.50
Esfenvalerate	130.67	.	130.67	130.67	0.59
Lambda-cyhalothrin	163.77	.	163.77	163.77	0.81
All insecticides	***312.70***	***80.03***	***392.73***	***.***	***2.36***

Table 17 cont: **Spring oats: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Chlormequat	550.16	550.16	427.04	503.16
2-chloroethylphosphonic acid	18.27	18.27	18.27	1.75
Ethephon	18.27	18.27	18.27	2.63
Mepiquat chloride/Prohexadione-calcium	184.51	184.51	184.51	25.83
Trinexapac-ethyl	757.78	757.78	687.62	33.31
All growth regulators	***1,528.99***	***1,528.99***	**.**	***566.69***

Table 18: Undersown spring oats: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	General weed control	Growth regulation	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides						
Fenpropimorph	.	.	97.59	97.59	97.59	58.55
	.	***.***	***97.59***	***97.59***		***58.55***
Herbicides & desiccants						
Tribenuron-methyl	97.59	.	.	97.59	97.59	0.44
All herbicides & desiccants	***97.59***	***.***	***.***	***97.59***		***0.44***
Growth regulators						
Chlormequat	.	48.79	.	97.59	97.59	164.68
All growth regulators	***.***	***48.79***	***.***	***97.59***	***.***	***164.68***

Table 19: Winter oats: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Disease prevention	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides					
Boscalid/Epoxiconazole	.	119.15	119.15	119.15	21.45
Chlorothalonil	.	310.57	310.57	204.66	159.54
Epoxiconazole	56.49	119.15	175.63	175.63	11.53
Epoxiconazole/fenpropimorph/kresoxim-methyl	.	54.81	54.81	54.81	21.92
Epoxiconazole/fenpropimorph/metrafenone	.	409.19	409.19	254.62	229.50
Fenpropimorph	.	524.40	524.40	286.11	106.91
Fenpropimorph/pyraclostrobin	.	54.81	54.81	54.81	26.03
Fluoxastrobin/prothioconazole	.	43.94	43.94	43.94	9.08
Proquinazid	.	68.58	68.58	68.58	2.72
Prothioconazole/tebuconazole	.	119.15	119.15	119.15	14.89
Pyraclostrobin	.	136.36	136.36	136.36	15.84
Tebuconazole	.	137.15	137.15	68.58	18.64
All fungicides	***56.49***	***2097.25***	***2153.73***	***.***	***638.05***

Pesticide type & formulation	General weed control	Cleavers	Desiccation	Ground preparation	Headland	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants								
Carfentrazone-ethyl/flupyrsulfron-methyl	245.50	.	.	.	.	245.5	245.50	6.70
Dicamba/mecoprop-P	16.14	.	.	.	.	16.14	16.14	13.63
Diflufenican/flufenacet	35.74	.	.	.	.	35.74	35.74	6.43
Florasulam/fluroxypyr	43.57	54.81	.	.	.	98.38	98.38	9.74
Flumioxazine	68.58	.	.	.	.	68.58	68.58	2.04
Flupyrsulfuron-methyl/Thifensulfuron-methyl	119.15	.	.	.	.	119.15	119.15	5.96
Fluroxypyr	24.21	.	.	.	.	24.21	24.21	3.59
Glyphosate	.	.	270.37	79.32	16.14	365.83	330.09	263.82
Mecoprop-P	178.90	.	.	.	.	178.9	178.90	155.45
Metsulfuron-methyl	29.05	.	.	.	.	29.05	29.05	0.17
Metsulfuron-methyl/Thifensulfuron-methyl	133.71	.	.	.	.	133.71	133.71	3.82
Thifensulfuron-methyl/tribenuron-methyl	119.15	.	.	.	.	119.15	119.15	2.68
All herbicides & desiccants	***1013.70***	***54.81***	***270.37***	***79.32***	***16.14***	***1434.34***	***.***	***474.03***

Pesticide type & formulation	Cereal aphids	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides				
Lambda-cyhalothrin	220.67	220.67	220.67	1.09
Pirimicarb	68.58	68.58	68.58	9.15
All insecticides	***289.25***	***289.25***	***.***	***10.24***

Table 19 cont: **Winter oats: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Chlormequat	556.33	556.33	426.21	485.91
Mepiquat chloride/Prohexadione-calcium	228.76	228.76	173.96	38.12
Trinexapac-ethyl	92.78	92.78	92.78	4.59
All growth regulators	***877.88***	***877.88***	**.**	***528.62***

Table 20: Winter oilseed rape: pesticide-treated area (spray hectares), quantities of pesticides applied (kilograms) and reason for use.

Pesticide Type & Formulation	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides				
Azoxystrobin	358.71	358.71	358.71	39.47
Fluoxastrobin/prothioconazole	13.92	13.92	13.92	1.39
Prothioconazole	651.95	651.95	426.63	57.39
Prothioconazole/tebuconazole	23.46	23.46	23.46	5.87
Tebuconazole	174.00	174.00	160.09	37.72
All fungicides	***1,222.04***	***1,222.04***	***.***	***141.83***

Pesticide Type & Formulation	General weed control	Desiccation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants					
Clopyralid/picloram	13.92	.	13.92	13.92	1.53
Glyphosate	.	426.63	426.63	426.63	654.95
Metazachlor	78.25	.	78.25	78.25	75.40
Propaquizafop	101.72	.	101.72	101.72	10.87
Propyzamide	382.18	.	382.18	382.18	258.95
All herbicides	***576.06***	***426.63***	***1,002.69***	***.***	***1,001.69***

Pesticide Type & Formulation	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides				
Lambda-cyhalothrin	92.52	92.52	92.52	0.69
All insecticides	***92.52***	***92.52***	***.***	***0.69***

Pesticide type & formulation	Slugs	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Molluscicides				
Methiocarb	467.26	467.26	255.85	44.55
All molluscicides	***467.26***	***467.26***	***.***	***44.55***

Table 21: Spring oilseed rape: pesticide-treated area (spray hectares), quantities of pesticides applied (kilograms) and reason for use.

Pesticide Type & Formulation	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides				
Tebuconazole	22.88	22.88	22.88	4.29
All fungicides	***22.88***	***22.88***	***.***	***4.29***

Pesticide Type & Formulation	General weed control	Desiccation	Ground preparation	Cleavers	Scutch	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants								
Clomazone	21.90	.	.	.	.	21.90	21.90	0.98
Clopyralid/picloram	.	.	.	22.88	.	22.88	22.88	2.68
Diquat	.	22.88	.	.	.	22.88	22.88	9.15
Glyphosate	.	44.39	22.88	.	.	67.27	67.27	77.41
Metazachlor	67.27	.	.	.	.	67.27	67.27	41.16
Unknown herbicide	.	.	.	.	21.90	21.90	21.90	.
All herbicides & desiccants	***89.17***	***67.27***	***22.88***	***22.88***	***21.90***	***224.11***	***.***	***131.38***

Table 22: Peas & beans: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	General weed control	Ground preparation	General insect control	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides							
Azoxystrobin	.	.	.	44.4	44.4	44.4	7.81
Tebuconazole	.	.	.	88.80	88.80	44.4	17.11
All fungicides	***.***	***.***	***.***	***133.20***	***133.20***	***.***	***24.93***
Herbicides & desiccants							
Bentazone	44.40	.	.	.	44.40	44.4	16.58
Glyphosate	.	9.91	.	.	9.91	9.91	3.57
Pendimethalin	44.40	.	.	.	44.40	44.4	57.88
All herbicides & desiccants	***88.80***	***9.91***	***.***	***.***	***98.71***	***.***	***78.03***
Insecticides							
Lambda-cyhalothrin	.	.	44.40	.	44.40	44.4	0.33
All insecticides	***88.80***	***9.91***	***44.40***	***133.20***	***276.31***	***.***	***103.28***

Table 23: Early potatoes: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Blight	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides				
Ametoctradin/Dimethomorph	22.82	22.82	11.41	9.58
Benthiavalicarb-isopropyl/mancozeb	42.38	42.38	42.38	45.61
Cyazofamid	191.96	191.96	42.38	9.97
Fenamidone/propamocarb hydrochloride	100.20	100.20	25.05	90.18
Fluazinam	403.54	403.54	102.90	78.59
Mancozeb	393.05	393.05	75.73	628.87
Mandipropamid	25.05	25.05	25.05	2.50
All fungicides	***1,179.00***	***1,179.00***	***.***	***865.31***

Pesticide type & formulation	General weed control	Desiccation	Ground preparation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants						
Carfentrazone-ethyl	.	12.47	.	12.47	12.47	0.75
Diquat	89.26	.	.	89.26	89.26	37.98
Glyphosate	25.05	.	77.85	102.90	102.90	63.37
Linuron	11.41	.	.	11.41	11.41	10.27
Metribuzin	102.90	.	.	102.90	102.90	80.65
Prosulfocarb	11.41	.	.	11.41	11.41	36.51
All herbicides & desiccants	***240.02***	***12.47***	***77.85***	***330.33***	***.***	***229.53***

Pesticide type & formulation	Aphids	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides				
Lambda-cyhalothrin	37.40	37.40	37.40	0.28
All insecticides	***37.40***	***37.40***	***.***	***0.28***

Table 24: Maincrop & seed potatoes: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.

