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PESTICIDE USAGE IN NORTHERN IRELAND
SURVEY REPORT 268

NORTHERN IRELAND OUTDOOR VEGETABLE CROPS 2015

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PESTICIDE USAGE SURVEY REPORT 268

OUTDOOR VEGETABLE CROPS IN NORTHERN IRELAND 2015

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ISBN 978-1-84807-685-3

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SUMMARY

This is the eighth survey of pesticide usage on outdoor vegetable crops in Northern Ireland, providing comparative data to that obtained in the previous surveys in 1991, (Jess *et al*., 1993), 1995 (Kidd *et al*., 1998), 1999 (Kearns *et al*., 2002), 2004 (Kearns *et al*., 2005), 2007 (Withers *et al*., 2009), 2011 (Withers *et al*., 2012) and 2013 (Withers *et al*., 2014). Information on all aspects of pesticide usage was collected from 44 holdings throughout the province. Quantitative data have been adjusted to provide estimates of total pesticide usage. The area of outdoor vegetable crops grown in Northern Ireland in 2015 was an estimated 1,203 hectares; a 14% decrease compared with 2013.

Totals of 97 products and 72 active substances were recorded in use in this survey. By comparison with 2013, the pesticide-treated area decreased by 17%, to 11,432 spray hectares, while the quantity of pesticide (active substances) decreased by 26% to approximately 4,429 kilograms. Both the fungicide-treated area and the quantity of fungicide active substances applied decreased by 11%. The area treated with herbicides and desiccants decreased by 25% and the weight applied decreased by 28%. The insecticide-treated area decreased by 10% and the weight of insecticide active substances decreased by 33%. The area treated with molluscicides decreased by 28%. However, the quantity applied increased by 63% when compared with 2013 but decreased by 37% when compared with 2011. This is possibly due to the high application rates of these products. The area of vegetable crops grown from treated seed (direct sown or propagated and transplanted) decreased by 9% since 2013 while the weight of active substances used significantly decreased by 51%.

In 2015, Northern Ireland had a very wet autumn/winter and many growers could not get onto the ground to spray throughout this period. This led to a wider problem with rots such as *Xanthamonas* and leaf spots on Brassicas. During the same period, root vegetables such as carrots and parsnips were unable to be harvested in some cases as growers could not access nor use machinery on the fields.

Fungicides, applied to 25% of the pesticide-treated area, accounted for 24% of the weight of pesticides applied. Herbicides and desiccants accounted for 38% of the pesticide-treated area and 60% of the total quantity of pesticides used. Insecticides,

applied to 28% of the pesticide-treated area, accounted for 16% of the total quantity of pesticides used. Molluscicides accounted for less than 1% of both the total pesticide-treated area and the quantity of pesticides applied. Seed treatments applied to outdoor vegetable crops grown in 2015 accounted for 9% of the pesticide-treated area representing less than 1% of the quantity of active ingredients applied.

Carrots and parsnips collectively accounted for 62% of the quantity of fungicide active ingredients applied, representing 58% of the area treated with fungicides, with the active substance formulation azoxystrobin/difenoconazole being most frequently used on these vegetable crops. Brassica crops received 16% of the total weight of fungicides applied, representing 18% of the area of vegetable crops treated with fungicides. The single most commonly used fungicide active substance applied to brassicas was the triazole protectant and curative fungicide difenoconazole, primarily for general fungal control.

Linuron was the herbicide/desiccant active ingredient most commonly applied to outdoor vegetable crops, particularly carrots and parsnips. Overall, 41% of all herbicide/desiccant applications were applied to carrot and parsnip crops, with a further 20% applied to turnips and swedes.

Carrots and parsnips collectively accounted for 58% of the insecticide-treated area, representing 43% of the quantity of insecticide active substances applied. Turnips and swedes, which accounted for only 3% of the insecticide-treated area, represented 40% of the quantity applied, mainly due to garlic extract being applied at high application rates for insect deterrence. Leafy and flowerhead brassicas accounted for 27% of the insecticide-treated area representing 12% of the weight of insecticides applied. The carbamate insecticide pirimicarb accounted for 33% of all insecticide active substances applied to brassica crops, primarily to control aphids. Pyrethroids were, by far, the most frequently used of all insecticide active substances, with lambda-cyhalothrin being the most frequently used insecticide.

With exception of the use of garlic oil in brassica crops for the control of root flies there were no records of biopesticides/biological control in NI vegetable crops in 2015.

Crops which were propagated from seed and/or grown under glass or polythene for the duration of their life cycle are recorded in the Edible Protected Crops in Northern Ireland 2015 report (Lavery *et al*., 2016). These crops have previously been included in the totals for outdoor vegetable crops. The proportion of total treated area of vegetable crops attributed to propagation (edible protected) would be an estimated <0.25%.

A number of new active substances and formulated mixtures which were not recorded in the previous report have been used during this survey period. The fungicides azoxystrobin/chlorothalonil, cyproconazole/trifloxystrobin, fenhexamid and sulphur, the herbicide chlorpropham, the insecticide spinosad and the molluscicide metaldehyde were all recorded as used in 2015. Conversely, a number of active substances and formulated mixtures which were used in 2013 have not been recorded during this survey period. These include the fungicides dimethomorph (as an individual active substance) and iprodione (as a fungicide spray), the herbicides bentazone and MCPB, the insecticides diflubenzuron and dimethoate and the seed treatment imidacloprid.

DEFINITIONS AND NOTES

- ‘Grown area’ refers to the actual planted area of crop, and is referred to in hectares (ha).
- ‘Basic area’ refers to the actual planted area of crop which received at least one pesticide application and is referred to in hectares (ha).
- ‘Treated area’ refers to the total area treated with a pesticide, including all repeated applications to the basic area, and is referred to in spray hectares (spha).
- ‘Quantity applied’ refers to the weight of pesticides applied, including all repeated applications, and is referred to in kilograms (kg).
- ‘Reasons for use’: the reasons reported for the use of pesticides are the growers stated reason for use and may sometimes seem inappropriate.
- ‘Rounding’: due to rounding of figures, there may be slight differences in totals both within and between tables.
- ‘Leafy and flowerhead brassica’: refers to Brussels sprout, broccoli/calabrese, all cauliflower, all cabbage and kale. ‘Cauliflower’ refers to those crops which were not classified as either ‘summer’ or ‘autumn’ cauliflowers.
- Cabbage refers to: Savoy, Spring, Summer, Autumn, Winter, Red, White, Pointed and Hard cabbage. ‘Hard cabbage’ refers to cabbage used for coleslaw, the majority of which is classified as summer cabbage for comparison purposes.
- ‘Onions and leeks’: refers to soup leeks, table leeks, salad onions and summer scallions. ‘Leeks’ refer to those crops which were not classified as either soup or table leeks.
- ‘Celery and parsley’: refers to soup celery, table celery, celeriac and parsley.
- ‘Peas and beans’: refers to peas and broad beans.
- ‘Other vegetables’: refers to beetroot, pumpkin and rhubarb.
- ‘Ground preparation’ herbicides are also known as pre-cultivation or pre-sowing herbicides. ‘Sealers’ are also referred to as pre-emergence herbicides.
- ‘Blackspot’ refers to leaf spot fungus.
- ‘Unknown fungicide’, ‘Unknown herbicide’, ‘Unknown insecticide’ and ‘Unknown seed treatment’ refer to a small number of products, for which the information regarding the product name and quantity applied was deemed unreliable, however, the area treated with these products has been included.

INTRODUCTION

As a participant of the UK Working Party on Pesticide Usage Surveys, the Agri-Food and Biosciences Institute (AFBI), on behalf of the Department of Agriculture, Environment and Rural Affairs (DAERA), conducts a 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 UK Expert Committee on Pesticides. In addition, the information may be used by those involved in residue testing, environmental impact studies, public information and for the evaluation and regulation of trends in pesticide usage. Pesticide usage monitoring forms part of an obligation under the Food and Environment Act (1985) for post-registration monitoring of pesticides approved for use. The programme forms an integral part of the government's pesticide safety control arrangements, in providing quantitative and qualitative data on the usage of pesticides in agriculture, horticulture, food storage and associated industries.

This work is also undertaken in England and Wales by FERA Science Ltd (FERA) and in Scotland by Science and Advice for Scottish Agriculture (SASA). Pesticide usage reports from these regions may be obtained at the following sites:
(https://secure.fera.defra.gov.uk/pusstats/surveys/)
(https://www.sasa.gov.uk/pesticides/pesticide-usage/pesticide-usage-survey-reports)

This is the eighth survey examining pesticide usage practices on vegetable crops grown in Northern Ireland. Summary results from the previous surveys conducted in 1991 (Jess *et al*., 1993), 1995 (Kidd *et al*., 1998), 1999 (Kearns *et al*., 2002), 2004 (Kearns *et al*., 2005), 2007 (Withers *et al*., 2009), 2011 (Withers *et al*., 2012) and 2013 (Withers *et al*., 2014) are included in the report for comparative purposes.

A list of published Northern Ireland Pesticide Usage Survey reports is included 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 vegetable crops grown, using a combination of data from the Northern Ireland Agricultural Census, June 2014 (*Anon*., 2015), farm level information from Single Farm Payment and from previous surveys. However, due to sampling procedures and the distribution of vegetable production in Northern Ireland, no holdings were selected from County Fermanagh.

The sample was stratified into five size groups, according to the total area of vegetable crops grown in each region. Holdings were selected at random within each of the size groups and the number of holdings selected was proportional to the total area of vegetable crops grown. The growers were contacted to confirm if they had grown outdoor vegetable crops in 2015. This information was used to estimate the total number of Northern Ireland growers.

The purpose of the survey was explained to the occupiers of selected holdings in preliminary correspondence. Forty-four holdings, representing 47% of holdings growing outdoor vegetable crops, were visited during the period November 2015 to March 2016 and data collected by personal interview. The data collected included: the area of crops grown, area treated, target crop, pesticide group, active substance used and number of treatments applied. The growers' stated reasons for pesticide use were also included but may not always seem appropriate. Holdings selected in the original sample unable to provide data were replaced with those from the same county and size group held on a reserve list. 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 SQL, a relational database programme. Validated data were downloaded for analysis using IBM SPSS Statistics Version 22 software.

TRENDS

Figure 1: Comparison of the area of outdoor vegetable crops grown (ha) in Northern Ireland between 1991- 2015.

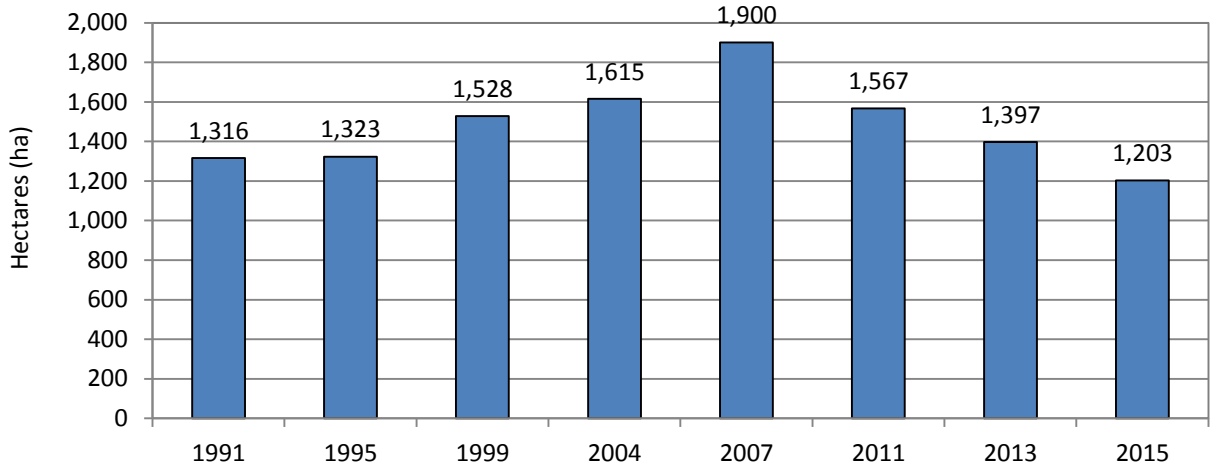


Figure 2: Comparison of the area of outdoor vegetable crops treated (spha) in Northern Ireland between 1991- 2015.

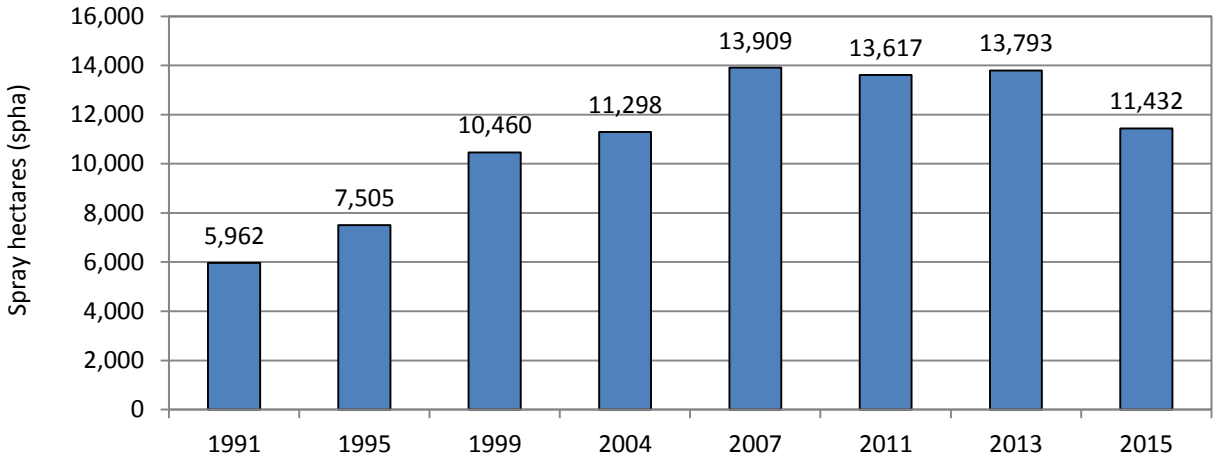


Figure 3: Comparison of the weight of pesticides applied (kg) to outdoor vegetable crops in Northern Ireland between 1991- 2015.

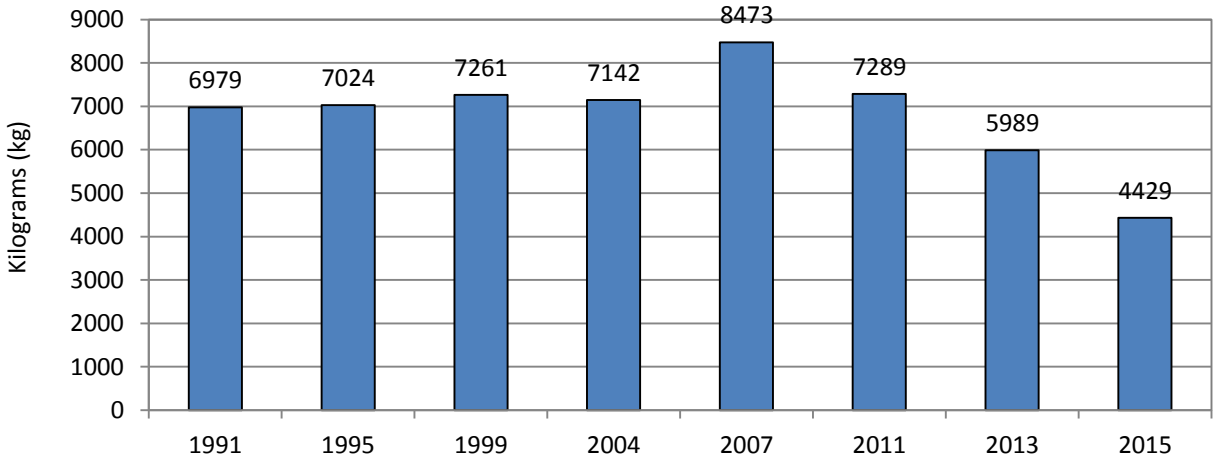


Figure 4: Changes in the area treated (spha) with the major pesticide groups applied to outdoor vegetable crops in Northern Ireland between 1991- 2015.

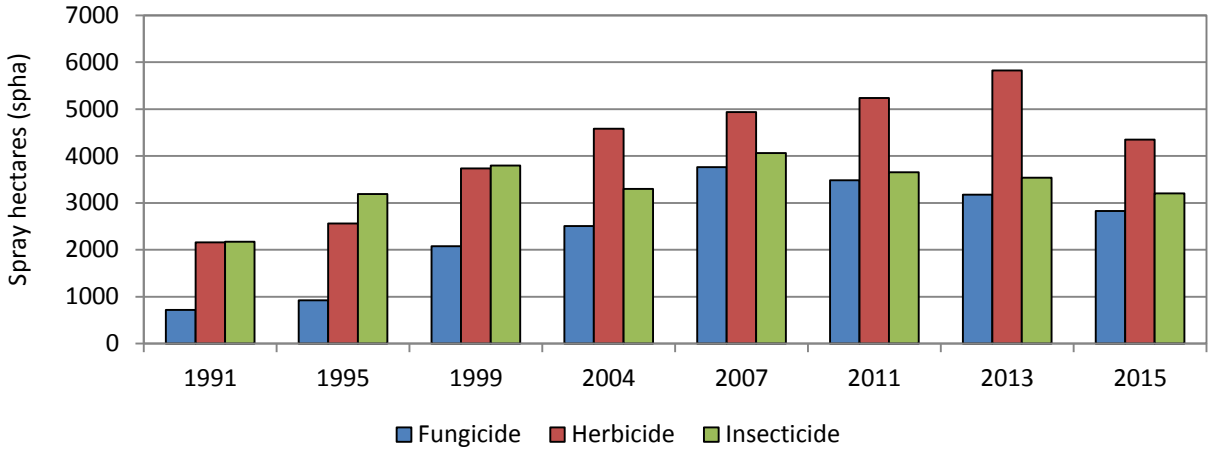
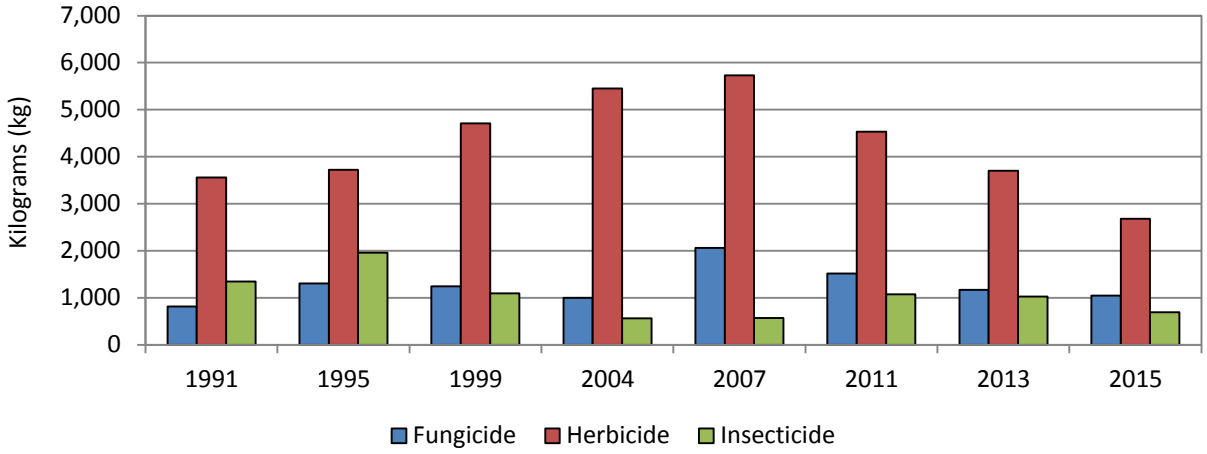


Figure 5: Changes in the weight (kg) of the major pesticide groups applied to outdoor vegetable crops in Northern Ireland between 1991- 2015.



RESULTS AND DISCUSSION

CROPS

The number and areas of crops surveyed are shown in Table 2. Data from 44 farms provided information on 213 examples of 36 crop types. Crops include Brussels sprouts, cabbage, cauliflower, calabrese, turnips, swedes, beans, peas, leeks, onions, carrots, parsnips, celery, parsley, lettuce, beetroot, celeriac, rhubarb and pumpkin. The total area of crops sampled in the survey was representative of the area of vegetable crops grown in Northern Ireland in 2015.

Since the first pesticide usage survey on vegetable crops in 1991 (Jess *et al*., 1993), carrots continue to be the most common outdoor vegetable crop grown in Northern Ireland. Carrots and parsnips collectively represented 40% of the total outdoor vegetable growing area and 55% of the weight of pesticides applied while turnips and swedes accounted for 21% of the area grown and 12% of the weight applied. Leafy and flowerhead brassicas were grown on an estimated 19% of the total area of outdoor vegetable crops, accounting for 12% of the weight of pesticides applied with cabbage accounting for 60% of the area of all brassicas grown and 59% of the weight applied. Alliums including leeks, scallions and onions, collectively accounted for 10% of the total grown area and 9% of the weight applied. Celery and parsley accounted for 6% of both the total area of outdoor vegetable crops grown and the weight of pesticides applied. Lettuce crops accounted for a further 3% of the total area grown and 5% of the total weight applied. Other vegetables accounted for 1% of both the total area and weight of pesticides applied.

In contrast with Great Britain, where peas and beans accounted for the majority of outdoor vegetable crops grown (51% in Scotland and 33% in England and Wales), less than 1% of the total area of outdoor vegetable crops grown in Northern Ireland in 2015 belonged to this crop group, accounting for less than 1% of the total weight of pesticides applied.

Figure 6a: Regional distribution of outdoor vegetable crops grown (ha) in Northern Ireland, 2015.

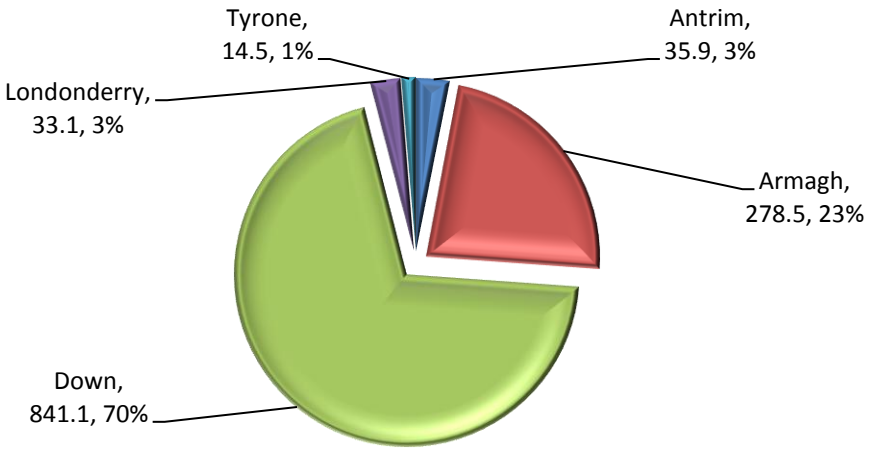


Figure 6b: Proportional areas of the different outdoor vegetable crops grown (ha) in Northern Ireland, 2015.