Pesticide type & formulation	Blight	General fungal control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Fungicides					
Ametoctradin/Dimethomorph	1,857.17	.	1,857.17	1,092.56	901.50
Azoxystrobin	.	478.66	478.66	478.66	119.67
Benthiavalicarb-isopropyl/mancozeb	1,482.48	.	1,482.48	790.09	1,692.41
Cyazofamid	3,745.95	.	3,745.95	1,967.37	291.86
Cymoxanil	522.12	.	522.12	461.52	49.17
Cymoxanil/mancozeb	3,398.96	.	3,398.96	1,203.97	4,948.06
Dimethomorph/mancozeb	2,449.62	.	2,449.62	1,048.53	3,861.94
Fenamidone/propamocarb hydrochloride	2,755.18	.	2,755.18	1,539.52	2,445.56
Fluazinam	10,233.68	.	10,233.68	3,134.27	1,920.14
Fluopicolide/propamocarb hydrochloride	3,279.42	.	3,279.42	1,280.52	3,536.72
Mancozeb	317.12	.	317.12	177.79	495.95
Mancozeb/zoxamide	219.92	.	219.92	131.49	296.89
Mandipropamid	5,621.96	.	5,621.96	1,797.85	758.64
All fungicides	***35,883.57***	***478.66***	***36,362.23***	***.***	***21,318.51***

Pesticide type & formulation	General weed control	Scutch	Desiccation	Ground preparation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Herbicides & desiccants							
Carfentrazone-ethyl	.	.	836.97	.	836.97	836.97	50.22
Diquat	1,675.73	.	4,259.77	.	5,935.50	3,244.24	2,302.77
Glyphosate	805.14	.	.	1,042.25	1,847.39	1,806.86	1,308.95
Linuron	537.17	.	.	.	537.17	537.17	312.40
Metribuzin	3,003.42	.	.	.	3,003.42	3,003.42	2,279.46
Propaquizafop	.	5.01	.	.	5.01	5.01	0.50
Prosulfocarb	611.55	.	.	.	611.55	611.55	1,290.22
Rimsulfuron	132.10	.	.	.	132.10	132.10	1.40
All herbicides & desiccants	***6,765.12***	***5.01***	***5,096.74***	***1,042.25***	***12,909.11***	***.***	***7,545.92***

Pesticide type & formulation	Aphids	Wireworm	Cutworm	General insect control	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Insecticides							
Chlorpyrifos	.	132.13	120.79	.	252.92	252.92	227.63
Esfenvalerate	256.68	.	.	67.1	323.79	195.45	1.30
Flonicamid	101.33	.	.	.	101.33	50.67	8.11
Lambda-cyhalothrin	616.09	.	.	97.0	713.06	591.87	4.67
All insecticides	***974.10***	***132.13***	***120.79***	***164.1***	***1,391.1***	***.***	***241.7***

Table 24 cont: **Maincrop & seed potatoes: pesticide-treated area (spray hectares), weights of pesticides applied (kilograms) and reason for use.**

Pesticide type & formulation	Slugs	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Molluscicides				
Methiocarb	478.66	478.66	478.66	38.29
All molluscicides	***478.66***	***478.66***	**.**	***38.29***

Pesticide type & formulation	Growth regulation	All reasons	Basic area (ha) of treatment	Quantity (kgs)
Growth regulators				
Maleic hydrazide	93.04	93.04	93.04	279.12
All growth regulators	***93.04***	***93.04***	**.**	***279.12***

Table 25: The area of arable crops grown (hectares) in Northern Ireland, 1990-2014.

	Survey Year												
Crop	**1990**	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**
Cereals													
Spring barley	29,893	24,729	20,890	21,256	23,066	23,901	22,658	21,959	17,573	18,742	16,967	19,702	16,417
Undersown barley	5,800	5,759	6,542	4,875	4,035	3,532	1,876	599	654	803	591	508	430
Winter barley	3,670	5,721	5,832	7,166	7,720	5,194	3,922	4,535	4,599	6,149	6,767	5,323	6,709
Spring wheat	348	136	32	129	400	863	1,428	1,523	1,517	1,552	1,686	1,500	604
Undersown wheat	27	.	42	.	.	.	.	.	.	.	58	48	.
Winter wheat	5,827	6,839	6,952	6,543	6,745	4,125	5,807	7,111	7,203	10,553	9,151	7,846	7,894
Spring oats	2,220	1,257	953	858	978	1,920	804	903	991	778	1,441	1,441	1,341
Undersown oats	117	221	337	130	102	25	20	234	71	.	49	193	98
Winter oats	673	1,008	1,125	1,481	1,523	967	1,547	1,556	875	1,640	841	246	648
All cereals	***48,575***	***45,670***	***42,704***	***42,438***	***44,569***	***40,528***	***38,062***	***38,420***	***33,482***	***40,217***	***37,551***	***36,807***	***34,140***
Spring oilseed rape	15	31	287	66	237	.	111	.	.	.	.	517	67
Winter oilseed rape	891	1,032	323	127	502	.	.	.	.	.	.	290	427
All oilseed rape *	906	1,063	610	193	739	131	111	255	471	439	446	807	494
Hemp	.	.	.	.	.	.	.	.	.	40	.	.	.
Linseed	.	158	.	.	.	.	14	.	.	2	.	.	.
Maize	.	45	.	.	.	.	.	.	.	.	.	.	.
Peas & beans	.	.	.	.	199	273	197	212	83	55	85	10	54
Triticale	37	.	.	.	17	64	49	182	12	82	5	.	390
Lupins	.	.	.	.	.	.	67	10	19	.	.	.	.
Camelina	.	.	.	.	.	.	.	.	.	.	.	81	.
Set-aside	.	.	.	.	.	2,451	3,013	3,394	2,284	.	.	.	.
Potatoes													
Seed potatoes	3,509	3,688	1,678	1,798	1,607	.	1,239	1,148	763	792	707	555	.
Early potatoes	463	836	813	729	391	.	728	403	370	401	191	192	155
Maincrop potatoes	7,863	6,540	5,913	5,961	5,515	.	4,741	4,517	3,984	4,308	4,041	3,403	.
Maincrop & seed potatoes	11,372	10,228	7,591	7,759	7,122	.	5,980	5,665	4,748	5,100	4,748	3,958	3,610
All potatoes	***11,835***	***11,064***	***8,404***	***8,488***	***7,513***	***.***	***6,708***	***6,068***	***5,118***	***5,501***	***4,939***	***4,150***	***3,765***
All crops	***61,355***	***57,999***	***51,718***	***51,119***	***53,036***	*****43,447***	***48,222***	***48,541***	***41,469***	***46,337***	***43,027***	***41,856***	***38,843***

*** both winter & spring oilseed rape** ****excluding potatoes**

Table 25 cont: **Comparison of the area of arable crops grown (hectares) in Northern Ireland, 1990-2014.**

	Differences between:											
Crop	**2014-90**	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Cereals												
Spring barley	-45%	-34%	-21%	-23%	-29%	-31%	-28%	-25%	-7%	-12%	-3%	-17%
Undersown barley	-93%	-93%	-93%	-91%	-89%	-88%	-77%	-28%	-34%	-47%	-27%	-15%
Winter barley	83%	17%	15%	-6%	-13%	29%	71%	48%	46%	9%	-1%	26%
Spring wheat	74%	344%	1788%	368%	51%	-30%	-58%	-60%	-60%	-61%	-64%	-60%
Undersown wheat	.	.	.	.	.	.	.	.	.	.	.	.
Winter wheat	35%	15%	14%	21%	17%	91%	36%	11%	10%	-25%	-14%	1%
Spring oats	-40%	7%	41%	56%	37%	-30%	67%	48%	35%	72%	-7%	-7%
Undersown oats	-17%	-56%	-71%	-25%	-4%	283%	388%	-58%	37%	.	99%	-49%
Winter oats	-4%	-36%	-42%	-56%	-57%	-33%	-58%	-58%	-26%	-61%	-23%	163%
All cereals	***-30%***	***-25%***	***-20%***	***-20%***	***-23%***	***-16%***	***-10%***	***-11%***	***2%***	***-15%***	***-9%***	***-7%***
Spring oilseed rape	348%	117%	-77%	2%	-72%	.	-39%	.	.	.	.	-87%
Winter oilseed rape	-52%	-59%	32%	236%	-15%	.	.	.	.	.	.	47%
All oilseed rape *	-45%	-54%	-19%	156%	-33%	277%	345%	94%	5%	12%	11%	-39%
Hemp	.	.	.	.	.	.	.	.	.	.	.	.
Linseed	.	.	.	.	.	.	.	.	.	.	.	.
Maize	.	.	.	.	.	.	.	.	.	.	.	.
Peas & beans	.	.	.	.	-73%	-80%	-72%	-74%	-34%	-2%	-36%	424%
Triticale	954%	.	.	.	2248%	510%	696%	115%	3205%	377%	7702%	
Lupins	.	.	.	.	.	.	.	.	.	.	.	.
Camelina	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.
Set-aside	.	.	.	.	.	.	.	.	.	.	.	.
Potatoes												
Seed potatoes												
Early potatoes	-67%	-81%	-81%	-79%	-60%	.	-79%	-61%	-58%	-61%	-19%	-19%
Maincrop potatoes												
Maincrop & seed potatoes	-68%	-65%	-52%	-53%	-49%	.	-40%	-36%	-24%	-29%	-24%	-9%
All potatoes	***-68%***	***-66%***	***-55%***	***-56%***	***-50%***	***.***	***-44%***	***-38%***	***-26%***	***-32%***	***-24%***	***-9%***
All crops	***-37%***	***-33%***	***-25%***	***-24%***	***-27%***	***.***	***-19%***	***-20%***	***-6%***	***-16%***	***-10%***	***-7%***

Table 26: **The area (spray hectares) of arable crops treated with pesticides in Northern Ireland, 1990-2014.**

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	102,594	106,290	114,972	121,833	141,099	.	127,435	139,474	123,125	159,738	147,957	157,255	140,704
Herbicides & desiccants	75,130	76,444	72,725	81,027	91,193	.	86,597	104,539	94,148	116,029	102,211	113,487	105,371
Insecticides													
Carbamates	.	*111*	*167*	*520*	*297*	.	*594*	*592*	*30*	*558*	*59*	*112*	*140*
Organochlorines	.	*79*	*255*	*222*	.	.	.	.	.	.	.	.	.
Organophosphates	*1,472*	*2,454*	*2,124*	*3,085*	*1,587*	.	*1,265*	*2,423*	*1,818*	*1,164*	*1,163*	*2,405*	*2,736*
Pyrethroids	*2,895*	*2,800*	*3,267*	*7,706*	*17,084*	.	*18,164*	*26,973*	*25,055*	*35,936*	*26,467*	*26,827*	*20,711*
Azomethine	.	.	.	.	.	.	.	*673*	*71*	.	.	*272*	.
Neonicotinoid	.	.	.	.	.	.	.	.	*96*	.	*78*	*274*	.
Feeding blocker	.	.	.	.	.	.	.	.	.	*252*	*77*	*66*	*101*
Mixed Formulations	.	.	.	.	.	.	.	*581*	*96*	.	*129*	.	.
Unknown insecticides	*465*	*694*	*207*	*815*	*1,238*	.	.	*180*	*89*	.	.	*74*	.
All insecticides	4,831	6,138	6,020	12,348	20,206	.	20,023	31,421	27,255	37,910	27,974	30,030	23,689
Molluscicides	834	871	243	434	1,123	.	1,926	337	1,237	1,277	816	3,642	1,387
Growth regulators	8,681	10,594	12,836	13,953	19,049	.	17,445	16,559	19,572	22,408	23,983	31,670	31,265
Other	.	.	.	.	.	.	.	.	.	89	210	664	633
Mixed formulations	233	186	134	137	128	.	86	.	.	.	.	.	.
Seed treatments	42,683	44,961	39,026	38,979	36,083	.	34,636	32,968	30,298	36,756	34,184	38,098	32,167
All pesticides	***234,985***	***245,485***	***245,971***	***268,710***	***308,881***	**.**	***288,348***	***325,299***	***295,635***	***374,207***	***337,336***	***374,845***	***335,215***
Area grown (ha)	61,355	57,999	51,718	51,119	53,036	.	48,222	48,541	41,469	46,337	43,027	41,823	38,843

Table 26 cont: **Comparison of the area (spray hectares) of arable crops treated with pesticides in Northern Ireland, 1990-2014.**

		Differences between:										
Pesticide type	**2014-90**	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Fungicides		**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Herbicides & desiccants	37%	32%	22%	15%	-0.3%	.	10%	1%	14%	-12%	-5%	-11%
Insecticides	40%	38%	45%	30%	16%	.	22%	1%	12%	-9%	3%	-7%
Carbamates												
Organochlorines												
Organophosphates	.	26%	-16%	-73%	-53%	.	-76%	-76%	366%	-75%	137%	25%
Pyrethroids	.	.	.	.	.	.	.	.	.	.	.	.
Azomethine	86%	11%	29%	-11%	72%	.	116%	13%	51%	135%	135%	14%
Neonicotinoid	615%	640%	534%	169%	21%	.	14%	-23%	-17%	-42%	-22%	-23%
Feeding blocker	.	.	.	.	.	.	.	.	.	.	.	.
Mixed Formulations	.	.	.	.	.	.	.	.	.	.	.	.
Unknown insecticides	.	.	.	.	.	.	.	.	.	-60%	32%	54%
		.	.	.	.	.	.	.	.	.	.	.
All insecticides	.	.	.	.	.	.	.	.	.	.	.	.
Molluscicides	390%	286%	293%	92%	17%	.	18%	-25%	-13%	-38%	-15%	-21%
Growth regulators	66%	59%	471%	219%	24%	.	-28%	311%	12%	9%	70%	-62%
Other		195%	144%	124%	64%	.	79%	89%	60%	40%	30%	-1%
Mixed formulations	.	.	.	.	.	.	.	.	.	611%	201%	-5%
Seed treatments	.	.	.	.	.	.	.	.	.	.	.	.
All pesticides	-25%	-28%	-18%	-17%	-11%	.	-7%	-2%	6%	-12%	-6%	-16%
Area grown (ha)	43%	37%	36%	25%	9%	.	16%	3%	13%	-10%	-1%	-11%
	-37%	-33%	-25%	-24%	-27%	.	-19%	-20%	-6%	-16%	-10%	-7%

Table 27: The quantity (tonnes) of pesticides applied to arable crops in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	97.57	101.76	90.99	94.22	91.06	.	85.20	71.13	67.26	77.32	67.88	58.70	53.19
Herbicides & desiccants	253.62	212.36	133.57	336.33	337.65	.	390.98	254.62	152.13	71.58	50.75	52.12	45.69
Insecticides													
Carbamates	.	*0.02*	*0.02*	*0.07*	*0.04*	.	*0.08*	*0.08*	*0.004*	*0.075*	*0.008*	*0.01571*	*0.01823*
Organochlorines	.	*0.09*	*0.29*	*0.23*	.	.	.	.	.	.	.	.	.
Organophosphates	*0.68*	*0.80*	*0.85*	*1.51*	*0.87*	.	*0.57*	*1.07*	*1.373*	*0.786*	*0.733*	*1.29359*	*1.92897*
Pyrethroids	*0.05*	*0.05*	*0.07*	*0.15*	*0.19*	.	*0.20*	*0.20*	*0.163*	*0.295*	*0.163*	*0.19192*	*0.1029*
Azomethine	.	.	.	.	.	.	.	*0.10*	*0.005*	.	.	*0.0433*	.
Neonicotinoid	.	.	.	.	.	.	.	.	*0.009*	.	*0.006*	*0.02114*	.
Feeding blocker	.	.	.	.	.	.	.	.	.	*0.02*	*0.006*	*0.00528*	*0.00811*
Mixed Formulations	.	.	.	.	.	.	.	*0.05*	*0.016*	.	*0.01*	.	.
Unknown Insecticide	.	.	.	.	.	.	.	*0.01*	.	.	.	*0.06*	.
All insecticides	0.72	0.96	1.23	1.95	1.10	.	0.85	1.51	1.57	1.18	0.93	1.63	2.09
Molluscicides	0.33	0.27	0.12	0.09	0.17	.	0.34	0.06	0.28	0.17	0.12	0.30	0.13
Growth regulators	10.60	9.35	10.86	12.84	14.43	.	11.61	11.70	12.63	17.00	14.33	16.59	14.76
Other	.	.	.	.	.	.	.	.	.	0.014	0.180	0.244	0.351
Mixed formulations	0.51	0.41	0.29	0.30	0.28	.	0.13	.	.	.	.	.	.
Seed treatments	0.38*	3.77	5.06	3.03	3.71	.	2.82	2.28	4.03	1.82	2.09	2.52	2.02
All pesticides	***363.74***	***328.89***	***242.12***	***448.78***	***448.40***	**.**	***491.93***	***341.30***	***237.89***	***169.06***	***136.28***	***132.10***	***118.24***
Area grown (ha)	61,355	57,999	51,718	51,119	53,036	.	48,222	48,541	41,469	46,337	43,027	41,823	38,843

Table 27 cont: **Comparison of the quantity (tonnes) of pesticides applied to arable crops in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides		-48%	-42%	-44%	-42%	.	-38%	-25%	-21%	-31%	-22%	-9%
Herbicides & desiccants	-82%	-78%	-66%	-86%	-86%	.	-88%	-82%	-70%	-36%	-10%	-12%
Insecticides												
Carbamates	.	-9%	-13%	-74%	-49%	.	-77%	-77%	356%	-76%	128%	16%
Organochlorines												
Organophosphates	184%	141%	127%	28%	122%	.	237%	80%	40%	145%	163%	49%
Pyrethroids	106%	106%	49%	-31%	-46%	.	-49%	-48%	-37%	-65%	-37%	-46%
Azomethine	.	.	.	.	.	.	.	.	.	.	.	.
Neonicotinoid	.	.	.	.	.	.	.	.	.	.	.	.
Feeding blocker	.	.	.	.	.	.	.	.	.	-59%	35%	54%
Mixed Formulations	.	.	.	.	.	.	.	.	.	.	.	.
Unknown Insecticide	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	191%	118%	70%	7%	91%	.	145%	39%	33%	78%	125%	28%
Molluscicides	-59%	-50%	13%	50%	-23%	.	-60%	123%	-53%	-21%	12%	-55%
Growth regulators	39%	58%	36%	15%	2%	.	27%	26%	17%	-13%	3%	-11%
Other		.	.	.	.	.	.	.	.	2407%	95%	44%
Mixed formulations	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	.	-46%	-60%	-33%	-46%	.	-28%	-11%	-50%	11%	-3%	-20%
All pesticides	***-67%***	***-64%***	***-51%***	***-74%***	***-74%***	***.***	***-76%***	***-65%***	***-50%***	***-30%***	***-13%***	***-10%***
Area grown (ha)	-37%	-33%	-25%	-24%	-27%	.	-19%	-20%	-6%	-16%	-10%	-7%

Table 28: **The area (spray hectares) of cereal crops treated with pesticides in Northern Ireland, 1990-2014.**

	Survey Year												
	1990	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	33,741	37,584	42,517	56,880	64,171	63,739	60,230	86,173	77,686	106,805	91,054	105,304	101,785
Herbicides & desiccants	52,342	52,872	56,201	63,072	72,911	71,281	69,752	82,884	77,378	95,133	83,268	94,335	90,806
Insecticides													
Carbamates	.	*88*	*167*	*493*	*249*	.	*182*	*120*	.	*127*	*59*	.	*140*
Organochlorines	.	*79*	*255*	*222*	.	.	.	.	.	.	.	.	.
Organophosphates	*1,164*	*2,359*	*1,857*	*2,447*	*1,440*	*3,773*	*1,140*	*2,058*	*1,751*	*1,164*	*1,164*	*2,405*	*2,483*
Pyrethroids	*2,381*	*2,670*	*3,267*	*7,047*	*16,481*	*23,617*	*16,709*	*24,258*	*23,328*	*34,701*	*24,909*	*26,036*	*19,500*
Unknown insecticides	*465*	*694*	*207*	*816*	*1,207*	*2,290*	.	*114*	*89*	.	.	*74*	
All insecticides	4,010	5,890	5,754	11,028	19,377	29,681	18,031	26,550	25,168	35,991	26,132	28,515	22,123
Molluscicides	24	.	27	168	129	833	305	223	307	493	324	466	442
Growth regulators	8,607	10,509	12,836	13,953	18,998	17,237	17,330	16,476	19,559	22,386	23,927	31,660	31,172
Other	.	.	.	.	.	.	.	.	.	89	.	425	162
Seed treatments	41,739	39,958	35,995	35,525	31,728	34,260	31,494	29,069	27,353	33,567	31,572	34,646	30,468
All pesticides	***140,465***	***146,819***	***153,330***	***180,624***	***207,314***	***217,031***	***197,144***	***241,374***	***227,451***	***294,463***	***256,277***	***295,351***	***276,957***
Area grown (ha)	48,575	45,670	42,703	42,438	44,570	40,528	38,062	38,420	33,482	40,217	37,551	36,807	34,140