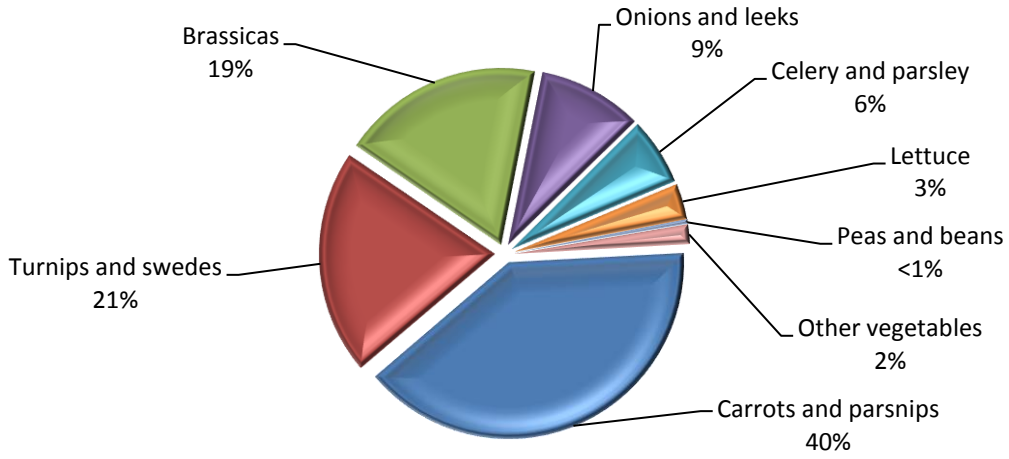


Figure 7a: Pesticide usage (spha) on outdoor vegetable crops in Northern Ireland, 2015.

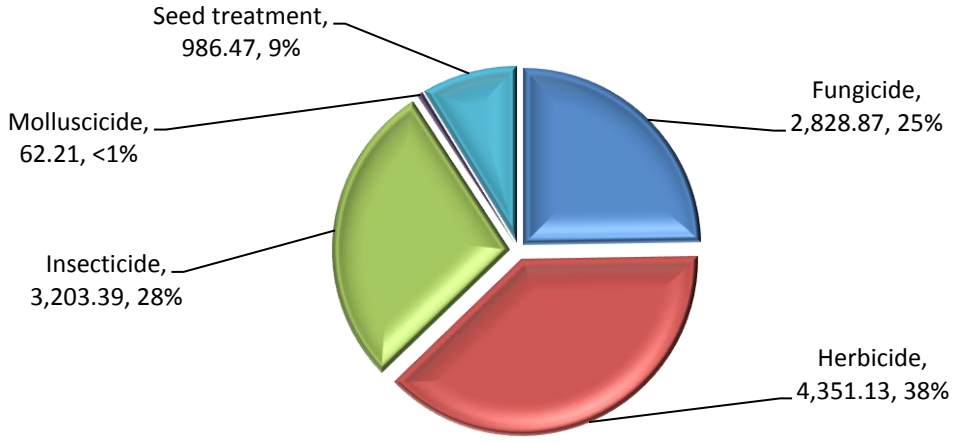


Figure 7b: Pesticide usage (kg) on outdoor vegetable crops in Northern Ireland, 2015.

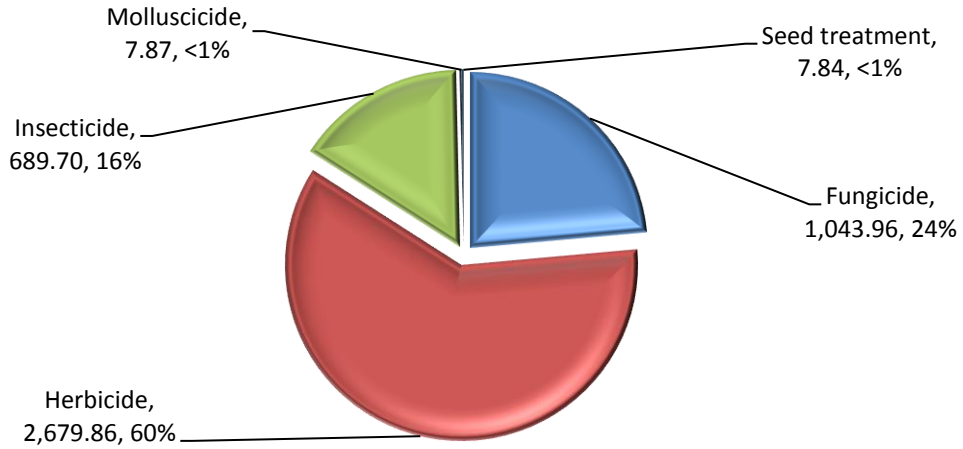


Figure 8: The ten most commonly used pesticide active substances by area treated (spha) in Northern Ireland, 2015.

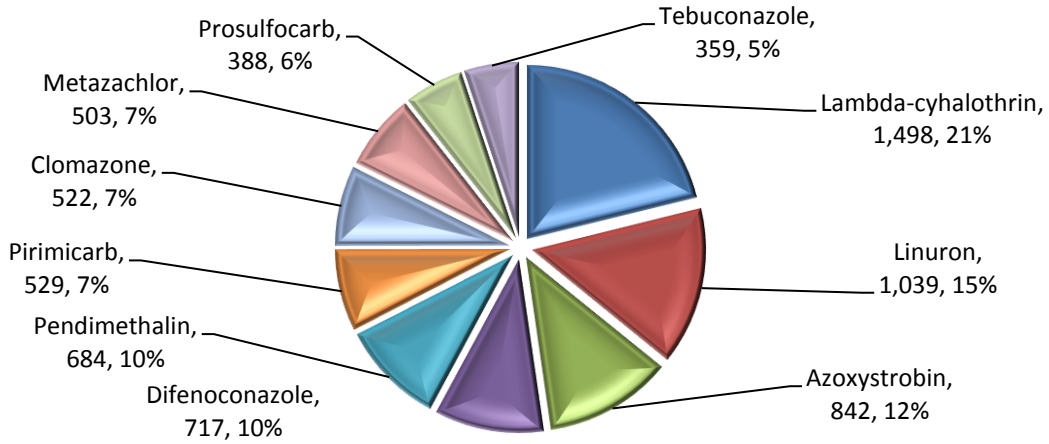


Figure 9: The ten most commonly used pesticide active substances by weight applied (kg) in Northern Ireland, 2015.

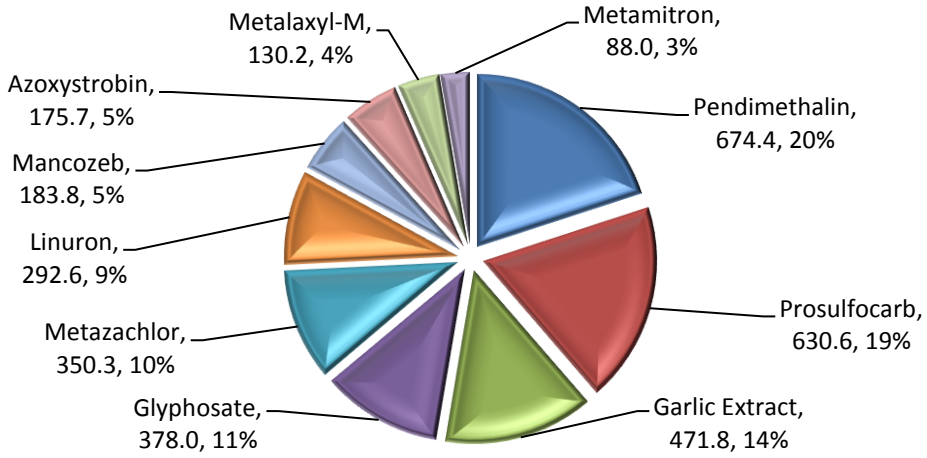


Figure 10: Comparison of the areas of outdoor vegetable crops treated (spha) with fungicides in Northern Ireland, 1991-2015.

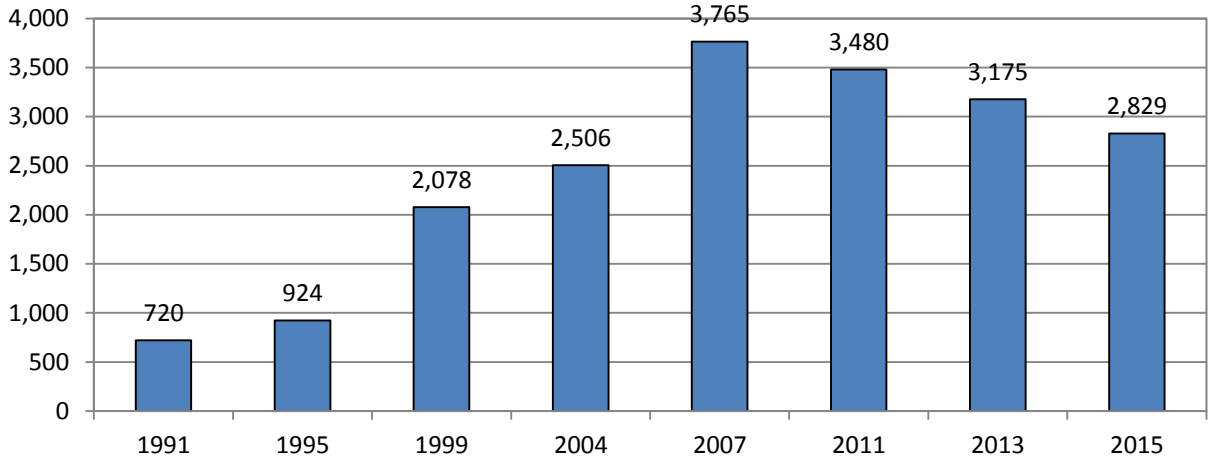


Figure 11: Comparison of the weight of fungicides applied (kg) to outdoor vegetable crops in Northern Ireland, 1991-2015.

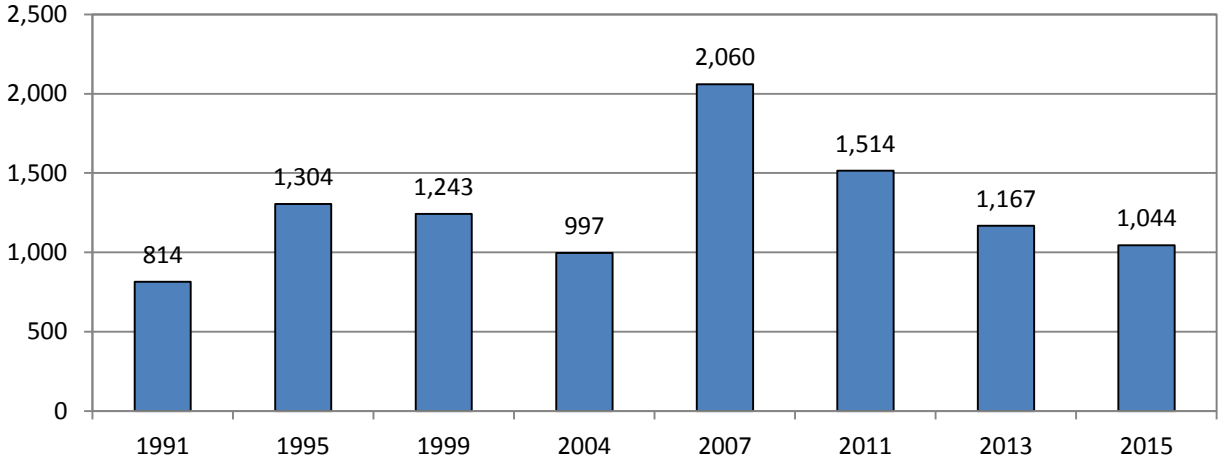


Figure 12: Comparison of the areas (spha) of outdoor vegetable crops treated with herbicides and desiccants in Northern Ireland, 1991-2015.

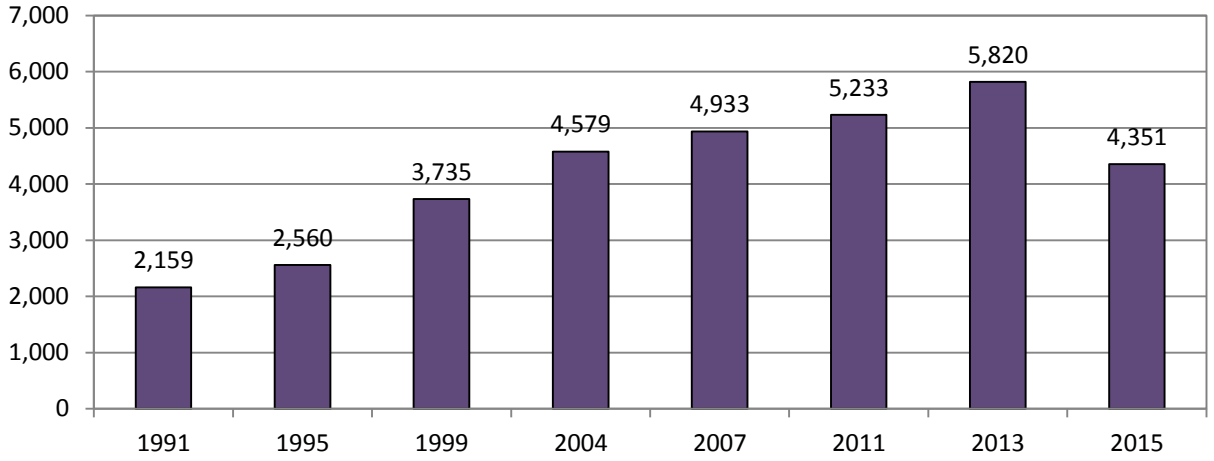


Figure 13: Comparison of the weight (kg) of herbicides and desiccants applied to outdoor vegetable crops in Northern Ireland, 1991-2015.

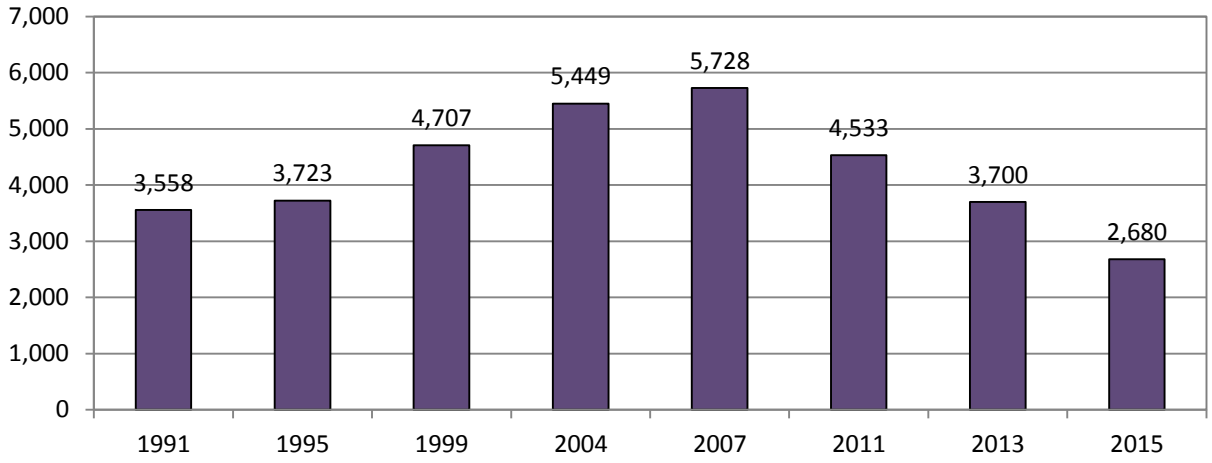


Figure 14: Comparison of the areas (spha) of outdoor vegetable crops treated with insecticides in Northern Ireland, 1991-2015.

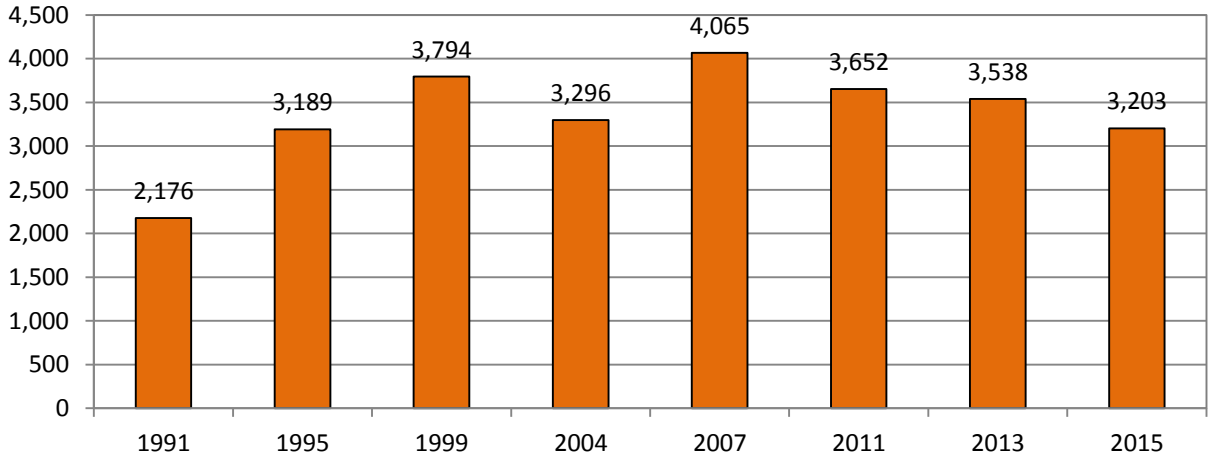


Figure 15: Comparison of the weight (kg) of insecticides applied to outdoor vegetable crops in Northern Ireland, 1991-2015.

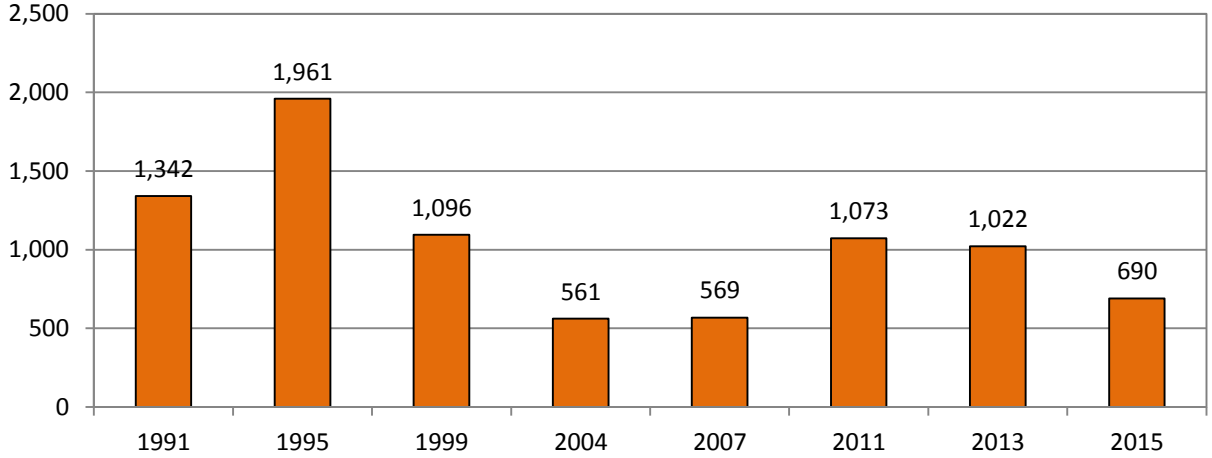


Figure 16: Comparison of the areas (spha) of outdoor vegetable crops treated with molluscicides in Northern Ireland, 1991-2015.

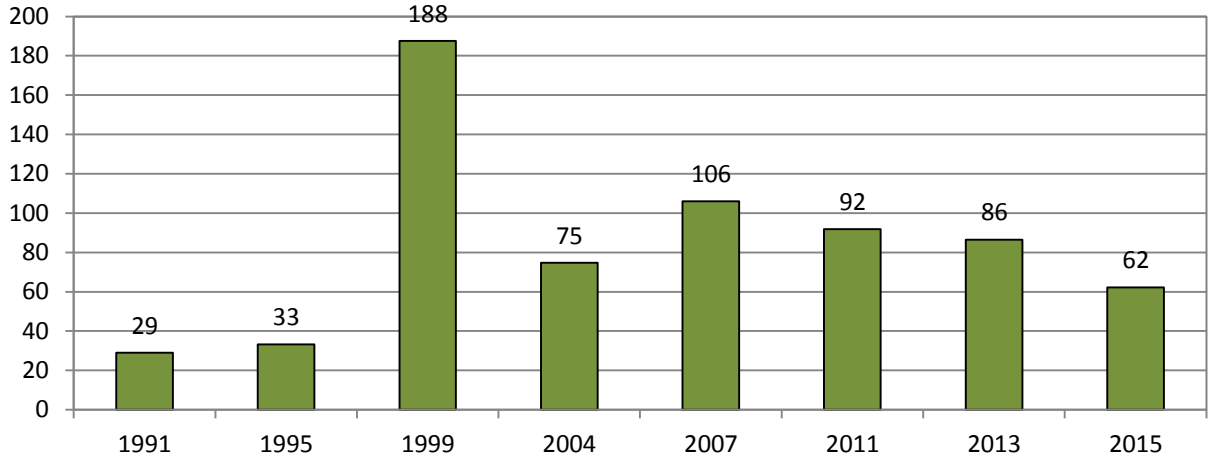


Figure 17: Comparison of the weight (kg) of molluscicides applied to outdoor vegetable crops in Northern Ireland, 1991-2015.

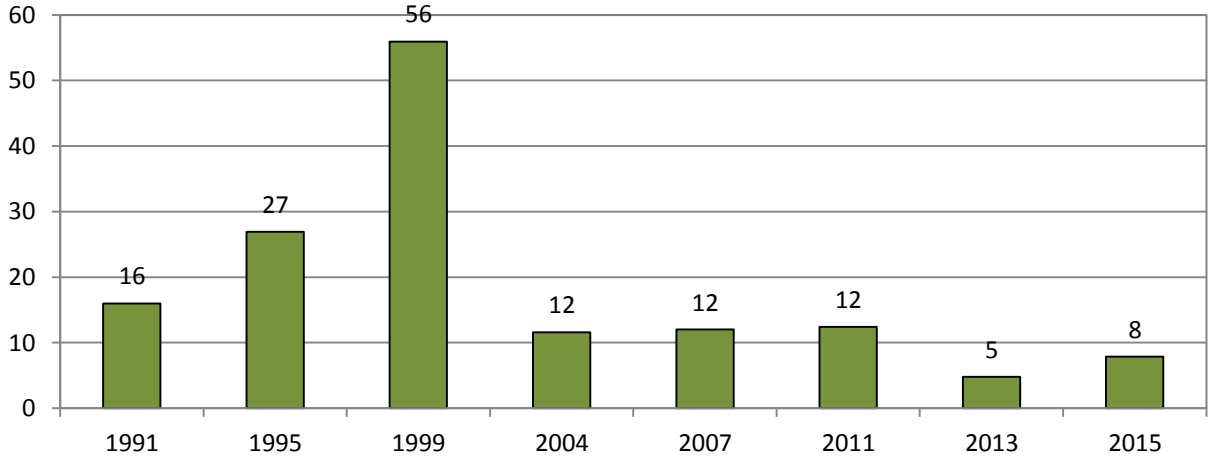


Figure 18: Comparison of the areas (spha) of outdoor vegetable crops with treated seed in Northern Ireland, 1991-2015.

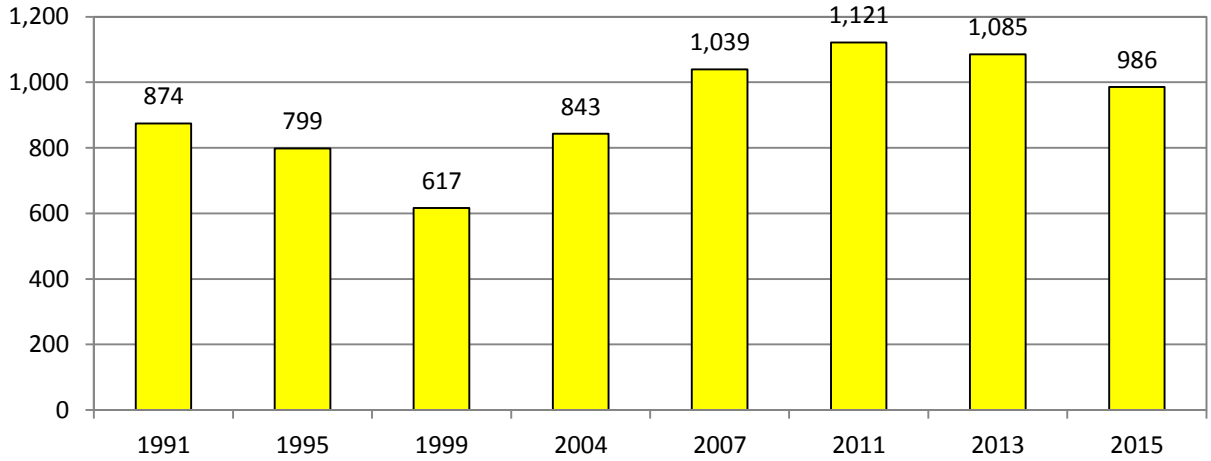
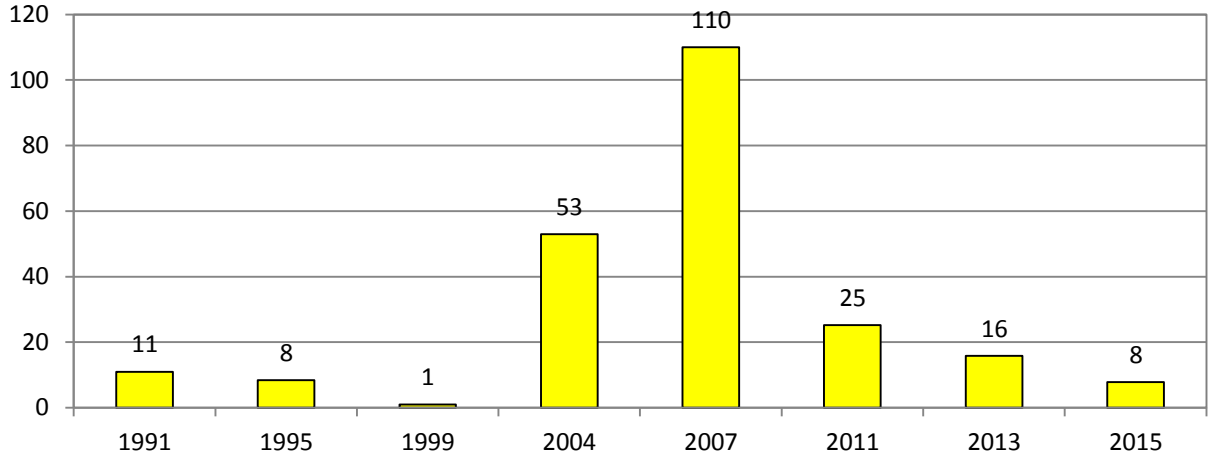


Figure 19: Comparison of the weight (kg) of seed treatments applied to outdoor vegetable crops in Northern Ireland, 1991-2015.



PESTICIDE USAGE ON CROPS (Tables 5 & 6)

An in depth analysis of pesticide usage on crops is contained on pages 17-62 and contains the following crop groupings: Carrots and parsnips, Turnips and swedes, Leafy and flowerhead brassicas, Onions and leeks, Celery and parsley, Lettuce, Peas and beans and Other vegetables (see Definitions and notes). Information relating to the basic grown area (ha), basic treated area (ha), total treated area (spha) and quantity applied (kg) of the three main pesticide types (fungicides, herbicides and insecticides) is included along with the reasons given for their use. Information relating to the use of molluscicides and seed treatments is included on pages 62-64.

PROPORTION OF CROPS TREATED (Table 7)

The proportional areas of crops treated with different pesticide groups, together with the number of spray applications (in parentheses) are shown in Table 7. Celeriac and rhubarb were the only crops not to receive any treatments.

All crop types, with the exception of summer cabbage, purple broccoli and kale, received fungicide treatments. All autumn cabbage and autumn cauliflower crops received five applications of fungicide active substances while only 8% of summer scallions received a single fungicide application. All crops were treated with an average of two herbicide applications.

Kale, leeks, soup leeks, purple broccoli, salad onion and swedes were the only crops not to receive an insecticide treatment with the remainder receiving on average two insecticide applications. An estimated 24% of table leeks received two and a half applications of insecticide. All winter cabbage received approximately four insecticide applications and 86% of red cabbage received four and a half applications.

Brussels sprouts (14%), turnips (27%) and lettuce (62%) were the only crops to receive a molluscicide application.

TOTAL PESTICIDE USAGE (Tables 8 & 9)

An estimated 4,429 kilograms of pesticide active ingredients were applied to 11,298 spray hectares of outdoor vegetable crops grown in Northern Ireland in 2015.

An estimated 58% of all fungicide applications were made to carrot and parsnip crops, with a further 18% applied to brassica crops. The formulated mixture of the fungicides azoxystrobin/difenoconazole was the most frequently used fungicide, mainly on carrot and parsnip crops, accounting for 16% of the total fungicide-treated area and 14% of the weight of fungicides used. Azoxystrobin, applied to 14% of the total fungicide-treated area, accounted for 8% of the quantity of fungicides used and was applied mainly to brassica and lettuce crops.

Carrot and parsnip crops collectively accounted for 56% of all herbicide and desiccant applications, with a further 12% being applied to allium crops. Linuron was the herbicide/desiccant active ingredient most frequently used (accounting for 24% of the total herbicide/desiccant-treated area and 11% of the quantity used). An estimated 91% of all linuron applications were to carrot and parsnip crops. Pendimethalin, applied to 14% of the total herbicide/desiccant-treated area, represented 24% of the quantity of herbicide/desiccant applied and was primarily used (77%) on carrot and parsnip crops. With the exception of two formulations, herbicide and desiccants were applied as single active substances. Glyphosate was the only herbicide/desiccant used on all crop types, accounting for 7% of the herbicide/desiccant-treated area and 14% of the quantity applied.

Lambda-cyhalothrin accounted for 47% of the total insecticide-treated area but only 2% of the quantity of insecticides applied. An estimated 84% of all applications of this active ingredient were applied to carrot and parsnip crops, for general insect control and aphids. Garlic extract, a naturally occurring animal repellent, accounted for only 6% of the total area treated with insecticides but 68% of the total weight applied, primarily as an insect deterrent on turnip and swede crops. This was due to the high application rates of these products.

Molluscicide treatments were applied to less than 1% of both the total pesticide-treated area and quantity of pesticides applied to vegetable crops. Turnip and swede crops received 56% of all molluscicide applications accounting for 66% of the weight of all molluscicides applied.

Seed treatments applied to outdoor vegetable crops grown in 2015 accounted for 9% of the pesticide-treated area while representing less than 1% of the quantity of active ingredients applied. Seed treatments were mainly applied to carrot and parsnip seeds (59%) and turnip and swede seeds (26%). The formulation cymoxanil/fludioxonil/metalaxyl-M was used to treat 49% of all seed, 98% of which was applied to carrot and parsnip seed. An estimated 70% of all thiram seed treatments were applied to turnip and swede seeds.

The fifty most commonly used active ingredients, ranked by spray area (spha) and weight (kg), are shown in Tables 10 and 11, respectively.

PESTICIDE USAGE ON CARROTS AND PARSNIPS

- 477 hectares of carrot and parsnip crops grown in Northern Ireland.
- 476 basic treated area (ha)
- 6,740 total treated area (spha)
- 2,424 kg applied
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to carrot and parsnip crops.

Figure 20: Pesticide usage on carrot and parsnip crops in Northern Ireland, 2015.

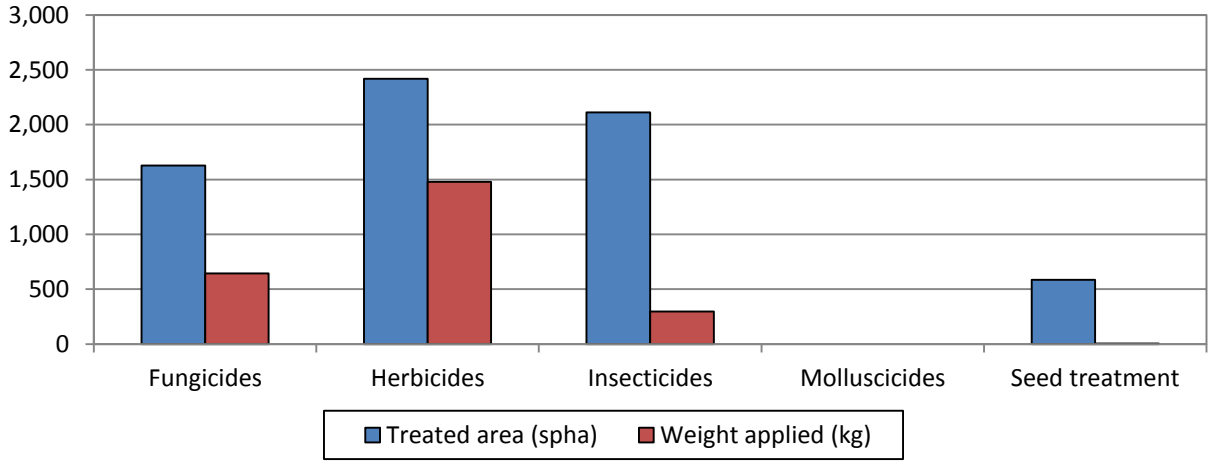


Figure 21: Regional distribution of carrot and parsnip crops grown (ha) in Northern Ireland, 2015.

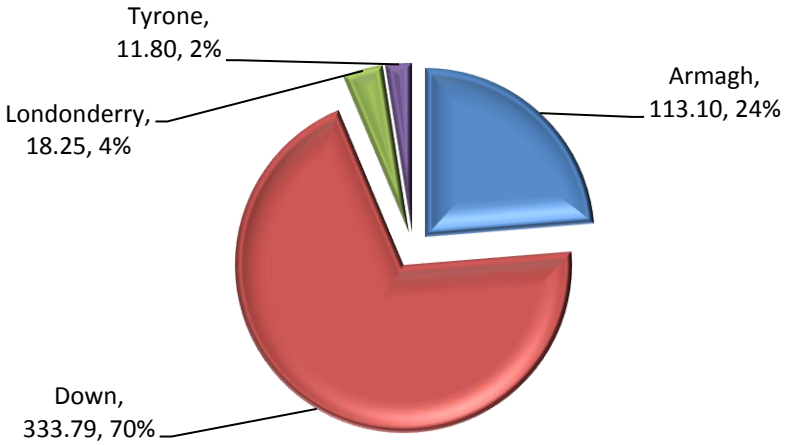


Figure 22: Pesticide usage (spha) on carrot and parsnip crops in Northern Ireland, 2015.

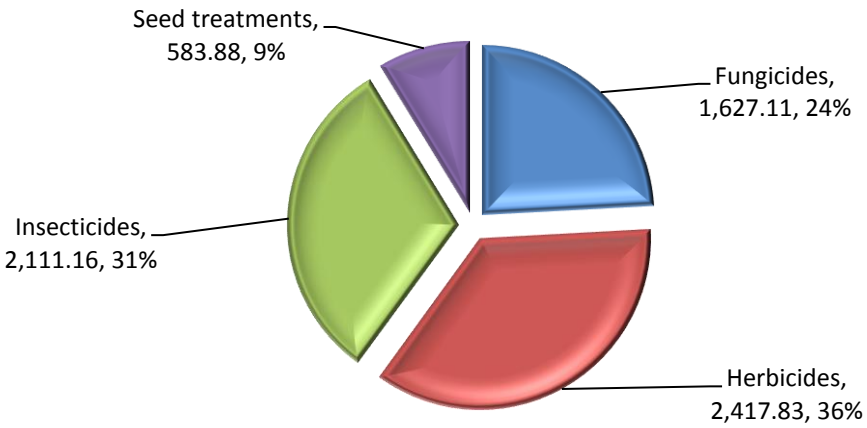
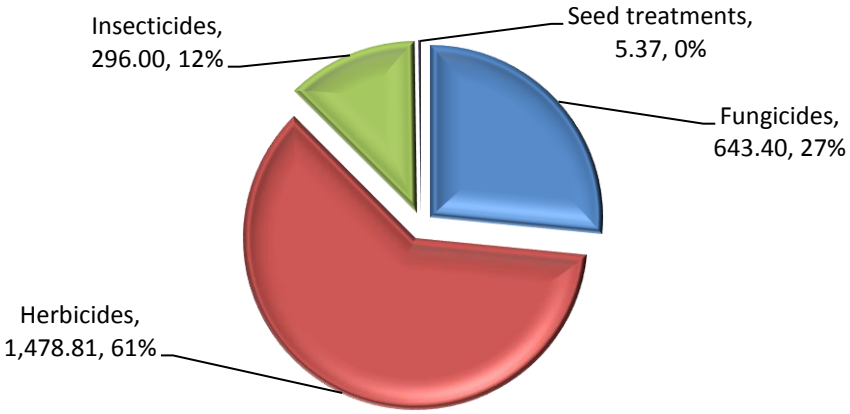


Figure 23: Weight of pesticides (kg) applied to carrot and parsnip crops in Northern Ireland, 2015.



Carrots and parsnips – Fungicides

- Basic treated area: 406 hectares
- Total treated area: 1,627 spray hectares
- Weight of active substances applied: 643 kg
- The five most commonly applied formulations and active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Azoxystrobin/difenoconazole	367	199	119	23
Boscalid/pyraclostrobin	227	227	76	14
Metalaxyl-M	235	235	126	14
Prothioconazole	197	146	38	12
Tebuconazole	154	137	38	10

Figure 24: Fungicide active substance usage (spha) on carrot and parsnip crops in Northern Ireland, 2015.

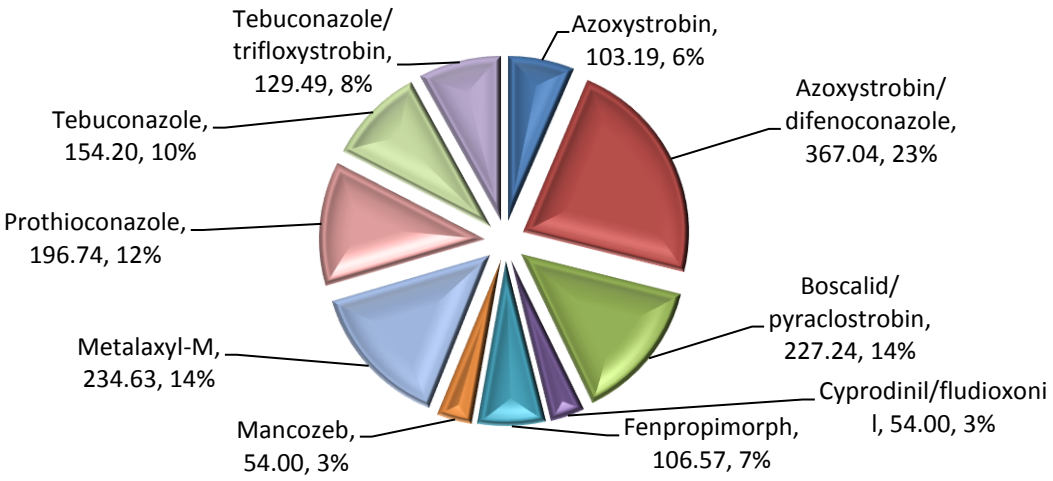


Figure 25: Weight of fungicide active substances (kg) applied to carrot and parsnip crops in Northern Ireland, 2015.

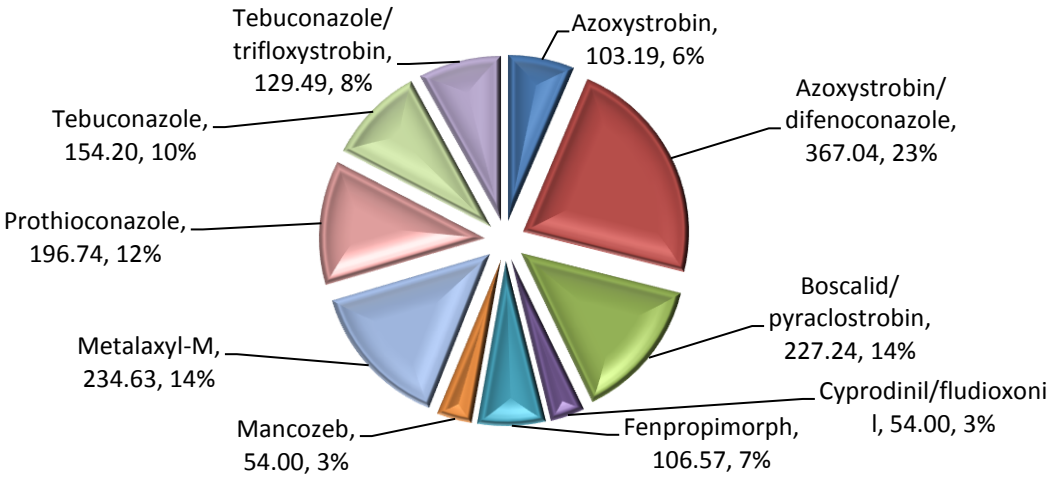
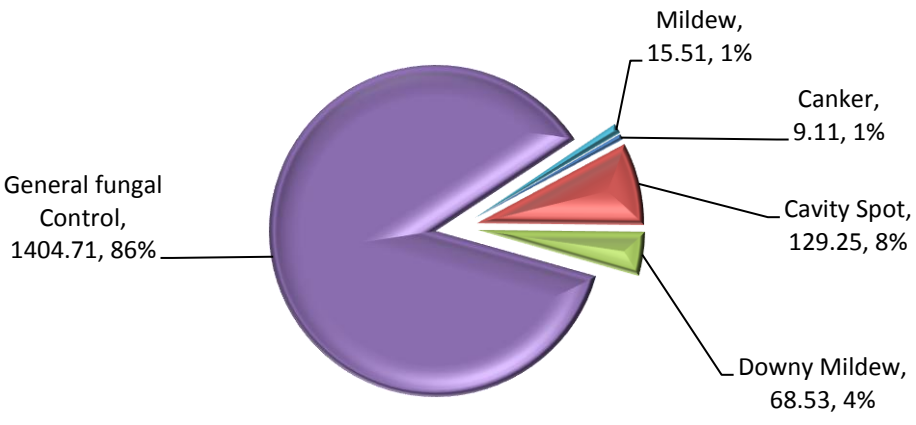


Figure 26: Carrots and parsnips: reasons for fungicide use (spha).



Carrots and parsnips – Herbicides & desiccants

- Basic treated area: 476 hectares
- Total treated area: 2,418 spray hectares
- Weight of active substances applied: 1,479 kg
- Clomazone only applied to carrots
- The five most commonly applied formulations and active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Clomazone	204	204	14	8
Linuron	936	476	249	39
Metribuzin	241	241	46	10
Pendimethalin	468	414	540	19
Prosulfocarb	244	230	421	10

Figure 27: Herbicide and desiccant active substance usage (spha) on carrot and parsnip crops in Northern Ireland, 2015.

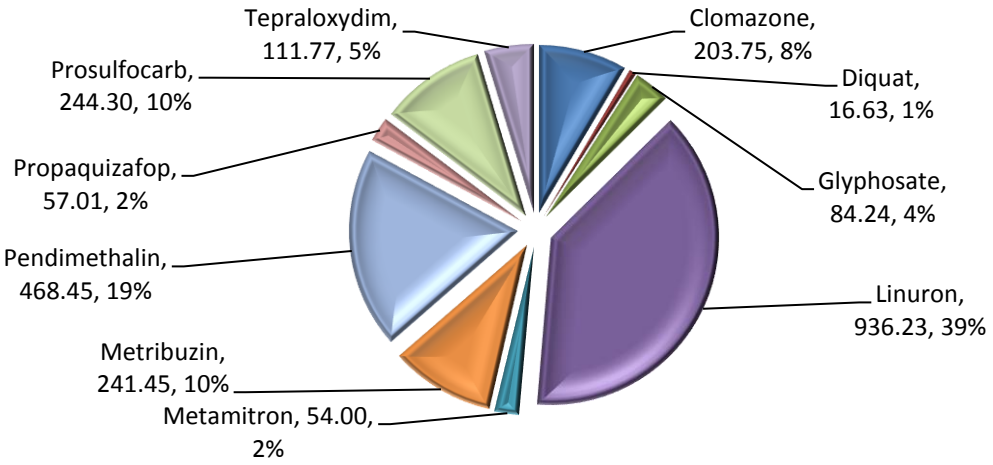


Figure 28: Weight of herbicide and desiccant active substances (kg) applied to carrot and parsnip crops in Northern Ireland, 2015.