Table 28 cont: **Comparison of the area (spray hectares) of cereal crops treated with pesticides in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides		171%	139%	79%	59%	60%	69%	18%	31%	-5%	12%	-3%
Herbicides & desiccants	73%	72%	62%	44%	25%	27%	30%	10%	17%	-5%	9%	-4%
Insecticides												
Carbamates	.	59%	-16%	-72%	-44%	.	-23%	16%	.	10%	137%	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	113%	5%	34%	1%	72%	-34%	118%	21%	42%	113%	113%	3%
Pyrethroids	719%	630%	497%	177%	18%	-17%	17%	-20%	-16%	-44%	-22%	-25%
Unknown insecticides	-100%	-100%	-100%	-100%	-100%	-100%	.	-100%	-100%	.	.	-100%
All insecticides	452%	276%	284%	101%	14%	-25%	23%	-17%	-12%	-39%	-15%	-22%
Molluscicides	1740%	.	1535%	163%	242%	-47%	45%	98%	44%	-10%	36%	-5%
Growth regulators	262%	197%	143%	123%	64%	81%	80%	89%	59%	39%	30%	-2%
Other		.	.	.	.	.	.	.	.	82%	.	-62%
Seed treatments	-27%	-24%	-15%	-14%	-4%	-11%	-3%	5%	11%	-9%	-3%	-12%
All pesticides	***97%***	***89%***	***81%***	***53%***	***34%***	***28%***	***40%***	***15%***	***22%***	***-6%***	***8%***	***-6%***
Area grown (ha)	-30%	-25%	-20%	-20%	-23%	-16%	-10%	-11%	2%	-15%	-9%	-7%

Table 29: The quantity (tonnes) of pesticides applied to cereal crops in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	14.97	18.43	14.96	24.52	22.82	13.32	15.18	19.15	20.21	32.17	27.62	31.11	30.84
Herbicides & desiccants	55.07	39.43	35.67	42.87	46.26	41.68	35.35	42.21	48.77	58.48	38.28	40.34	36.70
Insecticides													
Carbamates	.	*0.01*	*0.02*	*0.07*	0.03	.	0.03	*0.012*	.	0.014	0.008	.	0.018
Organochlorines	.	*0.09*	*0.29*	*0.23*	.	.	.	.	.	.	.	.	.
Organophosphates	*0.51*	*0.68*	*0.49*	1.24	0.74	2.51	0.56	*0.948*	*1.200*	*0.785*	*0.733*	*1.294*	*1.731*
Pyrethroids	*0.04*	*0.04*	*0.07*	*0.13*	*0.19*	*0.26*	*0.19*	*0.178*	*0.157*	*0.275*	*0.148*	*0.187*	*0.096*
Azomethine	.	.	.	.	.	.	.	.	.				
All insecticides	0.55	0.83	0.88	1.66	0.96	2.75	0.78	1.14	1.36	1.08	0.89	1.54	1.85
Molluscicides	0.01	.	0.01	0.04	0.02	0.14	0.06	0.04	0.04	0.07	0.03	0.04	0.05
Growth regulators	10.51	9.32	10.86	12.84	14.41	12.87	11.61	11.64	12.62	16.93	14.16	16.55	14.48
Other	.	.	.	.	.	.	.	.	.	0.01	.	0.04	0.004
Seed treatments	0.33	0.94	3.80	2.41	1.72	2.34	1.57	1.35	1.42	1.09	1.37	1.40	12.81
All pesticides	***81.44***	***68.94***	***66.17***	***84.35***	***86.19***	***73.11***	***64.35***	***75.55***	***84.41***	***109.83***	***82.35***	***91.04***	***85.21***
Area grown (ha)	48,575	45,670	42,703	42,438	44,570	40,528	38,062	38,420	33,482	40,217	37,551	36,807	34,140

Table 29 cont: **Comparison of the quantity (tonnes) of pesticides applied to cereal crops in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	.	67%	106%	26%	35%	132%	103%	61%	53%	-4%	12%	-1%
Herbicides & desiccants	-33%	-7%	3%	-14%	-21%	-12%	4%	-13%	-25%	-37%	-4%	-9%
Insecticides												
Carbamates	.	82%	-13%	-74%	-37%	.	-29%	52%	.	30%	128%	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	239%	155%	253%	40%	135%	-31%	212%	83%	44%	121%	136%	34%
Pyrethroids	139%	139%	39%	-26%	-50%	-63%	-51%	-46%	-39%	-65%	-35%	-49%
Azomethine												
All insecticides	236%	123%	111%	11%	93%	-33%	138%	62%	36%	72%	107%	20%
Molluscicides	410%	.	697%	27%	206%	-64%	-21%	27%	19%	-26%	82%	37%
Growth regulators	38%	55%	33%	13%	0%	13%	25%	24%	15%	-14%	2%	-13%
Other		.	.	.	.	.	.	.	.	-71%	.	-91%
Seed treatments	3783%	1263%	237%	432%	647%	448%	717%	849%	804%	1080%	835%	815%
All pesticides	***5%***	***24%***	***29%***	***1%***	***-1%***	***17%***	***32%***	***13%***	***1%***	***-22%***	***3%***	***-6%***
Area grown (ha)	-30%	-25%	-20%	-20%	-23%	-16%	-10%	-11%	2%	-15%	-9%	-7%

Table 30: **The area (spray hectares) of oilseed rape treated with pesticides in Northern Ireland, 1990-2014.**

	Survey Year												
	1990	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	467	525	86	226	664	244	70	238	646	737	1,337	1,265	1,245
Herbicides & desiccants	1,603	1,343	597	292	1,171	366	194	448	970	972	1,054	1,694	1,227
Insecticides													
Carbamates	.	.	.	.	*28.6*	.	.	.	.	.	.	*13*	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	*67*	*180*	*25*	*5.4*	.	.	.	.	.	.	.	.
Pyrethroids	.	*131*	.	.	*190*	.	*49*	*55*	*149*	*316*	*361*	*132*	*93*
Unknown insecticides	.	.	.	.	*10*	.	.	.	.	.	.	.	.
All insecticides	.	198	180	25	234	.	49	55	149	316	361	146	93
Molluscicides	810	871	216	72	522	.	39	.	68	120	.	270	467
Growth regulators	.	84	.	.	.	.	.	.	.	.	.	.	.
Other	.	.	.	.	.	.	.	.	.	.	210	239	471
Seed treatments	906	1,063	610	140	339	123	98	106	271	22	423	786	66
All pesticides	***3,786***	***4,084***	***1,689***	***755***	***2,931***	***732***	***450***	***846***	***2,104***	***2,167***	***3,360***	***4,400***	***3,569***
Area grown (ha)	906	1,062	610	193	739	131	111	255	471	439	446	807	494

Table 30 cont: **Comparison of the area (spray hectares) of oilseed rape treated with pesticides in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides		137%	1356%	451%	88%	411%	1668%	424%	93%	69%	-7%	-2%
Herbicides & desiccants	-23%	-9%	106%	320%	5%	235%	533%	174%	26%	26%	16%	-28%
Insecticides												
Carbamates	.	.	.	.	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	.	.	.	.	.	.	.	.	.	.	.
Pyrethroids	.	-29%	.	.	-51%	.	90%	68%	-38%	-71%	-74%	-30%
Unknown insecticides	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	.	-53%	-49%	270%	-60%	.	90%	69%	-38%	-71%	-74%	-36%
Molluscicides	-42%	-46%	116%	549%	-11%	.	1095%	.	587%	289%	.	73%
Growth regulators	.	.	.	.	.	.	.	.	.	.	.	.
Other		.	.	.	.	.	.	.	.	.	124%	97%
Seed treatments	-93%	-94%	-89%	-53%	-80%	-46%	-32%	-37%	-76%	202%	-84%	-92%
All pesticides	***-6%***	***-13%***	***111%***	***373%***	***22%***	***388%***	***693%***	***322%***	***70%***	***65%***	***6%***	***-19%***
Area grown (ha)	-45%	-53%	-19%	156%	-33%	277%	345%	94%	5%	12%	11%	-39%

Table 31: The quantity (tonnes) of pesticides applied to oilseed rape in Northern Ireland, 1990-2014.