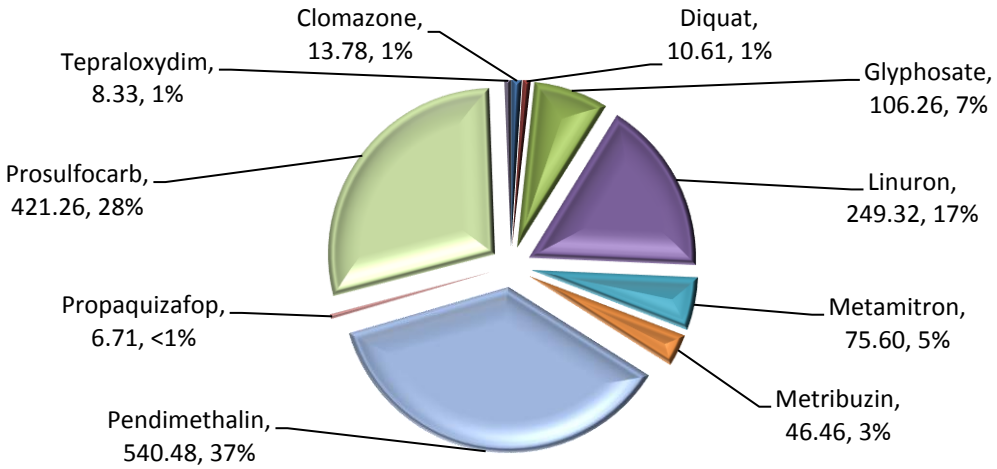
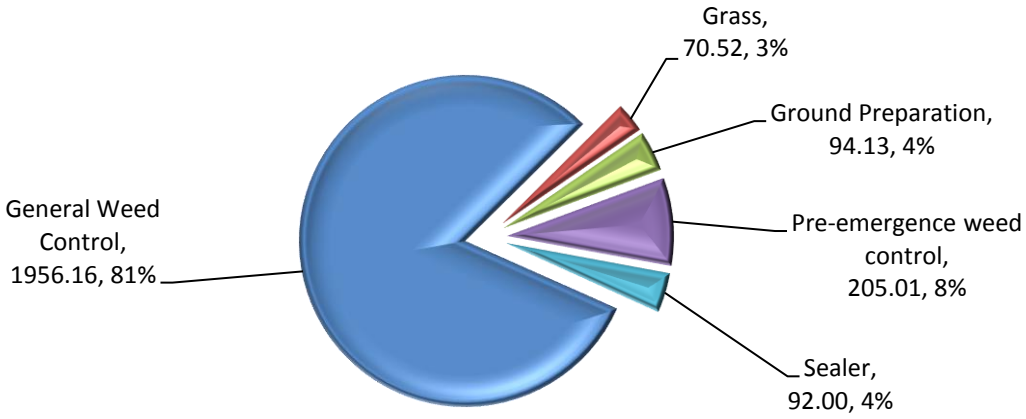


Figure 29: Carrots and parsnips: reasons for herbicide use (spha).



Carrots and parsnips – Insecticides

- Basic treated area: 431 hectares
- Total treated area: 2,111 spray hectares
- Weight of active substances applied: 296 kg
- The five most commonly applied formulations and active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Deltamethrin	224	173	2	11
Lambda-cyhalothrin	1,247	428	13	59
Oxamyl	82	82	74	4
Pirimicarb	233	223	23	11
Thiacloprid	302	252	29	14

Figure 30: Insecticide active substance usage (spha) on carrot and parsnip crops in Northern Ireland, 2015.

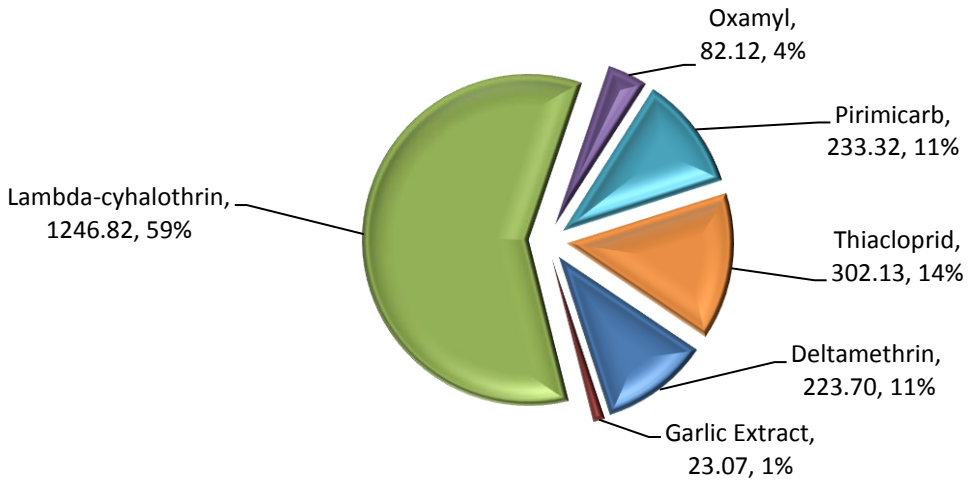


Figure 31: Weight of insecticide active substances (kg) applied to carrot and parsnip crops in Northern Ireland, 2015.

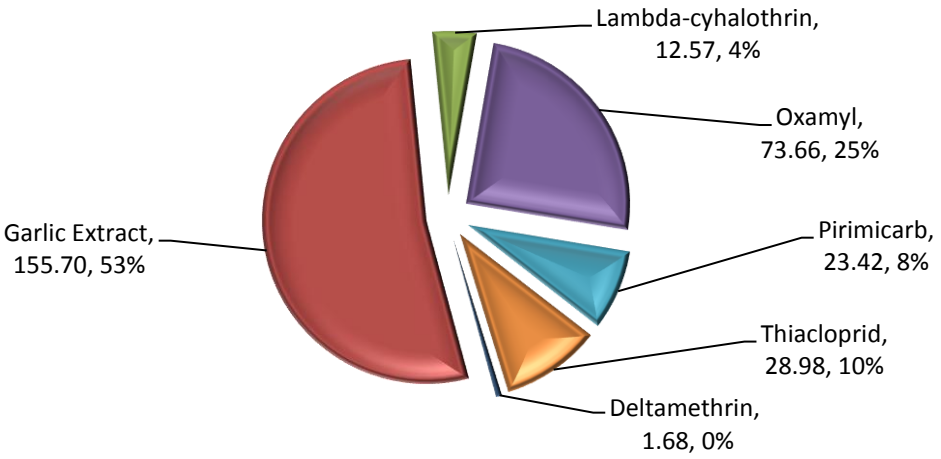
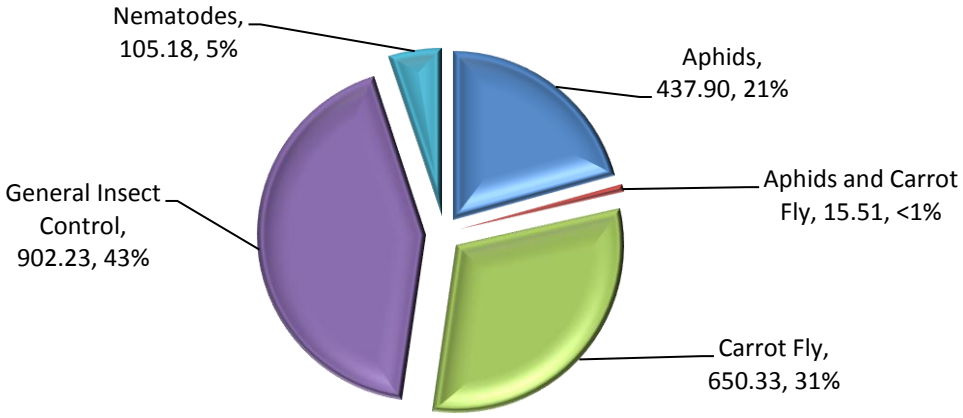


Figure 32: Carrots and parsnips: reasons for insecticide use (spha).



PESTICIDE USAGE ON TURNIPS AND SWEDES

- 249 hectares of turnip and swede crops grown in Northern Ireland.
- 228 basic treated area (ha)
- 933 total treated area (spha)
- 544 kg applied
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to turnip and swede crops.

Figure 33: Pesticide usage on turnip and swede crops in Northern Ireland, 2015.

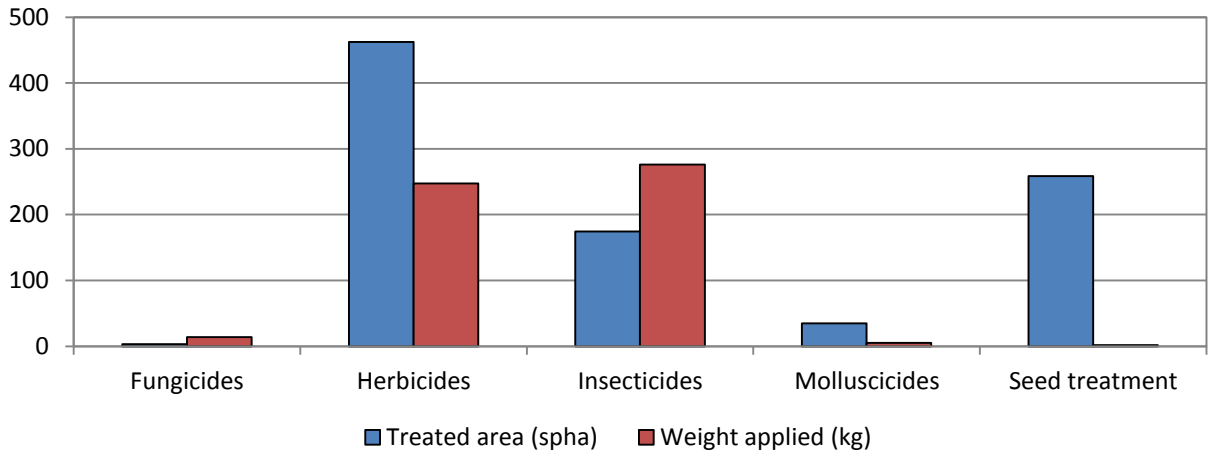


Figure 34: Regional distribution of turnip and swede crops grown (ha) in Northern Ireland, 2015.

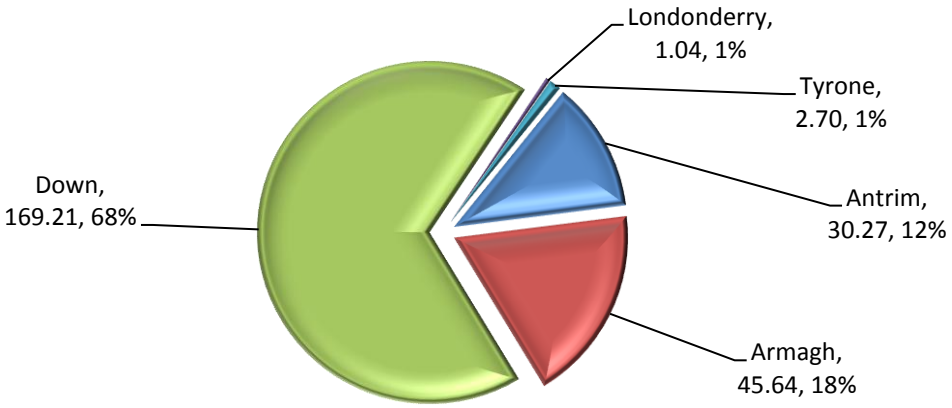


Figure 35: Pesticide usage (spha) on turnip and swede crops in Northern Ireland, 2015.

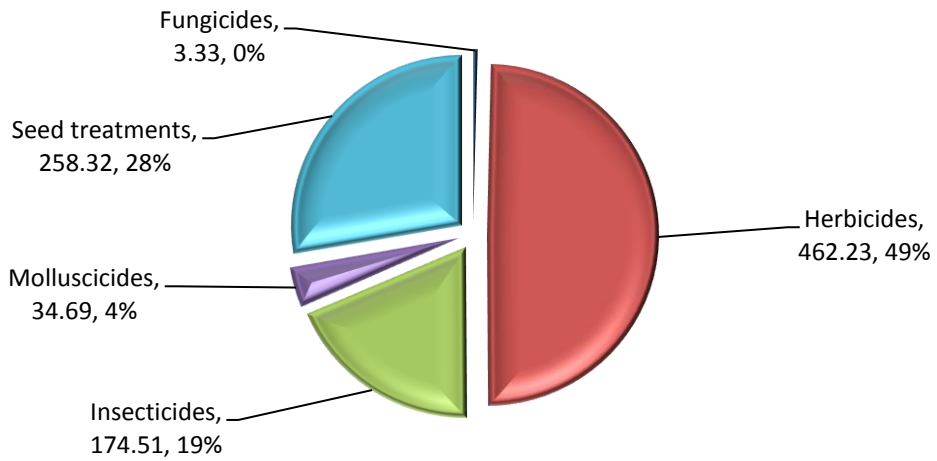
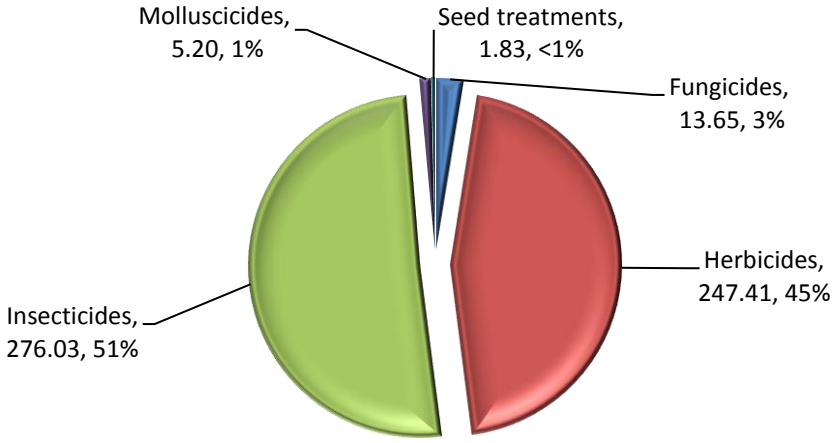


Figure 36: Weight of pesticides (kg) applied to turnip and swede crops in Northern Ireland, 2015.



Turnips and swedes – Fungicides

- Basic treated area: 2 hectares
- Total treated area: 3 spray hectares
- Weight of active substances applied: 14 kg
- Swedes received no fungicide treatments
- The only two fungicide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Prothioconazole	2	2	<1	50
Sulphur	2	2	13	50

Figure 37: Fungicide active substance usage (spha) on turnip crops in Northern Ireland, 2015.

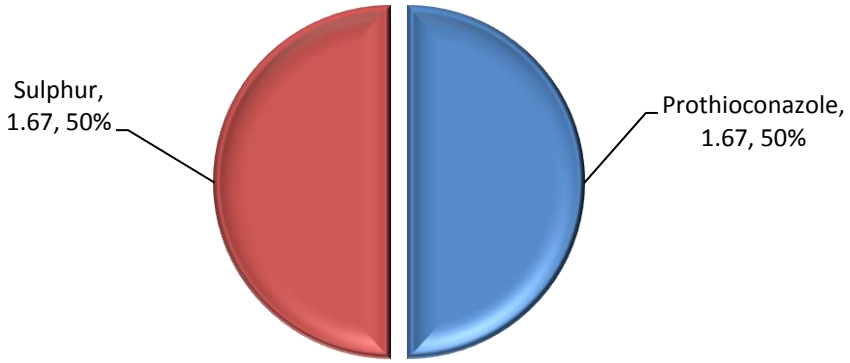


Figure 38: Weight of fungicide active substances (kg) applied to turnip crops in Northern Ireland, 2015.

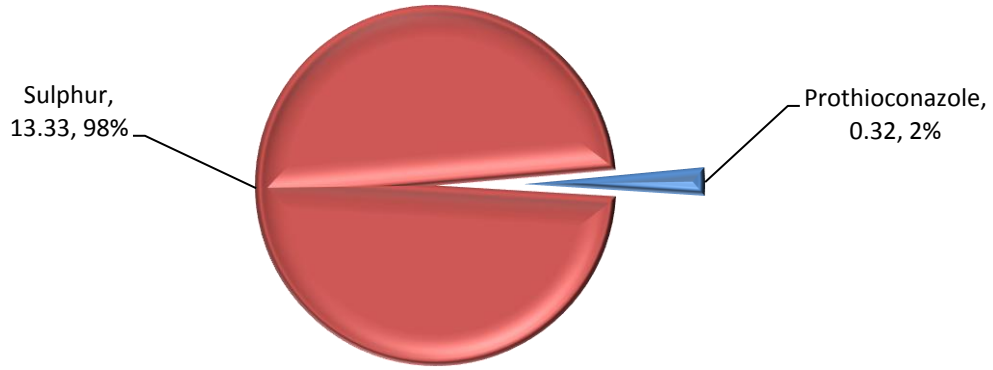
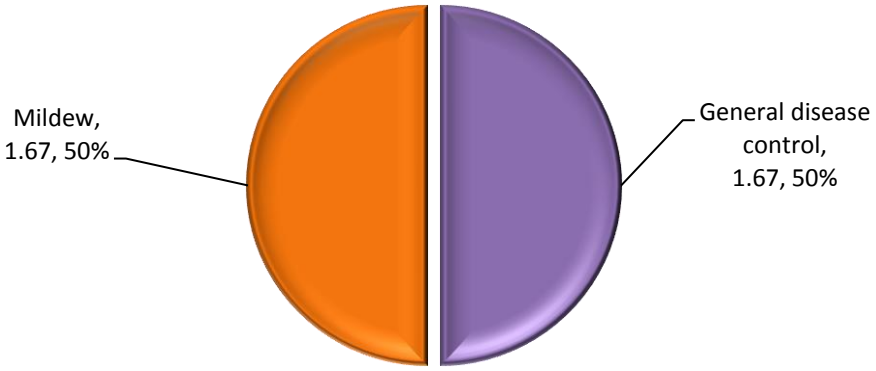


Figure 39: Turnips: reasons for fungicide use (spha).



Turnips and swedes – Herbicides and desiccants

- Basic treated area: 228 hectares
- Total treated area: 462 spray hectares
- Weight of active substances applied: 247 kg
- The herbicide and desiccant active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Clomazone	187	187	11	40
Clopyralid	1	1	<1	<1
Glyphosate	87	86	108	19
Metazachlor	187	187	128	41

Figure 40: Herbicide and desiccant active substance usage (spha) on turnip and swede crops in Northern Ireland, 2015.

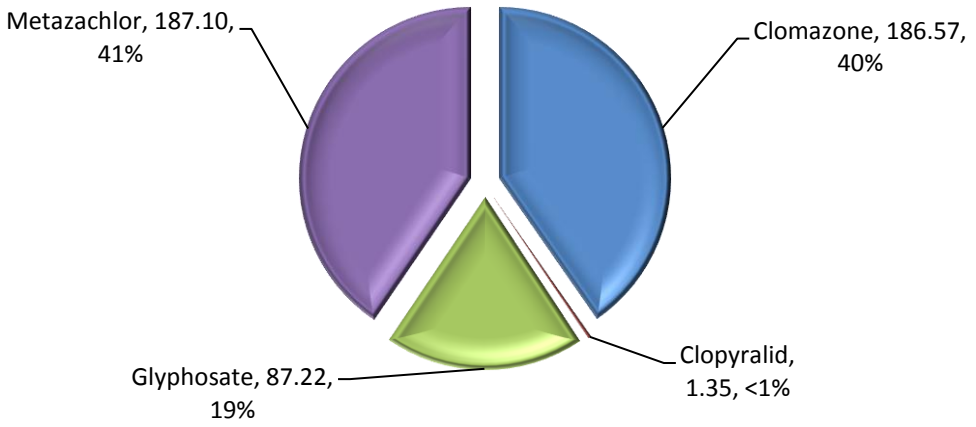


Figure 41: Weight of herbicide and desiccant active substance usage (kg) on turnip and swede crops in Northern Ireland, 2015.

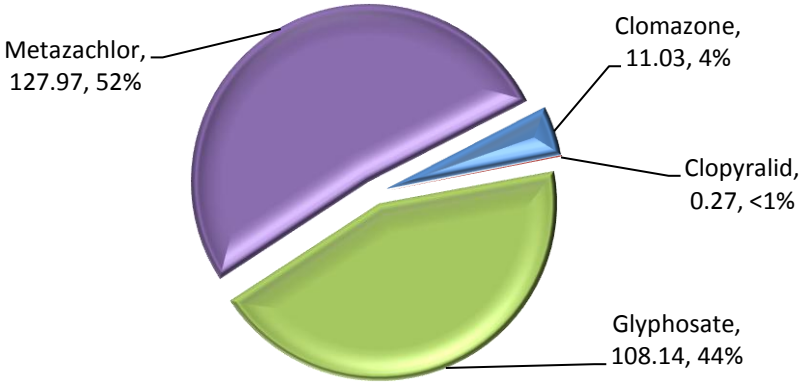
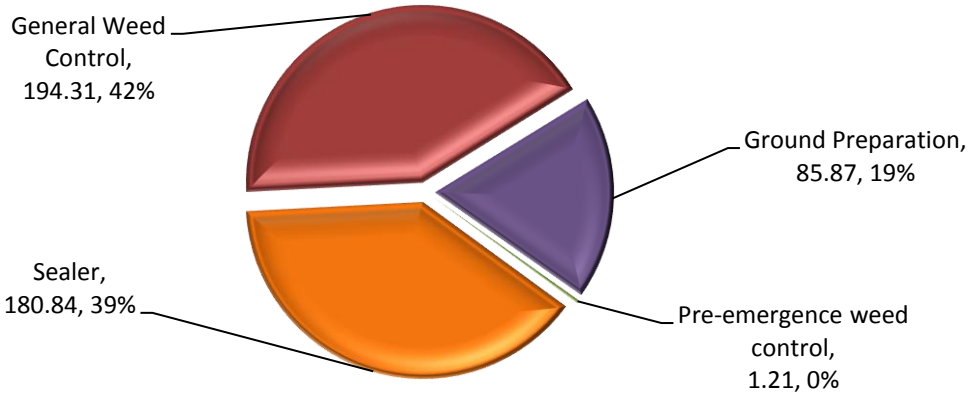


Figure 42: Turnip and swede: reasons for herbicide and desiccant use (spha).