	Survey Year												
	1990	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	0.53	0.06	0.03	0.30	0.60	0.64	0.01	0.03	0.10	0.12	0.27	0.18	0.15
Herbicides & desiccants	1.31	0.98	0.62	0.20	0.74	0.16	0.10	0.25	0.76	0.81	0.65	1.14	1.13
Insecticides													
Carbamates	.	.	.	.	*0.004*	.	.	.	.	.	.	*0.00195*	.
Organochlorines	.	.	.	.	*<0.001*	.	.	.	.	.	.	.	.
Organophosphates	.	*0.02*	*0.08*	*0.01*	*0.004*	.	.	.	.	.	.	.	.
Pyrethroids	.	*0.01*	.	.	*0.001*	.	*0.0001*	*0.0003*	*0.001*	*0.011*	*0.002*	*0.0008*	0.0007
All insecticides	.	0.03	0.08	0.01	0.009	.	0.0001	0.0003	0.001	0.011	0.003	0.0027	0.0007
Molluscicides	0.32	0.27	0.11	0.01	0.06	.	0.01	.	0.01	0.03	.	0.0224	0.0445
Growth regulators	.	0.04	.	.	.	.	.	.	.	.	.	.	
Other	.	.	.	.	.	.	.	.	.	.	.	.	0.35
Seed treatments	0.05	0.11	0.06	0.02	0.005	.	0.01	0.002	0.005	0.001	0.007	0.0105	0.0008
All pesticides	***2.21***	***1.49***	***0.90***	***0.54***	***1.41***	***0.81***	***0.13***	***0.28***	***0.88***	***0.96***	***1.11***	***1.55***	***1.67***
Area grown (ha)	906	1,062	610	193	739	131	111	255	471	439	446	807	494

Table 31 cont: **Comparison of the quantity (tonnes) of pesticides applied to oilseed rape in Northern Ireland, 1990-2014**

	Differences between:											
	2014-90	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides		144%	341%	-51%	-76%	-77%	1128%	387%	42%	26%	-46%	-19%
Herbicides & desiccants	-14%	16%	84%	467%	54%	608%	1057%	353%	49%	40%	74%	-0.2%
Insecticides												
Carbamates	.	.	.	.	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	.	.	.	.	.	.	.	.	.	.	.
Pyrethroids	.	-93%	.	.	-37%	.	588%	129%	-43%	-94%	-66%	-11%
All insecticides	.	-98%	-99%	-93%	-92%	.	588%	155%	-43%	-94%	-77%	-75%
Molluscicides	-86%	-84%	-60%	345%	-26%	.	328%	.	218%	65%	.	99%
Growth regulators	.	-100%	.	.	.	.	.	.	.	.	.	.
Other		.	.	.	.	.	.	.	.	.	.	.
Seed treatments	-98%	-99%	-99%	-96%	-83%	.	-94%	-63%	-85%	-24%	-89%	-93%
All pesticides	***-24%***	***12%***	***87%***	***210%***	***18%***	***106%***	***1147%***	***497%***	***90%***	***73%***	***51%***	***8%***
Area grown (ha)	-45%	-53%	-19%	156%	-33%	277%	345%	94%	5%	12%	11%	-39%

Table 32: The area (spray hectares) of peas and beans treated with pesticides in Northern Ireland, 1998-2014.

	Survey Year									Differences between:							
	1998	2000	2002	2004	2006	2008	2010	2012	2014	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha
Fungicides	314	138	302.7	676.7	19.0	8.0	296.0	.	133.2	-58%	-4%	-56%	-80%	601%	1565%	-55%	.
Herbicides & desiccants	444	199	241.1	321.5	120.0	63.0	137.0	20.7	98.7	-78%	-50%	-59%	-69%	-18%	57%	-28%	376%
Insecticides																	
Carbamates	*19*	*18.3*	*54.2*	.	.	.	.	.		.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
Organophosphates	*22*	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
Pyrethroids	*64*	.	*66.1*	*197.20*	*12.00*	*8.00*	*99.00*	.	44.4	-31%	.	-33%	-77%	270%	455%	-55%	.
Unknown insecticides	.	.	.	.				.		.	.	.	.	.	.	.	.
All insecticides	105	18.3	120.3	197.2	12.00	8.00	99.00	.	44.4	-58%	143%	-63%	-77%	270%	455%	-55%	.
Molluscicides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	.	105	137.9	15.1	.	8	72	.	.	.	.	.	.	.	.	.	.
All pesticides	***863***	***459.9***	***802***	***1,210.5***	***151.0***	***88.0***	***604.0***	***20.7***	***276.3***	***-68%***	***-40%***	***-66%***	***-77%***	***83%***	***214%***	***-54%***	***1234%***
Area grown (ha)	199	273	197	212	83	55	85	10	54	-73%	-80%	-73%	-74%	-35%	-2%	-36%	440%

Table 33: **The quantity (tonnes) of pesticides applied to peas and beans in Northern Ireland, 1998-2014.**

	Survey Year									Differences between:							
	1998	2000	2002	2004	2006	2008	2010	2012	2014	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes
Fungicides	0.20	0.05	0.1055	0.540	0.009	0.006	0.180	.	0.025	-87%	-53%	-76%	-95%	177%	315%	-86%	.
Herbicides & desiccants	0.41	0.20	0.2545	0.197	0.098	0.062	0.132	0.018	0.078	-81%	-60%	-69%	-60%	-20%	26%	-41%	333%
Insecticides																	
Carbamates	*0.003*	*0.005*	*0.003*	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	*0.002*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pyrethroids	*0.001*	.	*0.0002*	*0.001*	*0.0001*	*<0.0001*	*<0.0001*	.	0.0003	-67%	.	65%	-67%	230%	.	.	.
All insecticides	0.006	0.005	0.0032	0.001	0.0001	<0.0001	<0.0001	.	0.0003	-95%	-93%	-90%	-67%	230%	.	.	.
Molluscicides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	.	0.112	0.015	0.002	.	0.005	0.018	.	.	.	.	.	.	.	.	.	.
All pesticides	***0.614***	***0.367***	***0.3782***	***0.740***	***0.107***	***0.073***	***0.334***	***0.018***	***0.103***	***-83%***	***-72%***	***-73%***	***-86%***	***-4%***	***41%***	***-69%***	***473%***
Area grown (ha)	199	273	197	212	83	55	85	10	54	-73%	-80%	-73%	-74%	-35%	-2%	-36%	440%

Table 34: **The area (spray hectares) of set-aside treated with pesticides in Northern Ireland, 2000-2006.**

	Survey Year				Differences between:		
	2000	2002	2004	2006	2006-00	2006-02	2006-04
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	.	.	.	.	.	.	
Herbicides & desiccants	912	1,395	657	650	-29%	-53%	-1%
Insecticides							
Carbamates	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.
Organophosphates	.	.	.	*12*	.	.	.
Pyrethroids	.	.	.	*13*	.	.	.
All insecticides	.	.	.	25	.	.	.
Molluscicides	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.
Seed treatments	.	.	.	189	.	.	.
All pesticides	***912***	***1,395***	***657***	***864***	***-5%***	***-38%***	***31%***
Area grown (ha)	2,451	3,013	3,394	2,284	-7%	-24%	-33%

Table 35: The quantity (tonnes) of pesticides applied to set-aside in Northern Ireland, 2000-2006.

	Survey Year				Differences between:		
	2000	2002	2004	2006	2006-00	2006-02	2006-04
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	.	.	.	.	.	.	
Herbicides & desiccants	0.866	1.037	0.551	0.677	-22%	-35%	23%
Insecticides							
Carbamates	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.
Organophosphates	.	.	.	*0.009*	.	.	.
Pyrethroids	.	.	.	*0.0004*	.	.	.
All insecticides	.	.	.	0.0094	.	.	.
Molluscicides	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.
Seed treatments	.	.	.	0.003	.	.	.
All pesticides	***0.866***	***1.037***	***0.551***	***0.6894***	***-20%***	***-34%***	***25%***
Area grown (ha)	2,451	3,013	3,394	2,284	-7%	-24%	-33%

Table 36: The area (spray hectares) of potato crops treated with pesticides in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	68,384	68,178	72,369	64,727	75,933	.	66,810	52,149	45,397	52,189	55,289	50,685	37,541
Herbicides & desiccants	21,146	21,819	15,927	17,663	16,616	.	14,852	19,839	15,971	19,843	17,753	17,356	13,239
Insecticides													
Carbamates	.	*23*	.	*28*	.	.	*357*	*473*	*30*	*431*	.	98	
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	253
Organophosphates	*308*	*28*	*88*	*612*	*123*	.	*125*	*365*	*55*	.	.	.	
Pyrethroids	*512*	.	.	*656*	*353*	.	*1,340*	*2,408*	*1,553*	*913*	*1,094*	*438*	*1,074*
Azomethine	.	.	.	.	.	.	.	*673*	*71*	.	.	*272*	
Neonicotinoid	.	.	.	.	.	.	.	.	*96*	.	*78*	*274*	
Feeding blocker	.	.	.	.	.	.	.	.	.	*252*	*77*	*66*	*101*
Mixed Formulation	.	.	.	.	.	.	.	*581*	*96*	.	*129*	.	
Unknown insecticides	.	.	*14*	.	*20*	.	.	*66*	.	.	.	.	
All insecticides	820	51	102	1,295	492	.	1,823	4,565	1,900	1,595	1,379	1,369	1,428
Molluscicides	.	.	.	195	472	.	1,581	114	930	664	491	2,906	479
Mixed formulations	233	186	134	137	128	.	86	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	72	.	.	23	56	10	93
Seed treatments	*	3,738	2,420	3,314	4,017	.	3,071	3,679	2,756	3,158	2,117	2,666	1,632
All pesticides	***90,583***	***93,972***	***90,952***	***87,330***	***97,658***	***.***	***88,295***	***80,347***	***66,954***	***77,473***	***77,085***	***74,992***	***54,413***
Area grown (ha)	11,835	11,064	8,404	8,488	7,513	.	6,708	6,068	5,118	5,501	4,940	4,150	3,765