Turnips and swedes – Insecticides

- Basic treated area: 24 hectares
- Total treated area: 175 spray hectares
- Weight of active substances applied: 276 kg
- Swedes received no insecticide treatments
- The insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Deltamethrin	2	2	<1	<1
Garlic Extract	170	24	276	99
Lambda-cyhalothrin	2	1	<1	<1

Figure 43: Insecticide active substance usage (spha) on turnip crops in Northern Ireland, 2015.

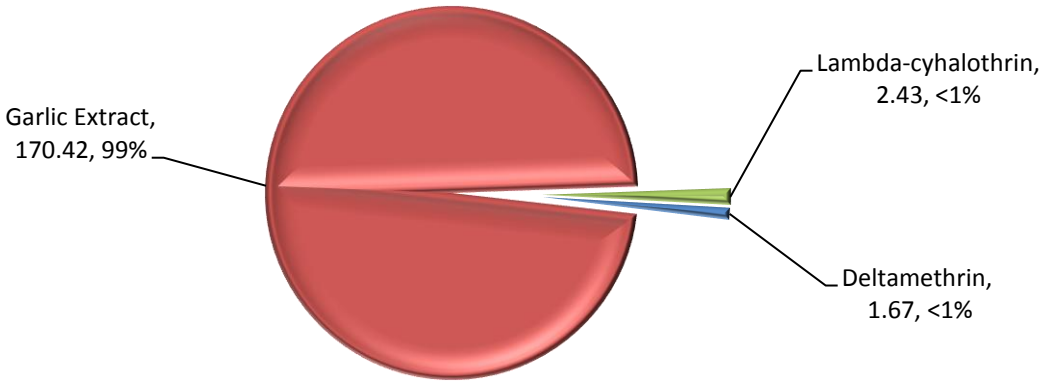


Figure 44: Weight of insecticide active substance usage (kg) on turnip crops in Northern Ireland, 2015.

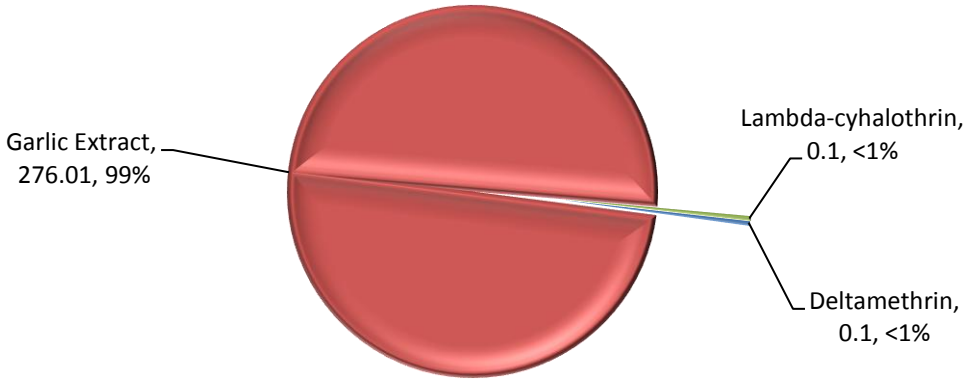
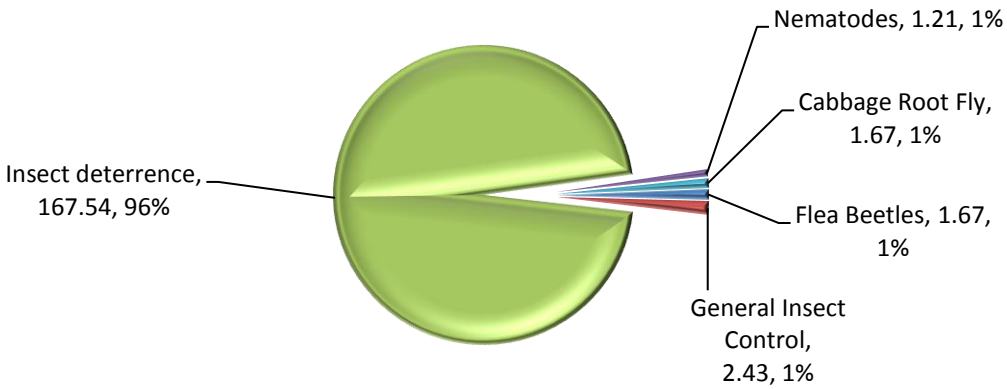


Figure 45: Turnips: reasons for insecticide use (spha).



PESTICIDE USAGE ON LEAFY AND FLOWERHEAD BRASSICAS

- 224 hectares of leafy and flowerhead brassica crops grown in Northern Ireland.
- 223 basic treated area (ha)
- 1,627 total treated area (spha)
- 511 kg applied
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to each brassica crop.

Figure 46: Pesticide usage on leafy and flowerhead brassica crops in Northern Ireland, 2015.

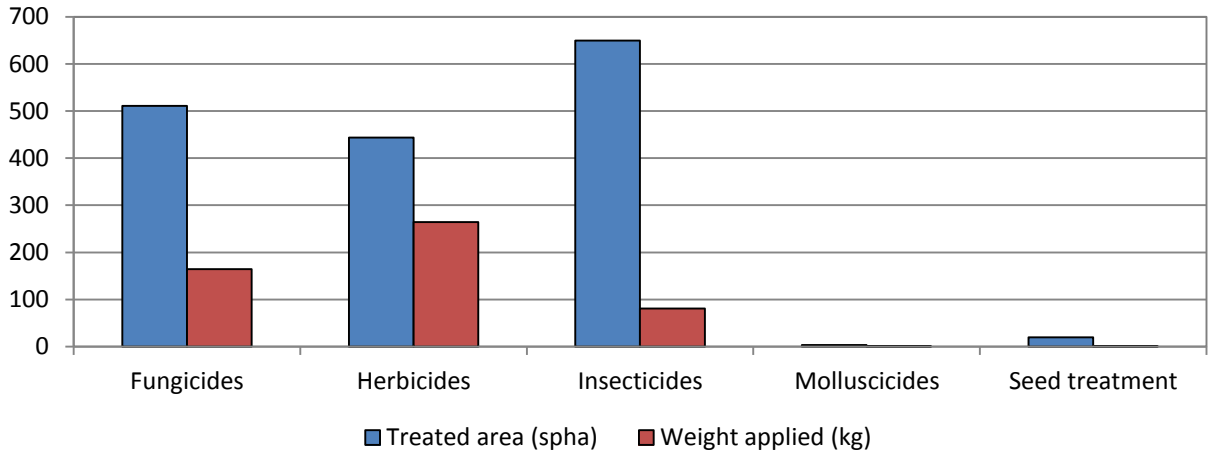


Figure 47: Regional distribution of leafy and flowerhead brassica crops grown (ha) in Northern Ireland, 2015.

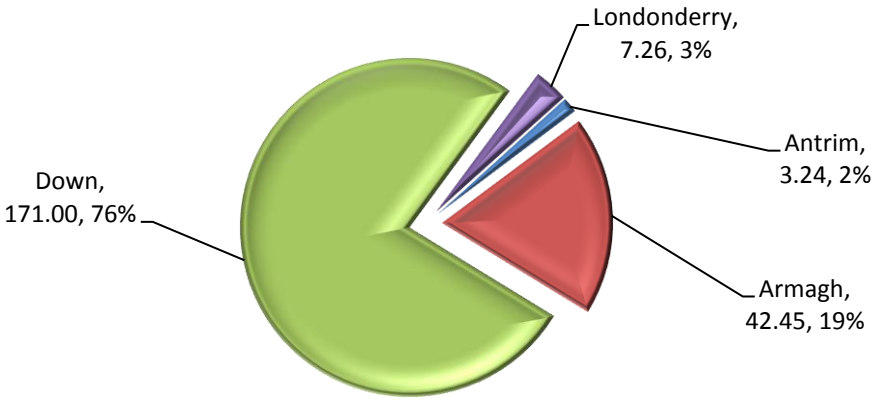


Figure 48: Pesticide usage (spha) on leafy and flowerhead brassica crops in Northern Ireland, 2015.

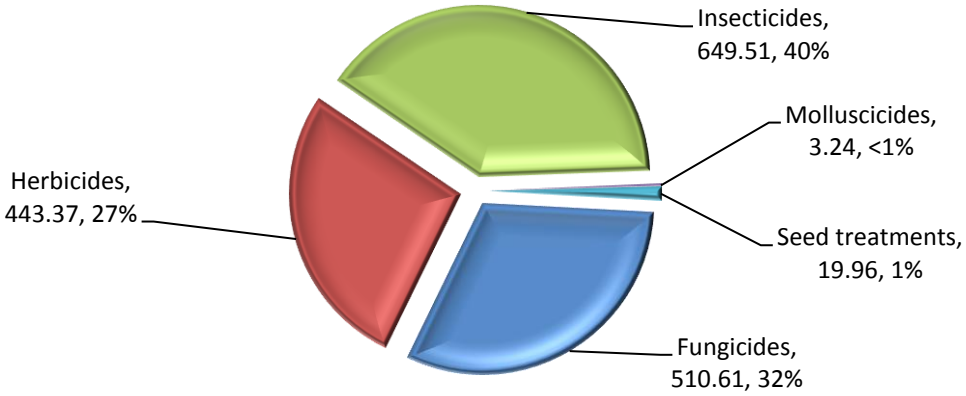
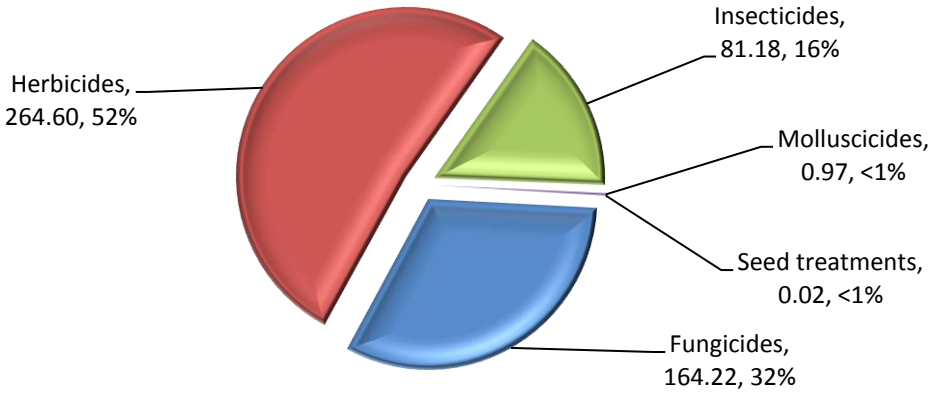


Figure 49: Weight of pesticides (kg) applied to leafy and flowerhead brassica crops in Northern Ireland, 2015.



Leafy and flowerhead brassicas – Fungicides

- Basic treated area: 183 hectares
- Total treated area: 511 spray hectares
- Weight of active substances applied: 164 kg
- The five most commonly applied fungicide active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Azoxystrobin	81	47	20	16
Azoxystrobin/difenoconazole	73	69	24	14
Boscalid/pyraclostrobin	51	51	17	10
Chlorothalonil/metalaxyl-M	46	46	49	9
Difenoconazole	208	158	15	41

Figure 50: Fungicide active substance usage (spha) on leafy and flowerhead brassica crops in Northern Ireland, 2015.

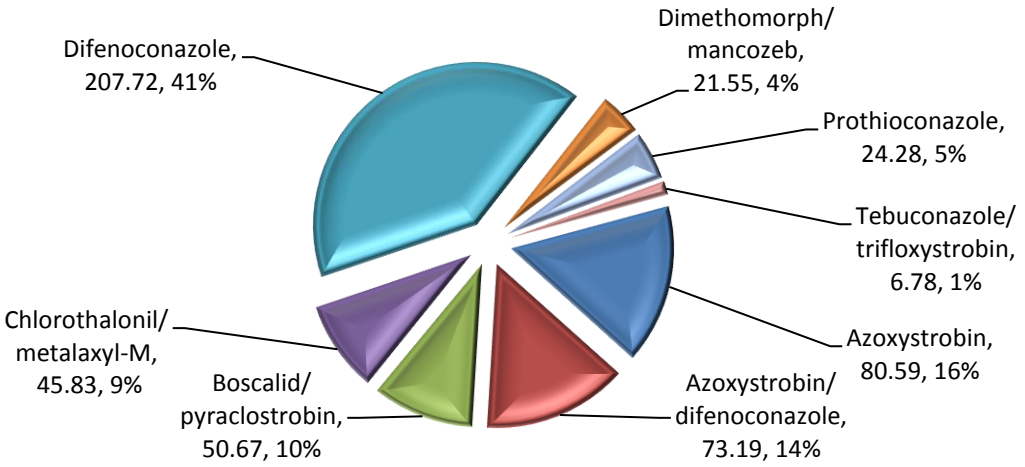


Figure 51: Weight of fungicide active substances (kg) applied to leafy and flowerhead brassica crops in Northern Ireland, 2015.

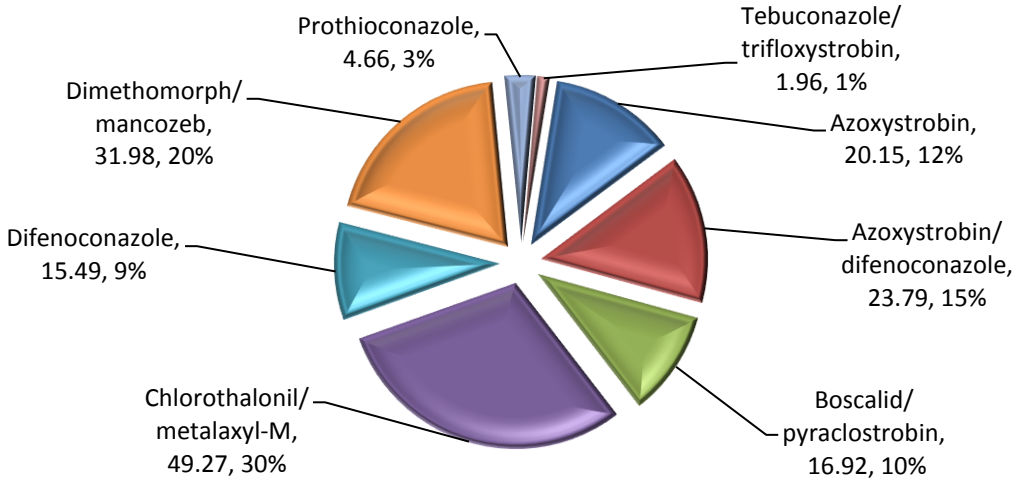
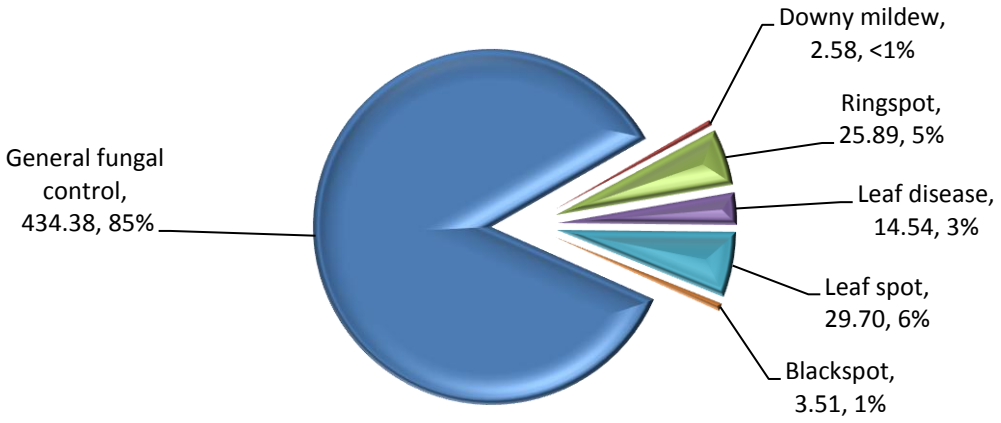


Figure 52: Leafy and flowerhead brassicas: reasons for fungicide use (spha).



Leafy and flowerhead brassicas – Herbicides and desiccants

- Basic treated area: 223 hectares
- Total treated area: 443 spray hectares
- Weight of active substances applied: 265 kg
- The most commonly applied herbicide and desiccant active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Clomazone	131	99	8	30
Glyphosate	43	43	60	10
Ioxynil	3	3	1	1
Metazachlor	256	214	189	57
Pendimethalin	5	5	6	1

Figure 53: Herbicide and desiccant active substance usage (spha) on leafy and flowerhead brassica crops in Northern Ireland, 2015.

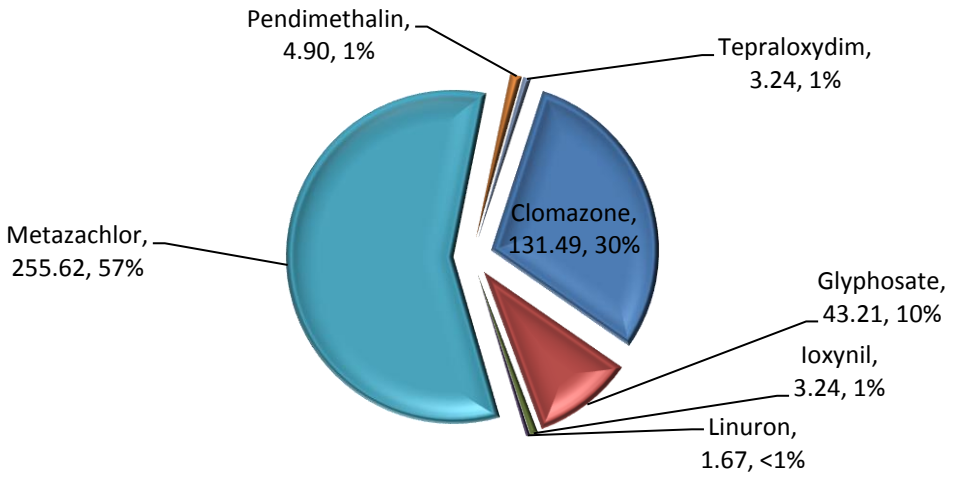


Figure 54: Weight of herbicide and desiccant active substance usage (kg) on leafy and flowerhead brassica crops in Northern Ireland, 2015.

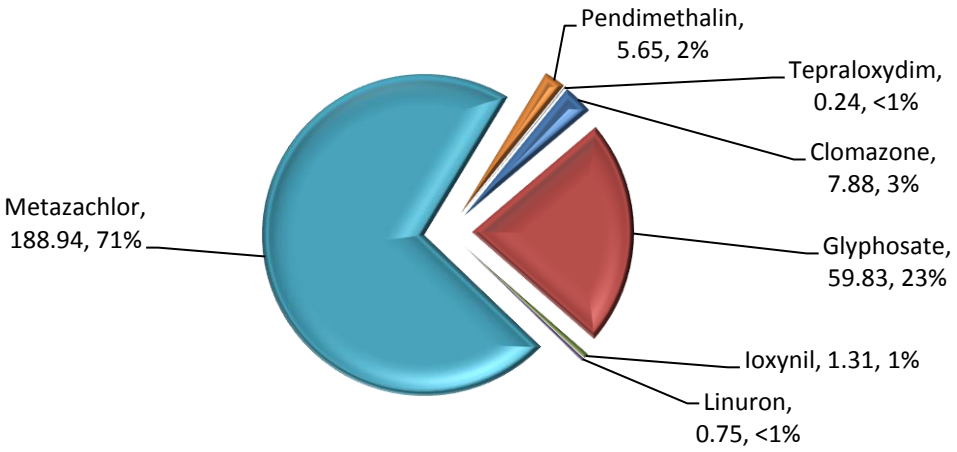
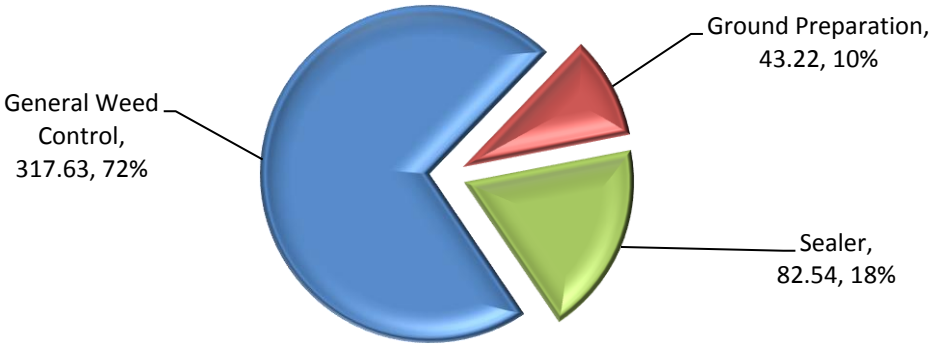


Figure 55: Leafy and flowerhead brassicas: reasons for herbicide and desiccant use (spha).



Leafy and flowerhead brassicas – Insecticides

- Basic treated area: 201 hectares
- Total treated area: 650 spray hectares
- Weight of active substances applied: 81 kg
- The insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Cypermethrin	107	60	3	17
Lambda-cyhalothrin	156	122	1	24
Pirimicarb	217	161	36	33
Spirotetramat	40	40	3	6
Thiacloprid	50	39	5	8

Figure 56: Insecticide active substance usage (spha) on leafy and flowerhead brassica crops in Northern Ireland, 2015.

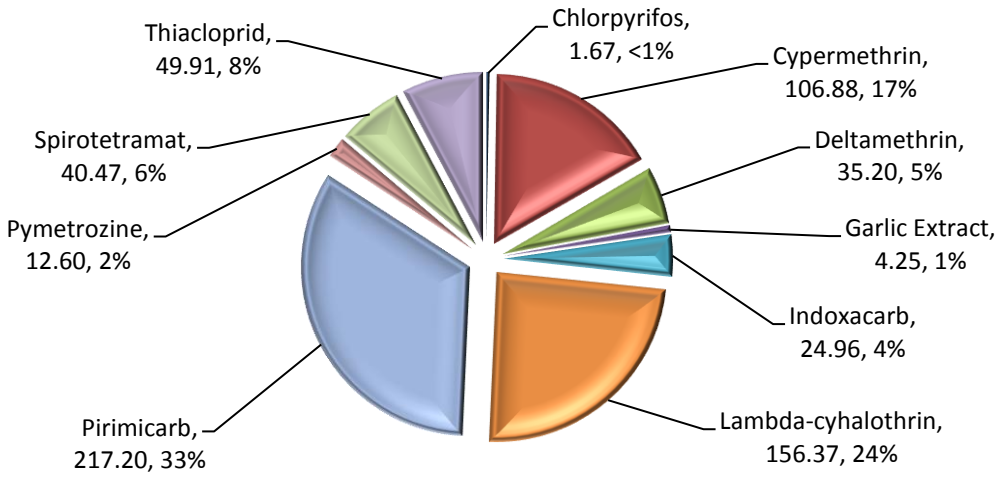


Figure 57: Weight of insecticide active substance usage (kg) on leafy and flowerhead brassica crops in Northern Ireland, 2015.

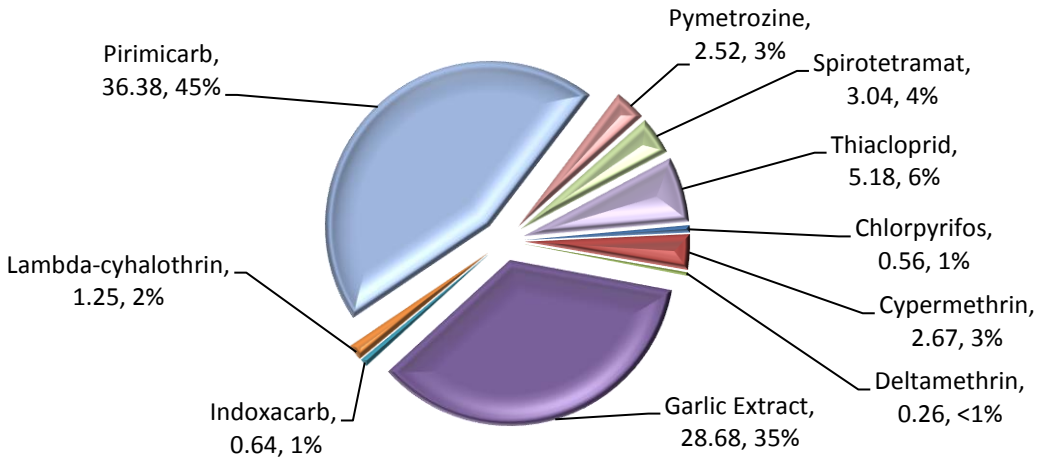
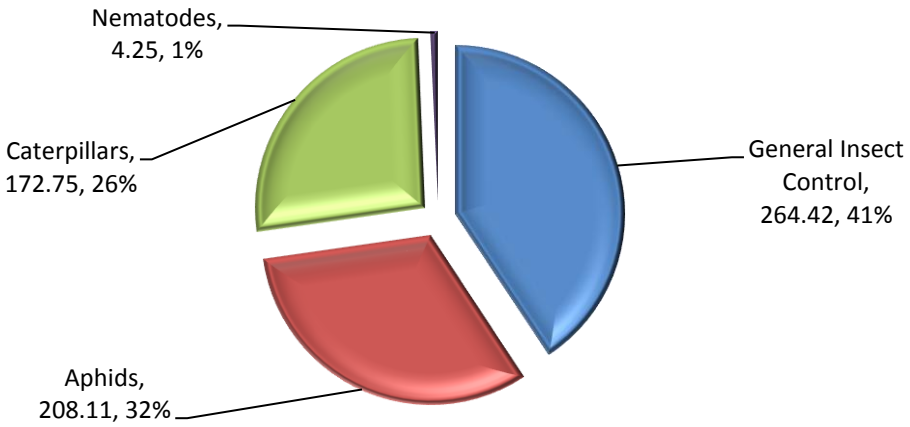


Figure 58: Leafy and flowerhead brassicas: reasons for insecticide use (spha).



PESTICIDE USAGE ON ONIONS AND LEEKS

- 115 hectares of onion and leek crops grown in Northern Ireland
- 114 basic treated area (ha)
- 902 total treated area (spha)
- 422 kg applied
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to onion and leek crops.

Figure 59: Pesticide usage on onion and leek crops in Northern Ireland, 2015.

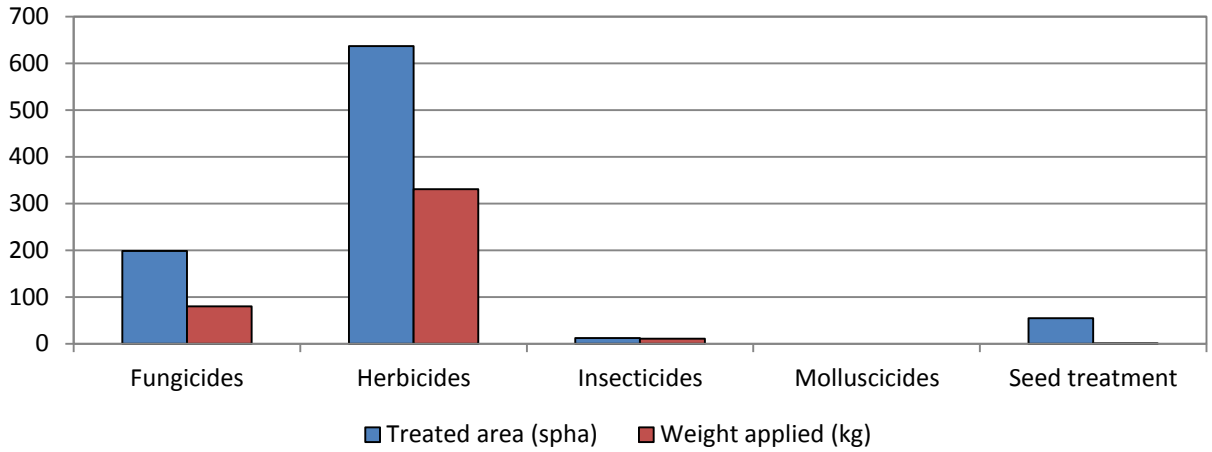


Figure 60: Regional distribution of onion and leek crops grown (ha) in Northern Ireland, 2015.

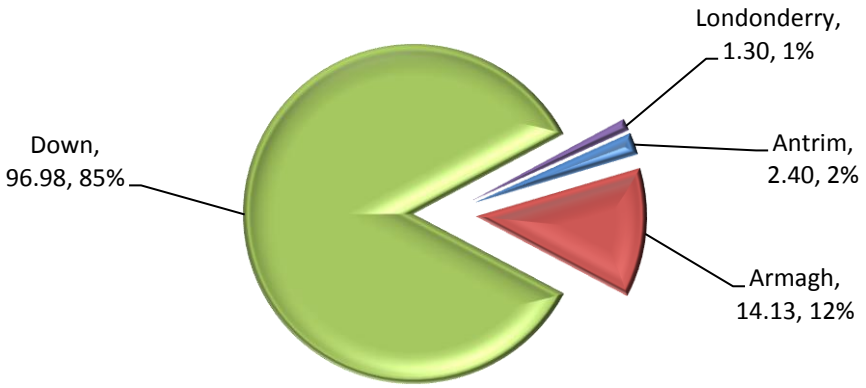


Figure 61: Pesticide usage (spha) on onion and leek crops in Northern Ireland, 2015.

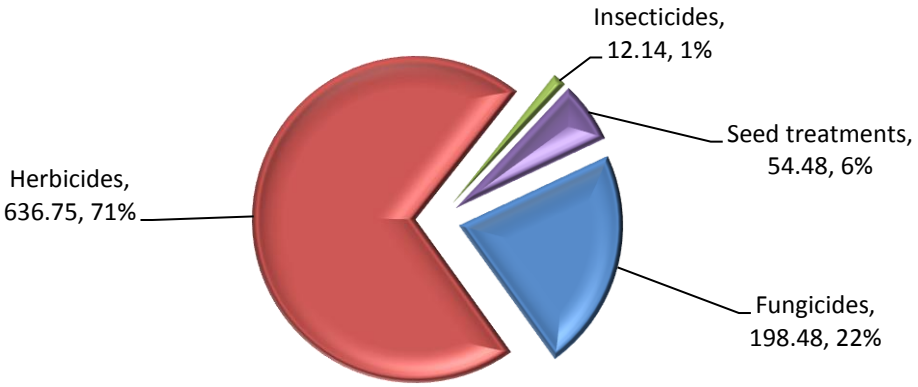
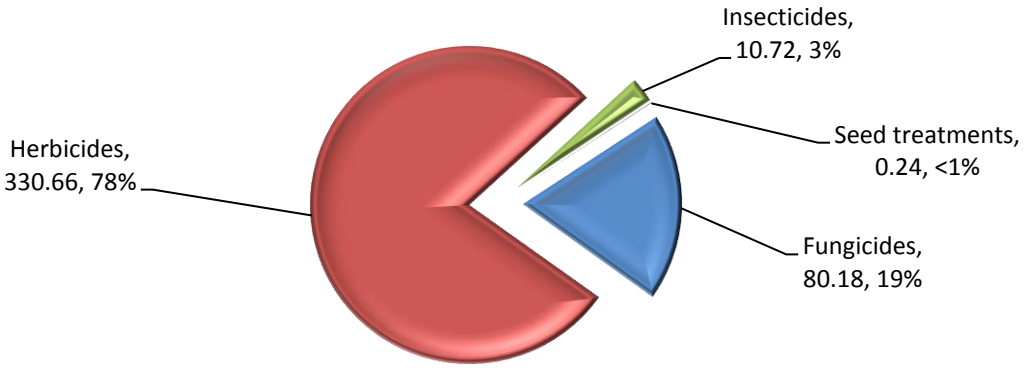


Figure 62: Weight of pesticides (kg) applied to onion and leek crops in Northern Ireland, 2015.



Onions and leeks – Fungicides

- Basic treated area: 92 hectares
- Total treated area: 198 spray hectares
- Weight of active substances applied: 80 kg
- The five most commonly applied fungicide active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Azoxystrobin	27	17	7	14
Dimethomorph/mancozeb	20	20	30	10
Prothioconazole	65	61	12	32
Tebuconazole	25	25	6	13
Tebuconazole/trifloxystrobin	38	38	10	19

Figure 63: Fungicide active substance usage (spha) on onion and leek crops in Northern Ireland, 2015.

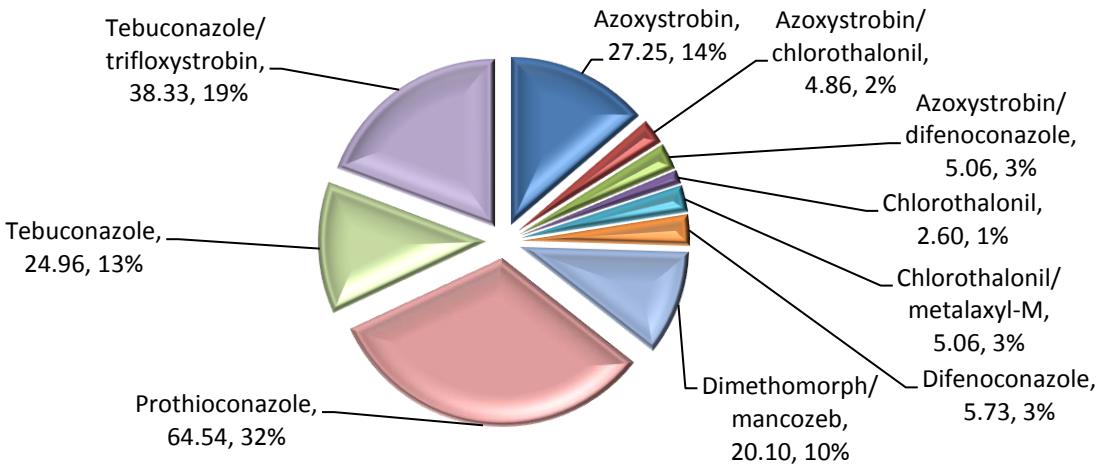


Figure 64: Weight of fungicide active substances (kg) applied to onion and leek crops in Northern Ireland, 2015.

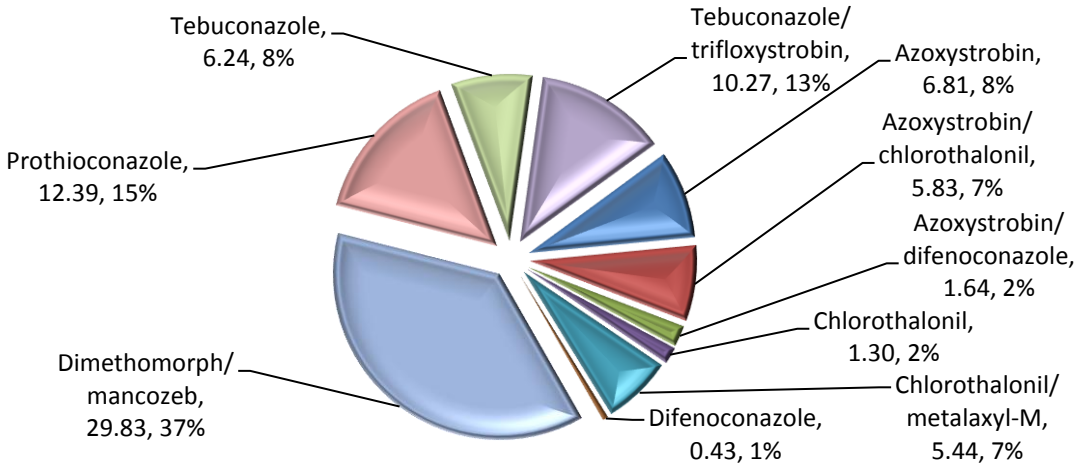
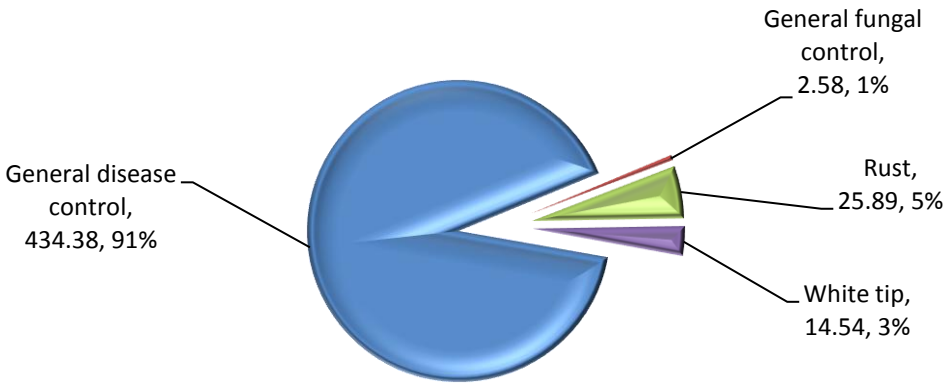


Figure 65: Onions and leeks: reasons for fungicide use (spha).



Onions and leeks – Herbicides and desiccants

- Basic treated area: 114 hectares
- Total treated area: 637 spray hectares
- Weight of active substances applied: 331 kg
- The most commonly applied herbicide and desiccant active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Chloridazon	60	58	30	10
Ioxynil	159	106	15	25
Metazachlor	59	53	32	9
Pendimethalin	63	61	28	10
Prosulfocarb	99	64	124	16

Figure 66: Herbicide and desiccant active substance usage (spha) on onion and leek crops in Northern Ireland, 2015.

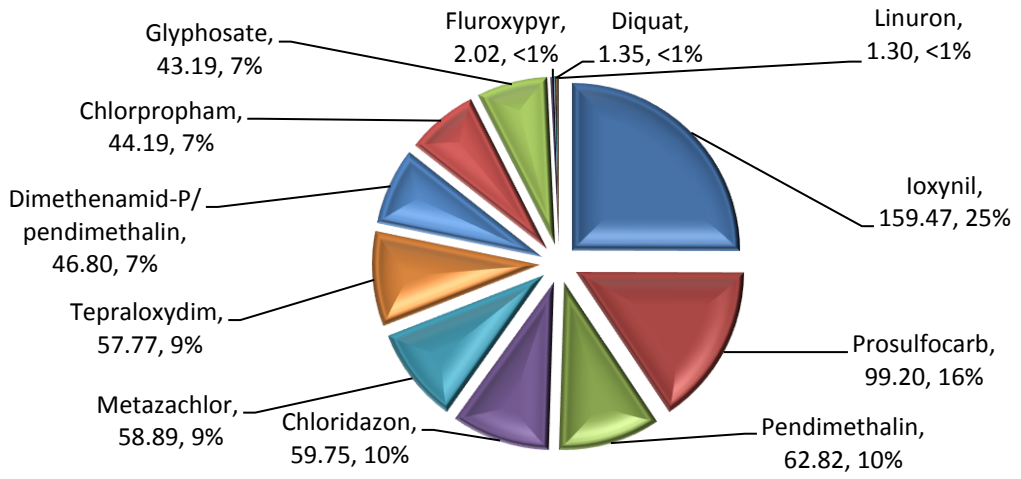


Figure 67: Weight of herbicide and desiccant active substance usage (kg) on onion and leek crops in Northern Ireland, 2015.

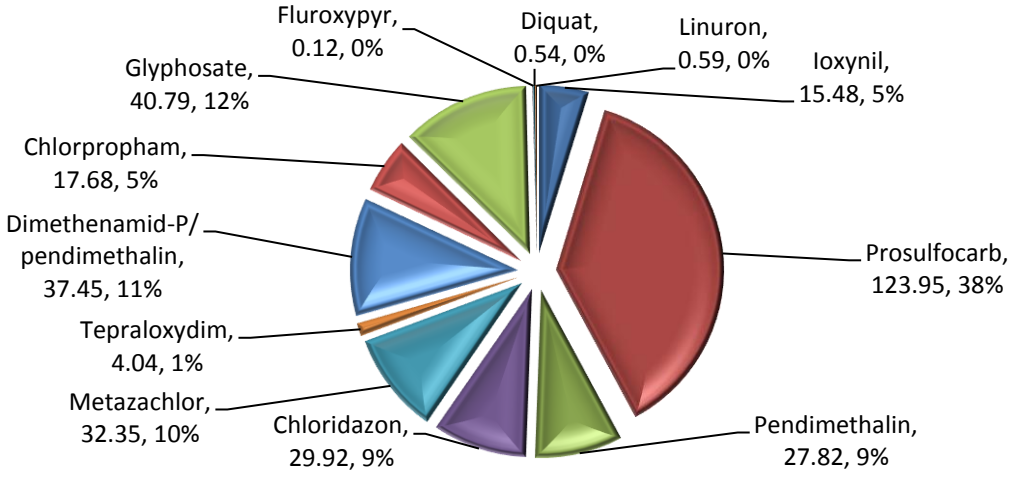
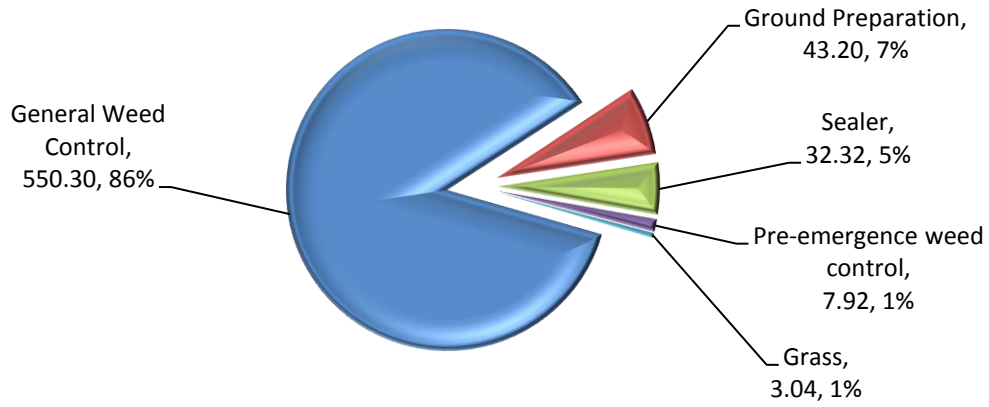


Figure 68: Onions and leeks: reasons for herbicide and desiccant use (spha).



Onions and leeks – Insecticides

- Basic treated area: 5 hectares
- Total treated area: 12 spray hectares
- Weight of active substances applied: 11 kg
- Only table leeks received insecticide treatments
- The insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Cypermethrin	6	3	<1	50
Garlic Extract	2	2	10	12
Lambda-cyhalothrin	2	2	<1	13
Pirimicarb	3	3	<1	25

Figure 69: Insecticide active substance usage (spha) on table leek crops in Northern Ireland, 2015.

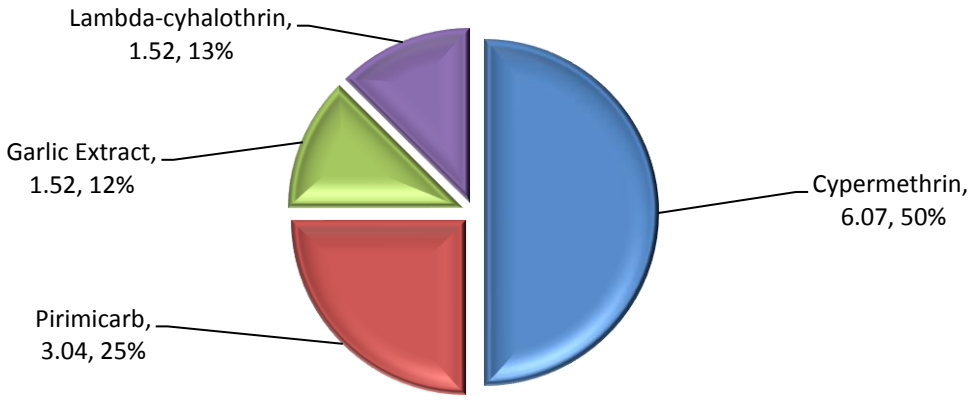


Figure 70: Weight of insecticide active substance usage (kg) on table leek crops in Northern Ireland, 2015.