Table 36 cont: **Comparison of the area (spray hectares) of potato crops treated with pesticides in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides		-45%	-48%	-42%	-51%	.	-44%	-28%	-17%	-28%	-32%	-26%
Herbicides & desiccants	-37%	-39%	-17%	-25%	-20%	.	-11%	-33%	-17%	-33%	-25%	-24%
Insecticides												
Carbamates	.	.	.	.	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	-100%	-100%	-100%	-100%	-100%	.	-100%	-100%	-100%	.	.	.
Pyrethroids	110%	.	.	64%	204%	.	-20%	-55%	-31%	18%	-2%	145%
Azomethine	.	.	.	.	.	.	.	-100%	-100%	.	.	-100%
Neonicotinoid	.	.	.	.	.	.	.	.	-100%	.	-100%	-100%
Feeding blocker	.	.	.	.	.	.	.	.	.	-60%	32%	54%
Mixed Formulation												
Unknown insecticides												
All insecticides	74%	2701%	1307%	10%	190%	.	-22%	-69%	-25%	-10%	4%	4%
Molluscicides	.	.	.	145%	1%	.	-70%	320%	-49%	-28%	-3%	-84%
Mixed formulations	.	.	.	.	.	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	30%	.	.	305%	66%	815%
Seed treatments	.	-56%	-33%	-51%	-59%	.	-47%	-56%	-41%	-48%	-23%	-39%
All pesticides	***-40%***	***-42%***	***-40%***	***-38%***	***-44%***	***.***	***-38%***	***-32%***	***-19%***	***-30%***	***-29%***	***-27%***
Area grown (ha)	-68%	-66%	-55%	-56%	-50%	.	-44%	-38%	-26%	-32%	-24%	-9%

Table 37: **The quantity (tonnes) of pesticides applied to potato crops in Northern Ireland, 1990-2014.**

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	82.07	83.28	76.00	69.41	67.43	.	69.90	51.33	46.93	45.02	39.80	27.40	22.18
Herbicides & desiccants	197.20	171.75	97.28	293.26	290.23	.	354.01	211.18	101.78	12.22	11.70	10.59	7.78
Insecticides													
Carbamates	.	*<0.01*	.	*<0.01*	.	.	0.05	*0.07*	*0.004*	*0.060*	.	*0.01376*	
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	*0.22763*
Organophosphates	*0.17*	*0.10*	*0.28*	*0.26*	0.12	.	0.02	*0.12*	*0.164*	.	.	.	
Pyrethroids	*0.01*	.	.	*0.02*	*<0.01*	.	*0.01*	*0.01*	*0.006*	*0.007*	*0.010*	*0.004*	*0.006*
Azomethine	.	.	.	.	.	.	.	*0.102*	*0.005*	.	.	*0.043*	.
Neonicotinoid	.	.	.	.	.	.	.	.	*0.010*	.	*0.006*	*0.021*	.
Feeding blocker	.	.	.	.	.	.	.	.	.	*0.020*	*0.006*	*0.005*	*0.008*
Mixed Formulation	.	.	.	.	.	.	.	*0.051*	*0.015*	.	*0.014*	.	.
Unknown insecticides	.	.	.	.	.	.	.	*0.003*	.	.	.	.	.
All insecticides	0.17	0.10	0.28	0.28	0.13	.	0.08	0.36	0.20	0.087	0.04	0.09	0.24
Molluscicides	.	.	.	0.04	0.10	.	0.26	0.02	0.23	0.07	0.09	0.24	0.04
Mixed formulations	0.51	0.41	0.29	0.30	0.28	.	0.13	.	.	.	.	.	
Growth regulators	.	.	.	.	.	.	*0.17*	.	.	0.07	0.17	0.03	0.28
Seed treatments	*	2.71	1.20	0.61	*1.99*	.	*1.22*	0.90	2.60	0.73	0.70	1.11	0.74
All pesticides	***279.95***	***258.25***	***175.06***	***363.89***	***360.16***	***.***	***425.84***	***263.78***	***151.75***	***58.20***	***52.48***	***39.46***	***31.25***
Area grown (ha)	11,835	11,064	8,404	8,488	7,513	.	6,708	6,068	5,118	5,501	4,940	4,150	3,765

Table 37 cont: **Comparison of the quantity (tonnes) of pesticides applied to potato crops in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides		-73%	-71%	-68%	-67%	.	-68%	-57%	-53%	-51%	-44%	-19%
Herbicides & desiccants	-96%	-95%	-92%	-97%	-97%	.	-98%	-96%	-92%	-36%	-34%	-27%
Insecticides												
Carbamates	.	.	.	.	.	.	-100%	-100%	-100%	-100%	.	-100%
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	-100%	-100%	-100%	-100%	-100%	.	-100%	-100%	-100%	.	.	.
Pyrethroids	-38%	.	.	-69%	.	.	-25%	-38%	4%	-11%	-38%	49%
Azomethine	.	.	.	.	.	.	.	.	.	.	.	.
Neonicotinoid	.	.	.	.	.	.	.	.	.	.	.	.
Feeding blocker	.	.	.	.	.	.	.	.	.	-59%	35%	54%
Mixed Formulation	.	.	.	.	.	.	.	.	.	.	.	.
Unknown insecticides	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	42%	142%	-13%	-14%	86%	.	222%	-33%	19%	178%	572%	176%
Molluscicides	.	.	.	-4%	-61%	.	-85%	139%	-83%	-48%	-57%	-84%
Mixed formulations	-100%	-100%	-100%	-100%	-100%	.	-100%	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	62%	.	.	305%	66%	815%
Seed treatments	.	-73%	-39%	21%	-63%	.	-40%	-18%	-72%	1%	6%	-34%
All pesticides	***-89%***	***-88%***	***-82%***	***-91%***	***-91%***	***.***	***-93%***	***-88%***	***-79%***	***-46%***	***-40%***	***-21%***
Area grown (ha)	-68%	-66%	-55%	-56%	-50%	.	-44%	-38%	-26%	-32%	-24%	-9%

Table 38: The area (spray hectares) of seed potatoes treated with pesticides in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**tonnes**
Fungicides	18,326	18,603	16,465	13,462	14,242	.	9,219	10,226	5,618	5,530	6,662	6,076	#
Herbicides & desiccants	6,535	8,118	3,784	4,035	3,363	.	2,650	4,917	2,285	3,170	2,240	2,344	#
Insecticides													
Carbamates	.	*23*	.	.	.	.	.	*365*	.	*252*	.	.	#
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	#
Organophosphates	.	*18*	.	.	*26*	.	.	*365*	.	.	.	.	#
Pyrethroids	*501*	.	.	*586*	*205*	.	*16*	*406*	*931*	*168*	*84*	*369*	#
Azomethine	.	.	.	.	.	.	.	.	.	.	.	*204*	#
Neonicotinoid	.	.	.	.	.	.	.	.	*39*		.	*249*	#
Feeding blocker	.	.	.	.	.	.	.	.	.	*252*	*77*	*65*	#
Mixed Formulations	.	.	.	.	.	.	.	*453*	*39*	.	*120*	.	#
All insecticides	501	41	8	586	230	.	*16*	1,589	1,008	671	281	887	#
Molluscicides	.	.	.	.	66	.	*267*	.	77	160	86	71	#
Mixed formulations	8	.	.	.	.	.	.	.	.	.	.	.	#
Seed treatments	*	2,039	744	1,065	882	.	512	1,224	303	622	238	562	#
All pesticides	***25,370***	***28,801***	***21,000***	***19,148***	***18,783***	***.***	***12,665***	***17,956***	***9,291***	***10,153***	***9,507***	***9,940***	***#***
Area grown (ha)	3,509	3,688	1,678	1,798	1,607	.	1,239	1,148	763	792	707	555	#

* Seed treatments not recorded

both seed and maincrop potatoes have been combined for 2014

Table 38 cont: **Comparison of the area (spray hectares) of seed potatoes treated with pesticides in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha
Fungicides												
Herbicides & desiccants												
Insecticides												
Carbamates												
Organochlorines												
Organophosphates												
Pyrethroids												
Azomethine												
Neonicotinoid												
Feeding blocker												
Mixed												
Formulations												
All insecticides												
Molluscicides												
Mixed formulations												
Seed treatments												
All pesticides												
Area grown (ha)												

Table 39: The quantity (tonnes) of pesticides applied to seed potatoes in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	22.92	24.82	15.24	13.45	14.29	.	9.08	8.79	6.16	3.14	5.99	3.07	#
Herbicides & desiccants	127.42	100.45	41.73	146.03	148.63	.	129.71	31.62	7.38	2.88	1.41	1.48	#
Insecticides													
Carbamates	.	*<0.01*	.	.	.	.	.	*0.051*	.	*0.035*	.	.	#
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	#
Organophosphates	.	*0.06*	.	.	*<0.01*	.	.	*0.124*	.	.	.	.	#
Pyrethroids	*0.01*	.	.	*0.02*	*<0.01*	.	*<0.01*	*0.002*	*0.004*	*0.002*	*<0.001*	*0.002*	#
Azomethine	.	.	.	.	.	.	.	.	.	.	.	*0.033*	#
Neonicotinoid	.	.	.	.	.	.	.	.	*0.004*	.	.	*0.019*	#
Feeding blocker										*0.02*	*0.006*	*0.005*	#
Mixed Formulations	.	.	.	.	.	.	.	*0.04*	*0.006*		*0.013*	.	#
All insecticides	0.01	0.06	0.03	0.02	0.01	.	<0.01	0.22	0.014	0.057	0.020	0.059	#
Molluscicides	.	.	.	.	0.01	.	0.04	.	0.02	0.01	0.01	0.003	#
Mixed formulations	0.02	.	.	.	.	.	.	.	.	.	.	.	#
Seed treatments	*	1.97	0.30	0.21	0.74	.	0.08	0.41	0.11	0.17	0.10	0.27	#
All pesticides	***150.37***	***127.30***	***57.30***	***159.70***	***163.68***	***.***	***138.91***	***41.04***	***13.67***	***6.27***	***7.52***	***4.89***	#
Area grown (ha)	3,509	3,688	1,678	1,798	1,607	.	1,239	1,148	763	792	707	555	#

* Seed treatments not recorded

both seed and maincrop potatoes have been combined for 2014

Table 39 cont: **Comparison of the quantity (tonnes) of pesticides applied to seed potatoes in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides												
Herbicides & desiccants												
Insecticides												
Carbamates												
Organochlorines												
Organophosphates												
Pyrethroids												
Azomethine												
Neonicotinoid												
Feeding blocker												
Mixed												
Formulations												
All insecticides												
Molluscicides												
Mixed formulations												
Seed treatments												
All pesticides												
Area grown (ha)												

Table 40: **The area (spray hectares) of early potatoes treated with pesticides in Northern Ireland, 1990-2014.**

	Survey Year												
	1990	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	2,037	3,250	3,706	3,089	1,693	.	5,561	2,116	2,080	2,154	1,096	1,056	1,179
Herbicides & desiccants	849	1,304	835	1,312	618	.	1,520	841	1,124	1,280	484	665	330
Insecticides													
Carbamates	.	.	.	*28*	.	.	.	*87*	.	.	.	*17*	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	.	.	*63*	*66*	.	*24*	.	*25*	.	.	.	.
Pyrethroids	.	.	.	.	*39*	.	*173*	*150*	.	*22*	*37*	*8*	37
Unknown insecticide	.	.	.	.	*2.2*	.	.	.	.	.	.	.	.
Azomethine	.	.	.	.	.	.	.	*30*	.	.	.	.	.
All insecticides	.	.	.	90	107	.	197	267	25	22	37	26	37
Molluscicides	.	.	.	.	10	.	206	.	.	58	20	81	.
Seed treatments	*	360	130	303	154	.	481	212	147	327	68	130	83
All pesticides	***2,886***	***4,914***	***4,672***	***4,794***	***2,582***	***.***	***7,966***	***3,436***	***3,376***	***3,842***	***1,705***	***1,958***	***1,629***
Area grown (ha)	463	836	813	729	391	.	728	403	370	401	191	192	155

Table 40 cont: **Comparison of the area (spray hectares) of early potatoes treated with pesticides in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides		-64%	-68%	-62%	-30%	.	-79%	-44%	-43%	-45%	8%	12%
Herbicides & desiccants	-61%	-75%	-60%	-75%	-47%	.	-78%	-61%	-71%	-74%	-32%	-50%
Insecticides												
Carbamates	.	.	.	.	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	.	.	.	.	.	.	.	.	.	.	.
Pyrethroids	.	.	.	.	-3%	.	-78%	-75%	.	70%	1%	359%
Unknown insecticide	.	.	.	.	.	.	.	.	.	.	.	.
Azomethine	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	.	.	.	-58%	-65%	.	-81%	-86%	50%	70%	1%	46%
Molluscicides	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	.	-77%	-37%	-73%	-46%	.	-83%	-61%	-44%	-75%	22%	-36%
All pesticides	***-44%***	***-67%***	***-65%***	***-66%***	***-37%***	***.***	***-80%***	***-53%***	***-52%***	***-58%***	***-4%***	***-17%***
Area grown (ha)	-67%	-81%	-81%	-79%	-60%	.	-79%	-61%	-58%	-61%	-19%	-19%

Table 41: The quantity (tonnes) of pesticides applied to early potatoes in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	2.54	4.11	4.46	3.85	2.07	.	5.48	2.43	1.99	1.92	0.66	0.59	0.87
Herbicides & desiccants	0.51	3.09	0.55	4.05	1.73	.	32.56	24.26	1.70	0.74	0.43	0.52	0.23
Insecticides													
Carbamates	.	.	.	*< 0.1*	.	.	*<.01*	*0.012*	.	.	.	*0.002*	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	.	.	*0.02*	*0.08*	.	*0.01*	.	*0.074*	.	.	.	.
Pyrethroids	.	.	.	.	.	.	.	*0.001*	.	*<0.0001*	*<0.0001*	*<0.0001*	*0.0003*
Azomethine	.	.	.	.	.	.	.	*0.005*	.	.	.	.	.
All insecticides	.	.	.	0.02	0.08	.	0.01	0.02	0.074	<0.0001	<0.0001	*0.002*	*0.0003*
Molluscicides	.	.	.	.	0.002	.	0.038	.	.	0.004	0.002	0.008	.
Seed treatments	*	0.20	0.04	0.05	0.03	.	0.11	0.02	0.01	0.11	0.02	0.04	0.04
All pesticides	***3.05***	***7.40***	***5.05***	***7.96***	***3.92***	***.***	***38.21***	***26.72***	***3.78***	***2.77***	***1.11***	***1.16***	***1.13***
Area grown (ha)	463	836	813	729	391	.	728	403	370	401	191	192	155

Table 41 cont: **Comparison of the quantity (tonnes) of pesticides applied to early potatoes in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	**2014-92**	**2014-94**	**2014-96**	**2014-98**	**2014-00**	**2014-02**	**2014-04**	**2014-06**	**2014-08**	**2014-10**	**2014-12**
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides		-79%	-81%	-78%	-58%	.	-84%	-64%	-57%	-55%	31%	47%
Herbicides & desiccants	-55%	-93%	-58%	-94%	-87%	.	-99%	-99%	-87%	-69%	-46%	-56%
Insecticides												
Carbamates	.	.	.	.	.	.	.	.	.	.	.	.
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.
Organophosphates	.	.	.	.	.	.	.	.	.	.	.	.
Pyrethroids	.	.	.	.	.	.	.	-72%	.	.	.	.
Azomethine	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	.	.	.	-99%	-100%	.	-97%	-98%	-100%	.	.	-89%
Molluscicides	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	.	-82%	-11%	-27%	21%	.	-68%	144%	205%	-67%	103%	-16%
All pesticides	***-63%***	***-85%***	***-78%***	***-86%***	***-71%***	***.***	***-97%***	***-96%***	***-70%***	***-59%***	***2%***	***-2%***
Area grown (ha)	-67%	-81%	-81%	-79%	-60%	.	-79%	-61%	-58%	-61%	-19%	-19%

Table 42: **The area (spray hectares) of maincrop potatoes treated with pesticides in Northern Ireland, 1990-2012.**

	Survey Year												
	1990	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**
Pesticide type	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**	**sp ha**
Fungicides	48,021	46,325	52,198	48,176	59,998	.	52,030	39,807	37,699	44,505	47,531	43,553	#
Herbicides & desiccants	13,762	12,397	11,309	12,316	12,635	.	10,682	14,081	12,562	15,393	15,029	14,347	#
Insecticides													
Carbamates	.	.	.	.	.	.	*357.4*	*20*	*30*	*179*	.	*80.88*	#
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	#
Organophosphates	*308*	*10*	.	*549*	*32*	.	*101*	.	*30*	.	.	.	#
Pyrethroids	*11*	.	.	*70*	*110*	.	*1151*	*1852*	*622*	*723*	*973*	*282.06*	#
Azomethine	.	.	.	.	.	.	.	*642*	*71*	.	.	*67.8*	#
Neonicotinoid	.	.	.	.	.	.	.	.	*57*	.	*78*	*25.09*	#
Mixed Formulations	.	.	.	.	.	.	.	*128*	*57*	.	*9*	.	#
Unkown insecticide	.	.	.	.	.	.	.	*66*	.	.	.	.	#
All insecticides	319	10	94	619	155	.	1,609	2,709	867	902	1,061	456	#
Molluscicides	.	.	.	195	396	.	1,108	114	853	446	385	2,754	#
Growth regulators	.	.	.	.	.	.	72	.	.	23	56	10	#
Mixed formulations	225	186	134	137	128	.	86	.	.	.	.	.	#
Seed treatments	*	1,339	1,546	1,945	2,980	.	2,078	2,243	2,306	2,209	1,811	1,974	#
All pesticides	***62,328***	***60,257***	***65,280***	***63,388***	***76,292***	***.***	***67,664***	***58,955***	***54,287***	***63,478***	***65,873***	***63,094***	***#***
Area grown (ha)	7,863	6,540	5,913	5,961	5,515	.	4,741	4,517	3,984	4,308	4,041	3,403	#

both seed and maincrop potatoes have been combined for 2014

Table 42 cont: **Comparison of the area (spray hectares) of maincrop potatoes treated with pesticides in Northern Ireland, 1990-2012.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha	sp ha
Fungicides												
Herbicides & desiccants												
Insecticides												
Carbamates												
Organochlorines												
Organophosphates												
Pyrethroids												
Azomethine												
Neonicotinoid												
Mixed Formulations												
Unkown insecticide												
All insecticides												
Molluscicides												
Growth regulators												
Mixed formulations												
Seed treatments												
All pesticides												
Area grown (ha)												

Table 43: The quantity (tonnes) of pesticides applied to maincrop potatoes in Northern Ireland, 1990-2014.

	Survey Year												
	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides	56.61	54.36	56.29	52.11	51.07	.	55.34	40.10	38.78	39.96	33.14	23.75	#
Herbicides & desiccants	69.27	68.21	55.01	143.18	139.86	.	191.80	155.30	92.70	8.60	9.86	8.59	#
Insecticides													
Carbamates	.	.	.	.	.	.	*0.05*	*0.003*	*0.004*	*0.025*	.	*0.011*	#
Organochlorines	.	.	.	.	.	.	.	.	.	.	.	.	#
Organophosphates	*0.17*	*0.03*	.	*0.24*	*0.03*	.	*0.01*	.	*0.09*	.	.	.	#
Pyrethroids	*< 0.01*	.	.	*< 0.01*	*<0.01*	.	*<0.01*	*0.01*	*0.002*	*0.005*	*0.009*	*0.002*	#
Azomethines	.	.	.	.	.	.	.	*0.097*	*0.005*	.	.	*0.010*	#
Neonicotinoid	.	.	.	.	.	.	.	.	*0.006*	.	*0.006*	*0.002*	#
Mixed Formulations	.	.	.	.	.	.	.	*0.014*	*0.009*	.	*0.001*	.	#
Unknown Insecticide	.	.	.	.	.	.	.	*0.003*	.	.	.	.	#
All insecticides	0.17	0.03	0.25	0.24	0.04	.	0.07	0.13	0.116	0.030	0.016	0.026	#
Molluscicides	.	.	.	0.04	0.08	.	0.18	0.02	0.21	0.06	0.08	0.227	#
Growth regulators	.	.	.	.	.	.	0.1721	.	.	0.069	0.168	0.031	#
Mixed formulations	0.50	0.41	0.29	0.30	0.28	.	0.13	.	.	.	.	.	#
Seed treatments	*	0.54	0.86	0.36	1.22	.	.	0.48	2.49	0.44	0.58	0.80	#
All pesticides	***126.55***	***123.55***	***112.71***	***196.23***	***192.56***	***.***	***248.72***	***196.03***	***134.30***	***49.16***	***43.85***	***33.42***	*#*
Area grown (ha)	7,863	6,540	5,913	5,961	5,515	.	4,741	4,517	3,984	4,308	4,041	3,403	#