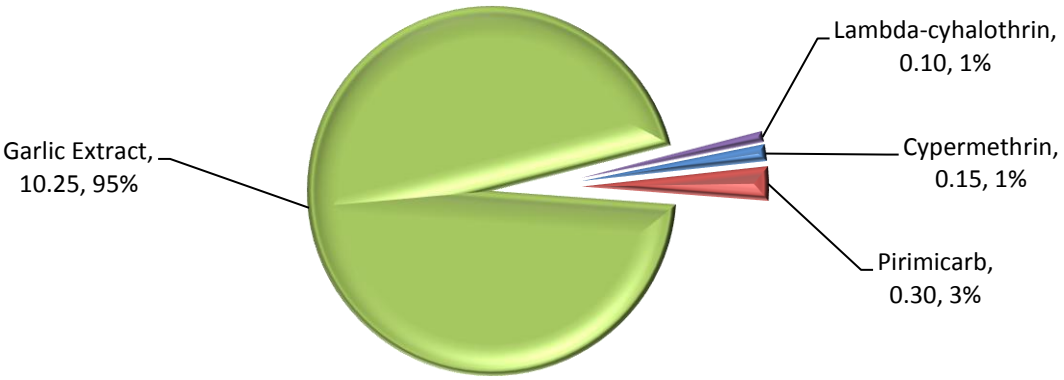
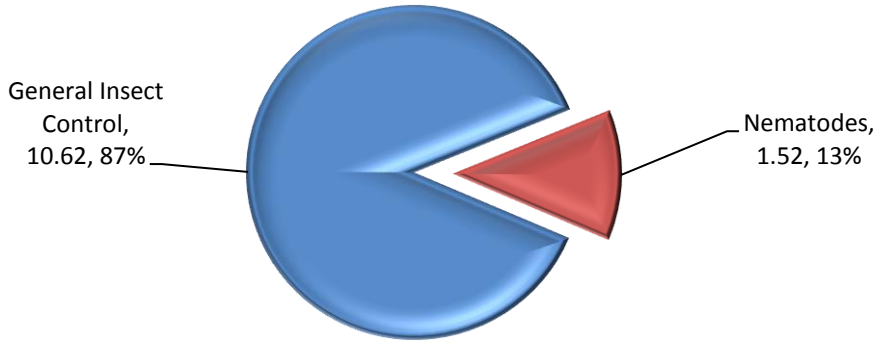


Figure 71: Table leeks: reasons for insecticide use (spha).



PESTICIDE USAGE ON CELERY AND PARSLEY

- 74 hectares of celery and parsley crops grown in Northern Ireland
- 73 basic treated area (ha)
- 558 total treated area (spha)
- 250 kg applied
- Celeriac received no pesticide treatements
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to celery and parsley crops.

Figure 72: Pesticide usage on celery and parsley crops in Northern Ireland, 2015.

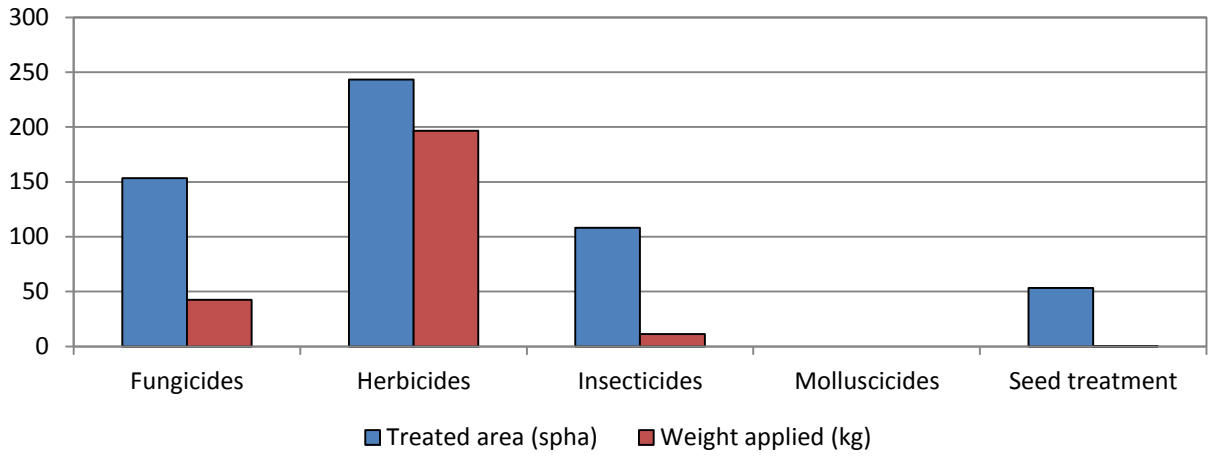


Figure 73: Regional distribution of celery and parsley crops grown (ha) in Northern Ireland, 2015.

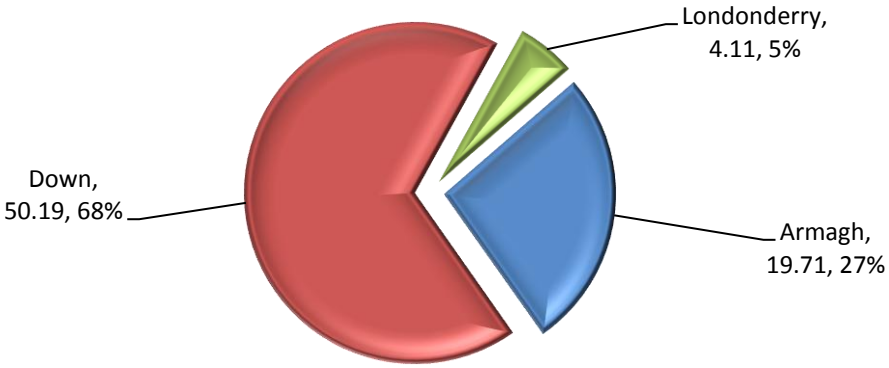


Figure 74: Pesticide usage (spha) on celery and parsley crops in Northern Ireland, 2015.

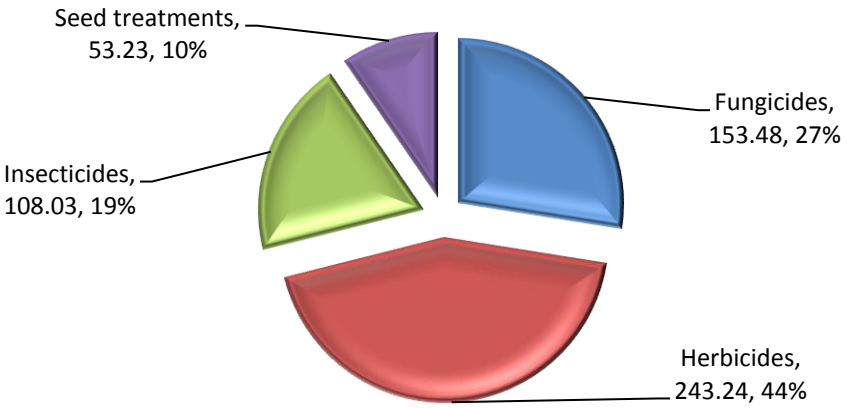
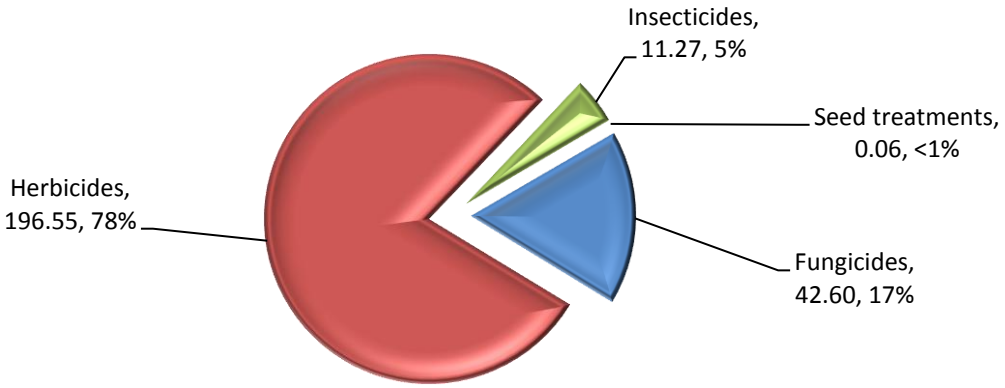


Figure 75: Weight of pesticides (kg) applied to celery and parsley crops in Northern Ireland, 2015.



Celery and parsley – Fungicides

- Basic treated area: 55 hectares
- Total treated area: 153 spray hectares
- Weight of active substances applied: 43 kg
- The most commonly applied fungicide active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Azoxystrobin	62	52	16	41
Copper oxychloride	5	2	5	3
Difenoconazole	57	47	5	37
Mancozeb/metalaxyl-M	24	24	15	16
Unknown fungicide	2	2	.	2

Figure 76: Fungicide active substance usage (spha) on celery and parsley crops in Northern Ireland, 2015.

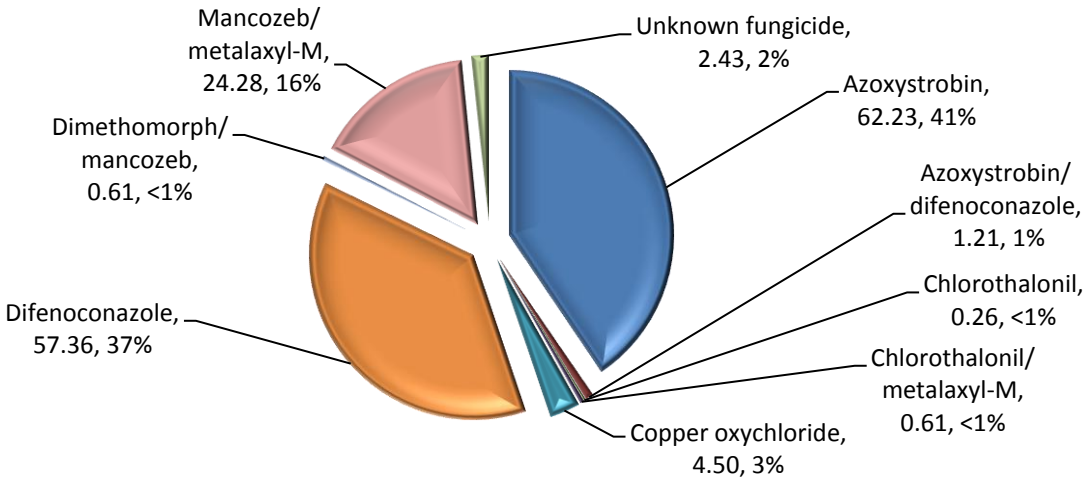


Figure 77: Weight of fungicide active substances (kg) applied to celery and parsley crops in Northern Ireland, 2015.

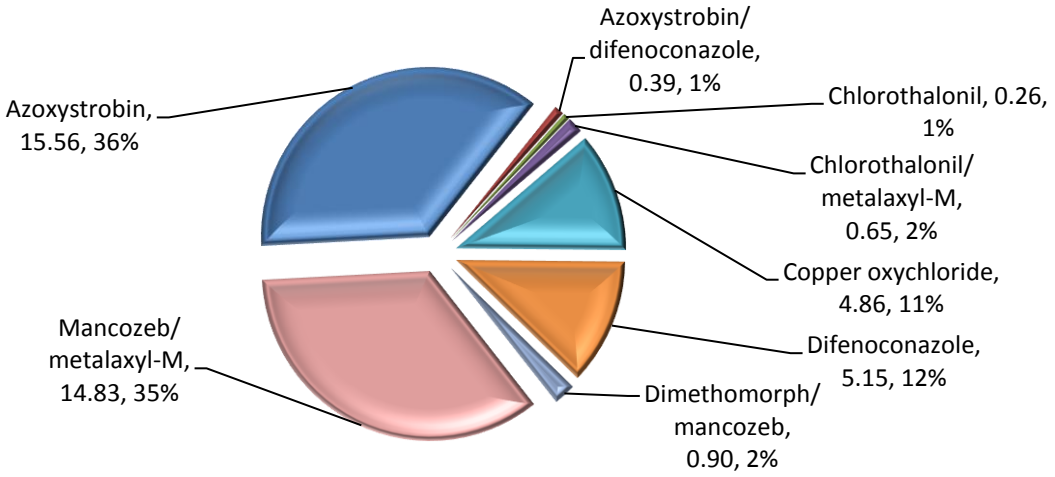
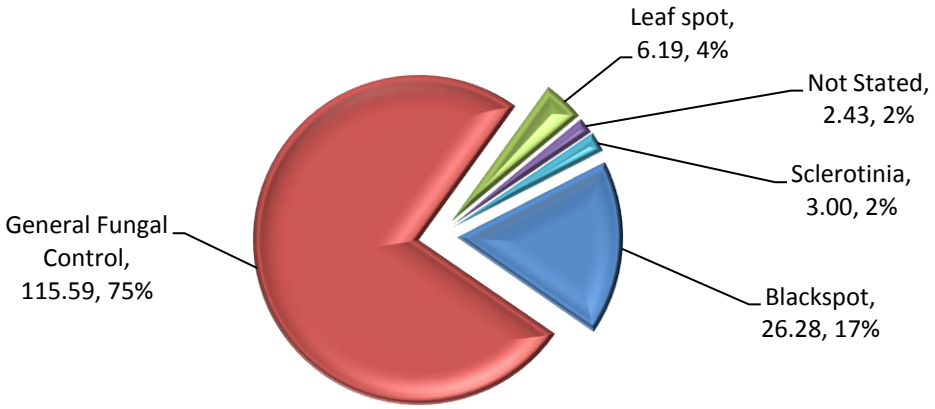


Figure 78: Celery and parsley: reasons for fungicide use (spha).



Celery and parsley – Herbicides and desiccants

- Basic treated area: 73 hectares
- Total treated area: 243 spray hectares
- Weight of active substances applied: 197 kg
- The most commonly applied herbicide and desiccant active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	33	33	26	14
Linuron	100	70	42	41
Pendimethalin	47	47	40	19
Prosulfocarb	45	45	85	18
Tepraloxydim	13	13	1	6

Figure 79: Herbicide and desiccant active substance usage (spha) on celery and parsley crops in Northern Ireland, 2015.

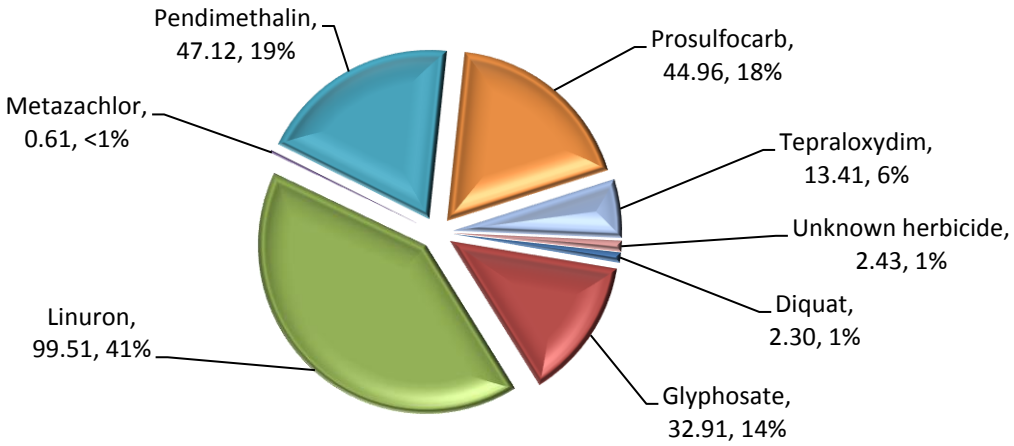


Figure 80: Weight of herbicide and desiccant active substance usage (kg) on celery and parsley crops in Northern Ireland, 2015.

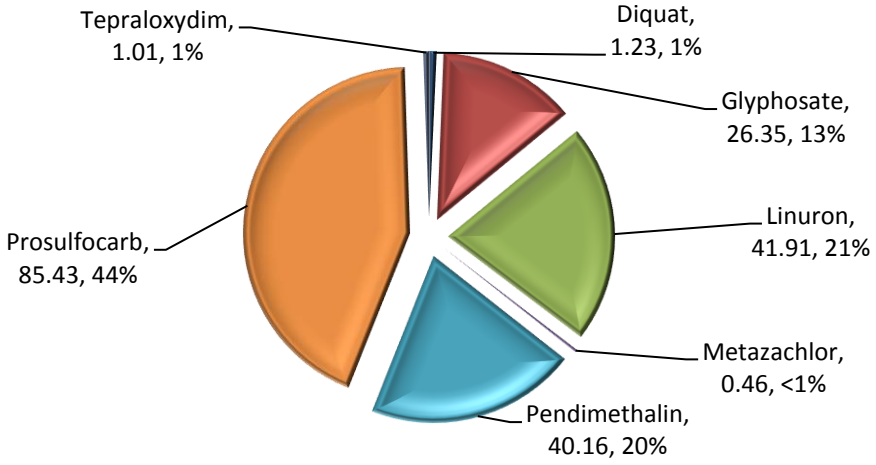
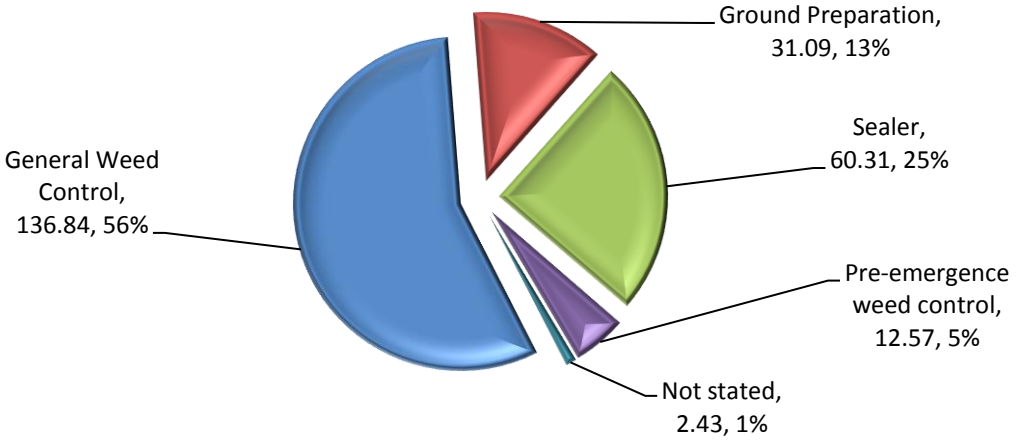


Figure 81: Celery and parsley: reasons for herbicide and desiccant use (spha).



Celery and parsley – Insecticides

- Basic treated area: 35 hectares
- Total treated area: 108 spray hectares
- Weight of active substances applied: 11 kg
- The insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Deltamethrin	5	2	<1	4
Lambda-cyhalothrin	55	21	1	51
Oxamyl	3	3	4	3
Pirimicarb	40	24	5	38
Unknown insecticide	2	2	.	2

Figure 82: Insecticide active substance usage (spha) on celery and parsley crops in Northern Ireland, 2015.

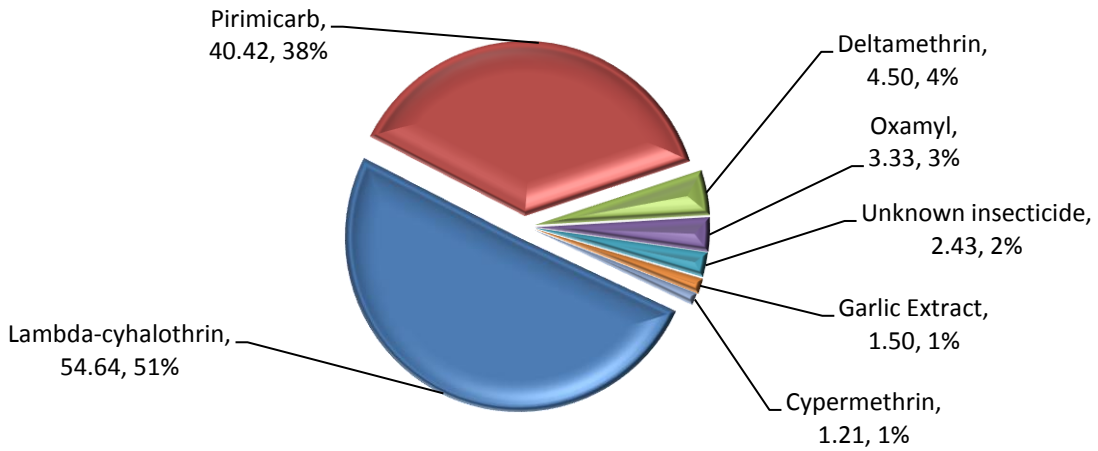


Figure 83: Weight of insecticide active substance usage (kg) on celery and parsley crops in Northern Ireland, 2015.

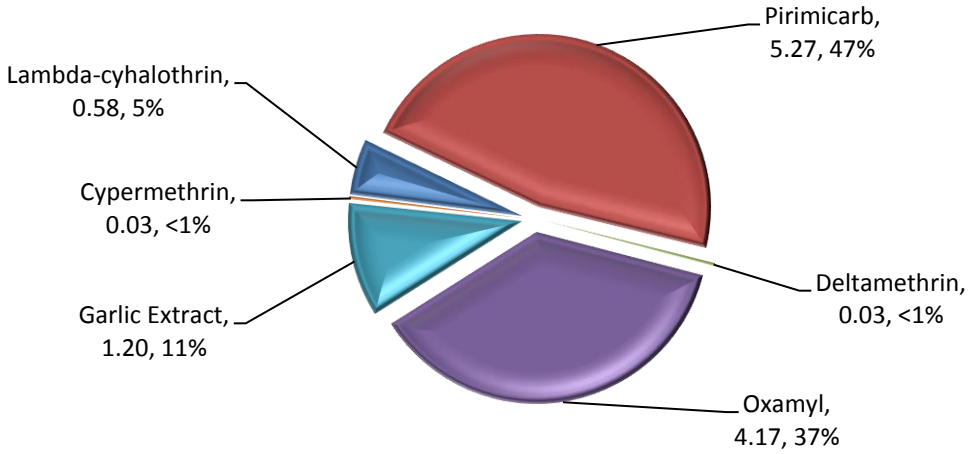
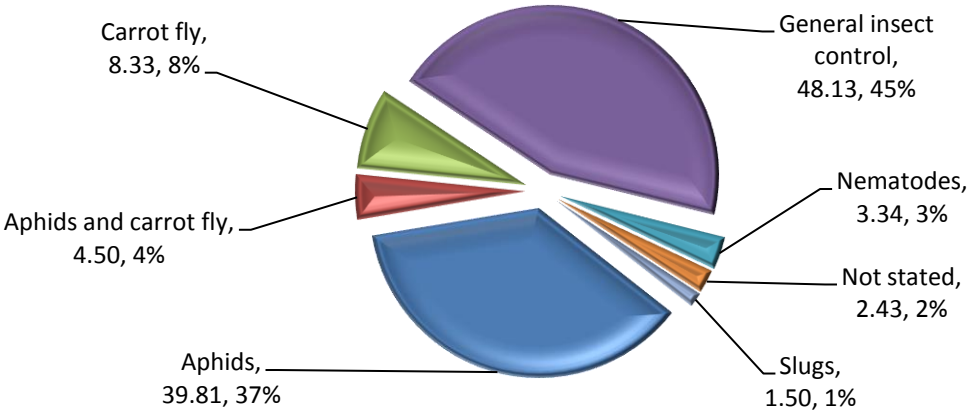


Figure 84: Celery and parsley: reasons for insecticide use (spha).