* Seed treatments not recorded

both seed and maincrop potatoes have been combined for 2014

Table 43 cont: **Comparison of the quantity (tonnes) of pesticides applied to maincrop potatoes in Northern Ireland, 1990-2014.**

	Differences between:											
	2014-90	2014-92	2014-94	2014-96	2014-98	2014-00	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Pesticide type	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**	**tonnes**
Fungicides												
Herbicides & desiccants												
Insecticides												
Carbamates												
Organochlorines												
Organophosphates												
Pyrethroids												
Azomethines												
Neonicotinoid												
Mixed												
Formulations												
Unknown												
Insecticide												
All insecticides												
Molluscicides												
Growth regulators												
Mixed formulations												
Seed treatments												
All pesticides												
Area grown (ha)												

Table 44: Estimated quantity (tonnes) of potato crops stored regionally in Northern Ireland, 2014.

Location of holding	Early	Ware	Seed	Total
Antrim	.	8,599	353	8,952
Armagh	.	2,350		2,350
Down	476	13,548	1,476	15,501
Londonderry		12,644	762	13,405
Tyrone	.	1,128		1,128
Northern Ireland	**.**	***38,269***	***2,591***	***41,336***

Table 45: Type of storage building, storage method, potato type and quantity (tonnes) of potatoes stored in Northern Ireland, 2014.

Type of storage building	Early	Ware	Seed	Total
Barn store				
Boxed	476	18,229	1,975	20,680
Bulk	.	3,158	.	3,158
Tray	.	.	39	39
All barn stores	***476***	***21,387***	***2,014***	***23,877***
Modified Barn				
Boxed	.	6,783	140	6,924
All modified barns	**.**	***6,783***	***140***	***6,924***
Purpose built ventilated store				
Boxed	.	.	.	.
Bulk	.	.	.	.
All purpose built ventilated stores	**.**	**.**	**.**	**.**
Refrigerated store				
Boxed	.	10,099	436	10,535
All refrigerated stores	**.**	***10,099***	***436***	***10,535***
Total	***476***	***38,269***	***2,591***	***41,336***

Table 46: Type of storage method, potato type and total quantity (tonnes) of potatoes stored in Northern Ireland, 2014.

Type of storage method	Early	Ware	Seed	Total
Boxed	476	35,111	2,552	38,139
Bulk	.	3,158	.	3,158
Tray	.	.	39	39
Total	***476***	***38,269***	***2,591***	***41,336***

Table 47: **Comparison of ware potatoes stored (tonnes), treated (treated tonnes) and the weight of pesticides applied (kilograms) to stored potatoes between 1992 and 2014.**

	Ware potatoes											Difference between:									
	1992	1994	1996	1998	2002	2004	2006	2008	2010	2012	2014	2014-92	2014-94	2014-96	2014-98	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Quantity stored (t)	139,570	84,868	135,933	112,675	44,322	122,348	92,914	60,855	94,771	56,073	.	.	.	.	.	.	.	.	.	.	.
Quantity treated (tt)	16,289	11,630	19,022	5,899	9,024	3,099	.	4680	9644	3,183	.	.	.	.	.	.	.	.	.	.	.
Quantity of pesticides (kg)	1,998	1,001	750	227	439	148	.	173	203	78	.	.	.	.	.	.	.	.	.	.	.
Quantity untreated (t)	123,281	73,238	116,910	106,777	35,298	119,249	92,914	56,175	85,127	52,889	.	.	.	.	.	.	.	.	.	.	.

Table 48: **Comparison of seed potatoes stored (tonnes), treated (treated tonnes) and the weight of pesticides applied (kilograms) to stored potatoes between 1992 and 2014.**

	Seed potatoes											Difference between:									
	1992	1994	1996	1998	2002	2004	2006	2008	2010	2012	2014	2014-92	2014-94	2014-96	2014-98	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Quantity stored (t)	33,420	24,238	39,290	39,809	16,032	33,321	24,640	5,138	16,256	12,732	.	.	.	.	.	.	.	.	.	.	.
Quantity treated (tt)	7,536	14,950	12,915	5,628	4,029	673	76	.	.	4,951	.	.	.	.	.	.	.	.	.	.	.
Quantity of pesticides (kg)	1,052	851	480	896	48	5	0.76	.	.	139	.	.	.	.	.	.	.	.	.	.	.
Quantity untreated (t)	27,033	9,288	26,652	34,181	12,003	32,648	24,564	.	.	7,781	.	.	.	.	.	.	.	.	.	.	.

Table 49: **Comparison of reserved potatoes stored (tonnes), treated (treated tonnes) and the weight of pesticides applied (kilograms) to stored potatoes between 1992 and 2014.**

	Reserved potatoes											Difference between:									
	1992	1994	1996	1998	2002	2004	2006	2008	2010	2012	2014	2014-92	2014-94	2014-96	2014-98	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Quantity stored (t)	.	.	15,169	10,123	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Quantity treated (tt)	.	.	6,705	2,524	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Quantity of pesticides (kg)	.	.	375	121	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Quantity untreated (t)	.	.	8,464	7,599	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 50: **Comparison of all potatoes stored (tonnes), treated (treated tonnes) and the weight of pesticides applied (kilograms) to stored potatoes between 1992 and 2014.**

	All potatoes											Difference between:									
	1992	1994	1996	1998	2002	2004	2006	2008	2010	2012	2014	2014-92	2014-94	2014-96	2014-98	2014-02	2014-04	2014-06	2014-08	2014-10	2014-12
Quantity stored (t)	191,019	119,447	190,392	162,608	60,353	155,669	117,554	70,794	111,028	68,804	41,336	-64%	-42%	-64%	-58%	14%	-56%	-41%	-3%	-38%	-40%
Quantity treated (tt)	23,825	26,580	38,624	14,051	13,053	3,772	76	4,680	9,644	8,134	.	-66%	-69%	-79%	-42%	-38%	116%	10586%	74%	-16%	.
Quantity of pesticides (kg)	3,050	1,852	1,605	1,245	488	154	1	173	203	218	.	-93%	-88%	-86%	-83%	-55%	41%	28505%	26%	8%	.
Quantity untreated (t)	168,344	92,868	152,027	148,557	47,300	151,897	117,478	66,114	101,384	60,670	41,336	-64%	-35%	-60%	-59%	28%	-60%	-48%	-8%	-40%	-32%

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99	Grassland & Fodder Crops 1989	1-855 27 079 X
105	Arable Crops 1990	1-855 27 130 3
106	Soft Fruit Crops 1990	1-855 27 149 4
109	Vegetable Crops 1991	1-855 27 137 0
110	Protected Crops 1991 (edible & ornamental)	1-855 27 283 0
111	Mushroom Crops 1991	1-855 27 150 8
117	Arable Crops 1992	1-855 27 193 1
118	Top Fruit Crops 1992	1-855 27 194 X
124	Grassland & Fodder crops 1993	1-855 27 221 0
131	Forestry 1993	1-855 27 282 2
132	Arable Crops 1994	1-855 27 314 4
139	Vegetable Crops 1995	1-855 27 346 2
140	Mushroom Crops 1995	1-855 27 347 0
146	Arable Crops 1996	1-855 27 469 8
147	Top fruit 1996	1-855 27 470 1
156	Grassland & Fodder Crops 1997	1-855 27 506 6
157	Sheep Treatments 1997	1-855 27 425 6
167	Soft Fruit 1998	1-855 27 540 6
168	Arable Crops 1998	1-855 27 536 8
169	Vegetable Crops 1999	1-855 27 561 9
170	Mushroom Crops 1999	1-855 27 549 X
177	Arable Crops 2000	1-855 27 670 450
178	Top Fruit Crops 2002	1-855 27 618 6
194	Arable Crops 2002	1-855 27 674 7
198	Grassland & Fodder Crops 2003	1-855 27 797 2
199	Hardy Nursery Stock Crops 2003	1-855 27 789 1
201	Protected Ornamental Crops 2003	1-855 27 739 5
206	Arable Crops 2004	1-855 27 833 2
207	Vegetable crops 2004	1-855 27 869 3
208	Grassland & Fodder Crops 2005	1-855 27 998 8
209	Sheep Treatments 2005	1-855 27 999 5
216	Arable Crops 2006	1-848 07 035 6
217	Top Fruit Crops 2006	1-848 07 019 6
218	Soft Fruit Crops 2006	1-848 07 036 3
222	Vegetable Crops 2007	1-848 07 062 2
223	Mushroom Crops 2007	1 848 07 061 5
230	Arable Crops 2008	1 848 07 135 3

231	Top Fruit Crops 2008	1-848 07 134 6
238	Grassland & Fodder Crops 2009	1-848 07 186 5
239	Hardy Nursery Stock Crops 2009	1-848 07 187 2
240	Soft Fruit Crops 2010	1-848 07 251 0
242	Arable Crops 2010	1-848 07 252 7
245	Mushroom Crops 2011	1-848 07 308 1
246	Vegetable Crops 2011	1-848 07 309 8
247	Arable Crops 2012	1-848 07 404 3
248	Soft Fruit Crops 2012	1-848 07 402 6
249	Top Fruit Crops 2012	1-848 07 403 3
258	Grassland & Fodder Crops 2013	1-848 07 485 9
259	Vegetable Crops 2013	1-848 07 486 6

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