PESTICIDE USAGE ON LETTUCE

- 39 hectares of lettuce crops grown in Northern Ireland
- 39 basic treated area (ha)
- 568 total treated area (spha)
- 223 kg applied
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to lettuce crops.

Figure 85: Pesticide usage on lettuce crops in Northern Ireland, 2015.

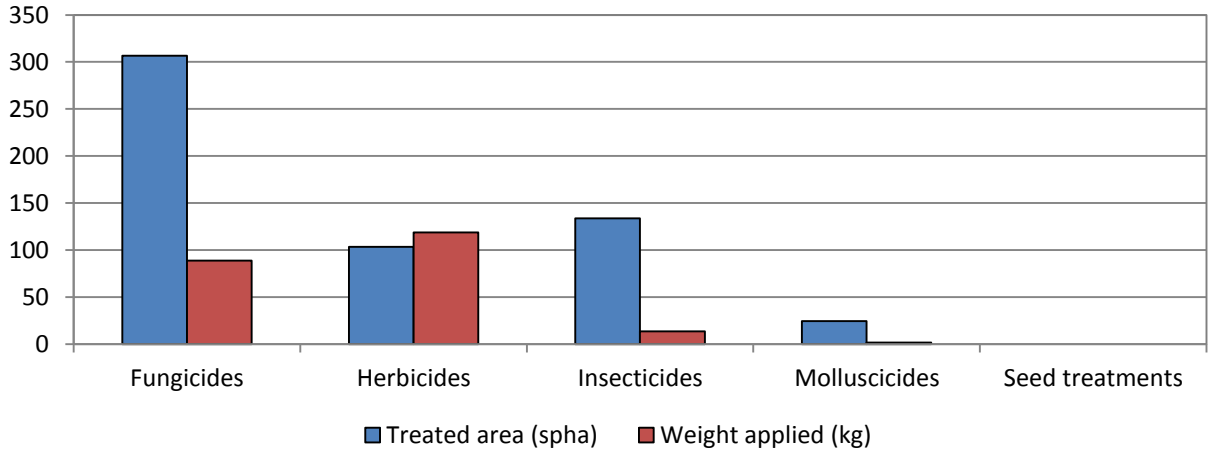


Figure 86: Pesticide usage (spha) on lettuce crops in Northern Ireland, 2015.

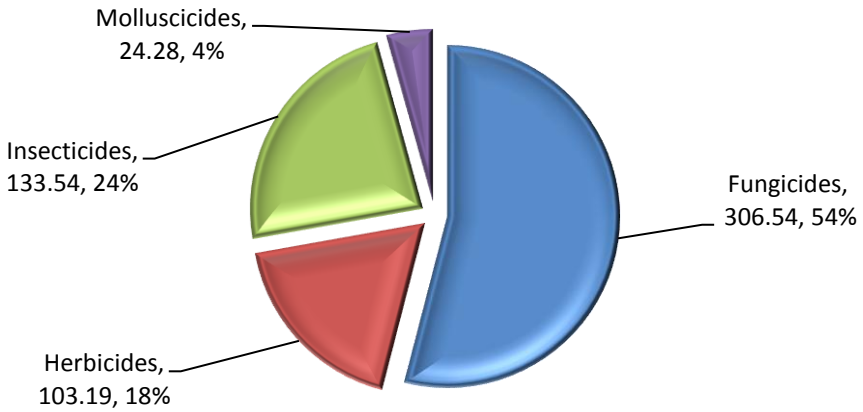
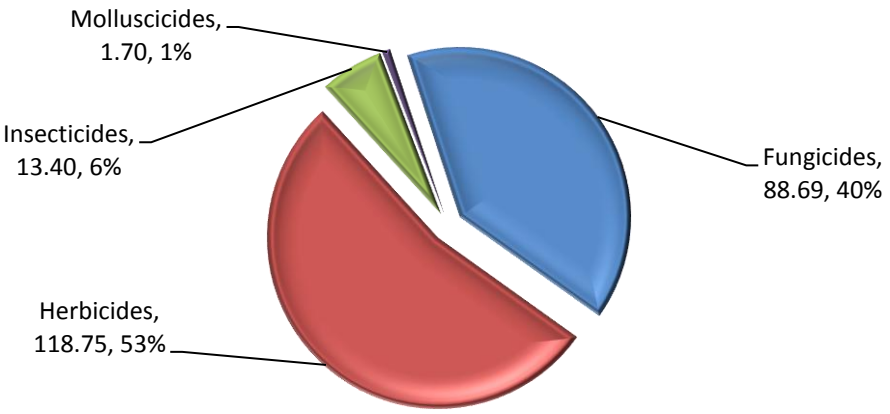


Figure 87: Weight of pesticides (kg) applied to lettuce crops in Northern Ireland, 2015.



Lettuce – Fungicides

- Basic treated area: 39 hectares
- Total treated area: 307 spray hectares
- Weight of active substances applied: 89 kg
- The fungicide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Azoxystrobin	112	39	16	36
Cyprodinil/fludioxonil	73	24	14	24
Dimethomorph/mancozeb	24	24	36	8
Fenhexamid	49	24	17	16
Mandipropamid	49	24	6	16

Figure 88: Fungicide active substance usage (spha) on lettuce crops in Northern Ireland, 2015.

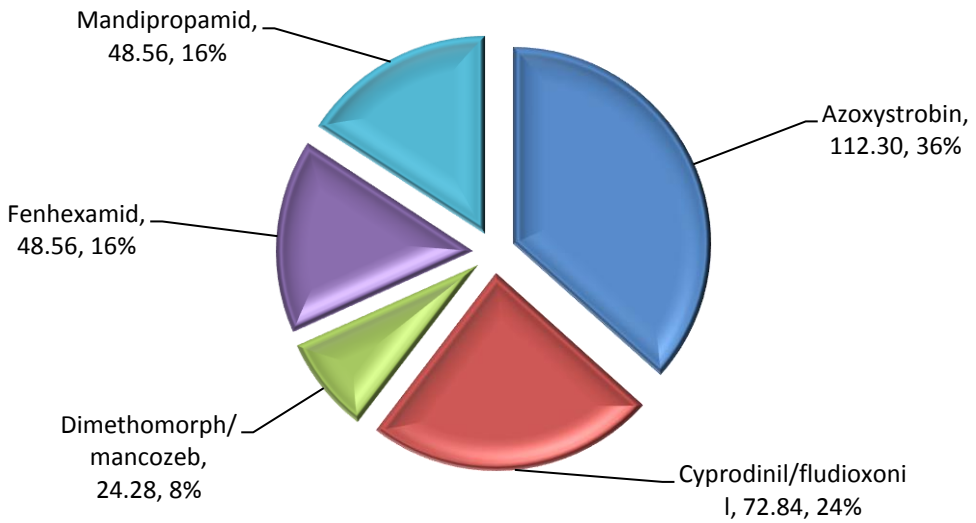


Figure 89: Weight of fungicide active substances (kg) applied to lettuce crops in Northern Ireland, 2015.

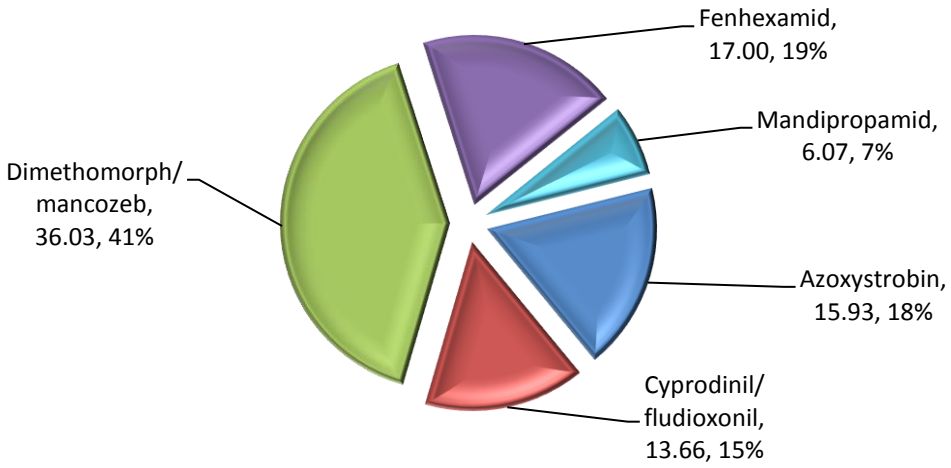
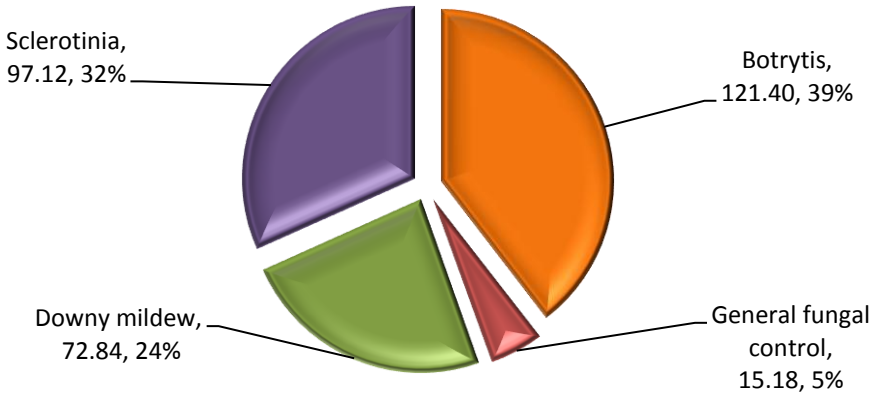


Figure 90: Lettuce: reasons for fungicide use (spha).



Lettuce – Herbicides and desiccants

- Basic treated area: 39 hectares
- Total treated area: 103 spray hectares
- Weight of active substances applied: 119 kg
- The herbicide and desiccant active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Dimethenamid-P/pendimethalin	24	24	14	23
Glyphosate	15	15	22	15
Pendimethalin	24	24	28	24
Propyzamide	39	39	55	38

Figure 91: Herbicide and desiccant active substance usage (spha) on lettuce crops in Northern Ireland, 2015.

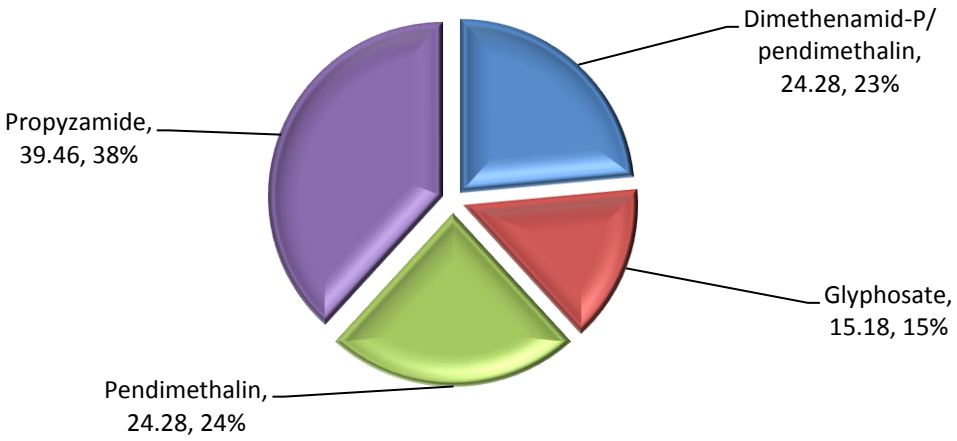


Figure 92: Weight of herbicide and desiccant active substance usage (kg) on lettuce crops in Northern Ireland, 2015.

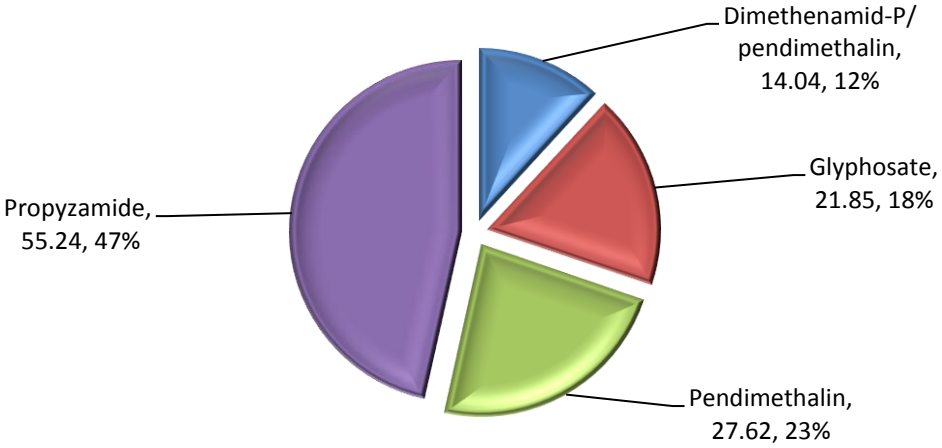
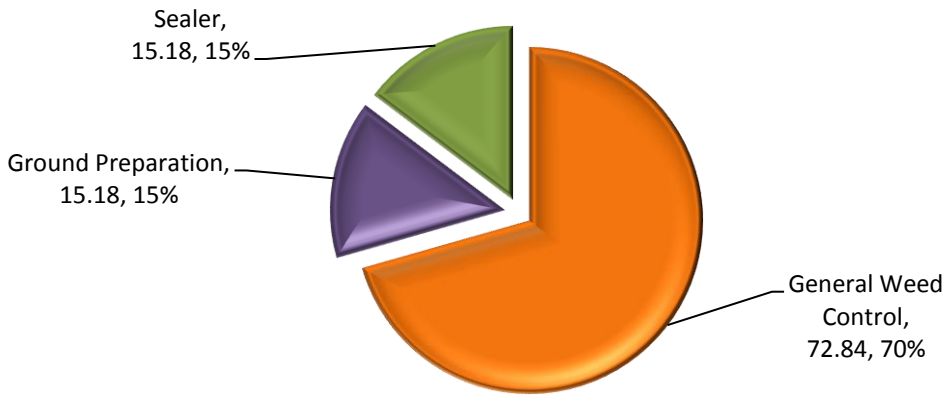


Figure 93: Lettuce: reasons for herbicide and desiccant use (spha).



Lettuce – Insecticides

- Basic treated area: 39 hectares
- Total treated area: 134 spray hectares
- Weight of active substances applied: 13 kg
- The insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Deltamethrin	24	24	<1	18
Lambda-cyhalothrin	30	15	<1	23
Pirimicarb	30	15	8	23
Pymetrozine	24	24	4	18
Spirotetramat	24	24	2	18

Figure 94: Insecticide active substance usage (spha) on lettuce crops in Northern Ireland, 2015.

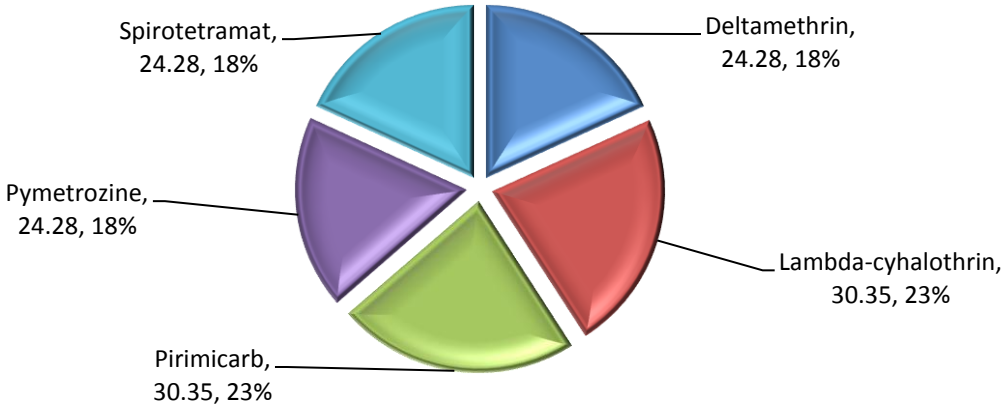


Figure 95: Weight of insecticide active substance usage (kg) on lettuce crops in Northern Ireland, 2015.

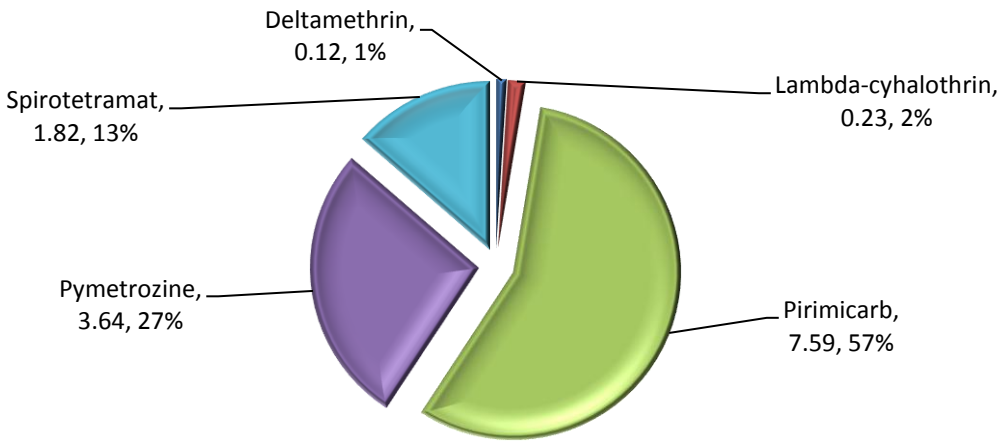
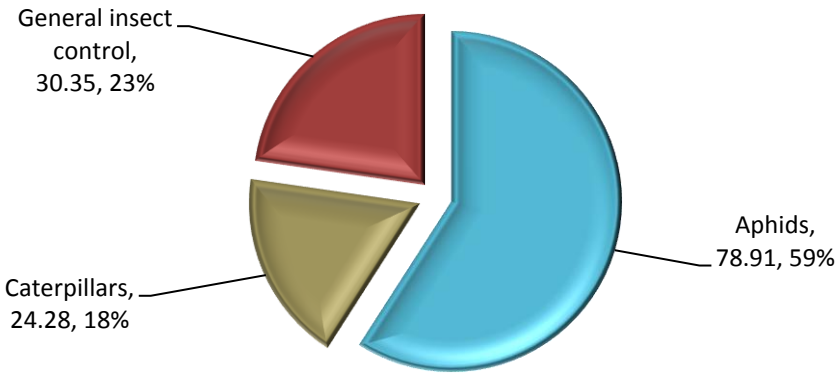


Figure 96: Lettuce: reasons for insecticide use (spha).



PESTICIDE USAGE ON PEAS AND BEANS

- 5 hectares of pea and bean crops grown in Northern Ireland
- 5 basic treated area (ha)
- 39 total treated area (spha)
- Weight of active substances applied:17 kg
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to pea and bean crops.

Figure 97: Pesticide usage on pea and bean crops in Northern Ireland, 2015.

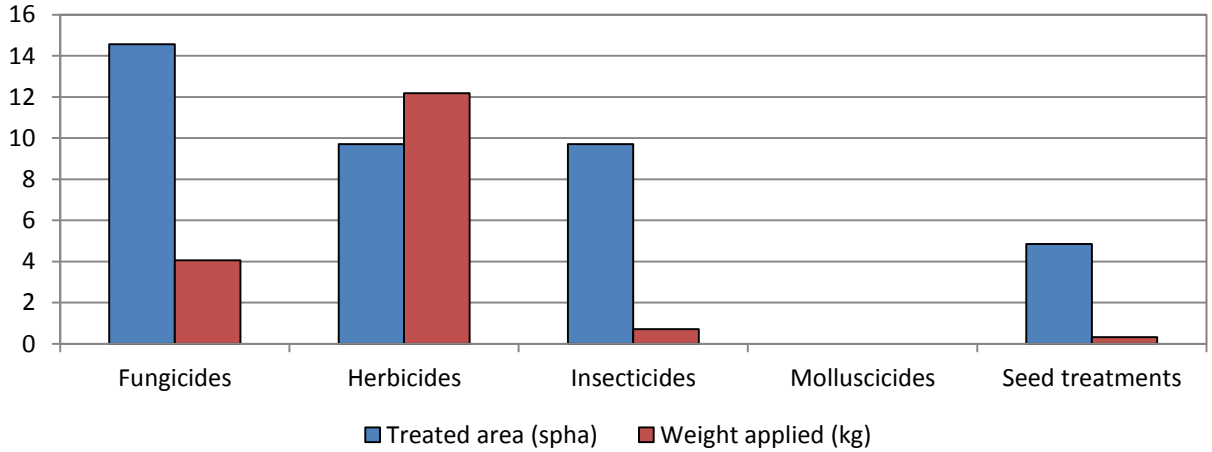


Figure 98: Pesticide usage (spha) on pea and bean crops in Northern Ireland, 2015.

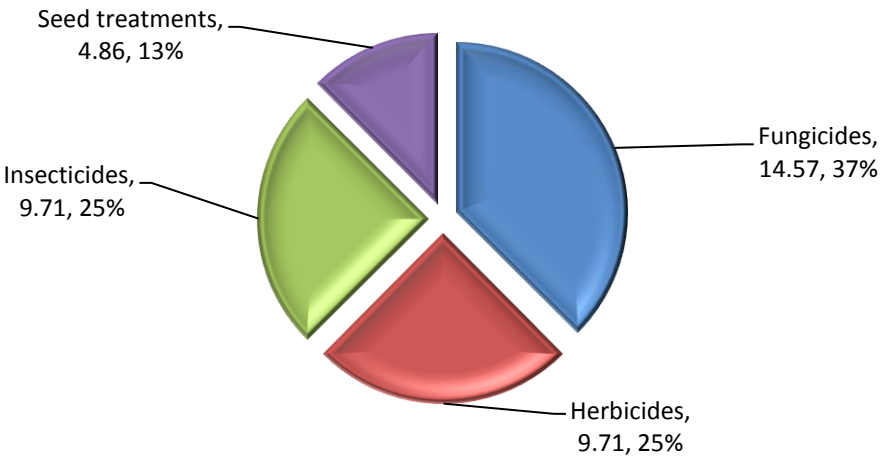
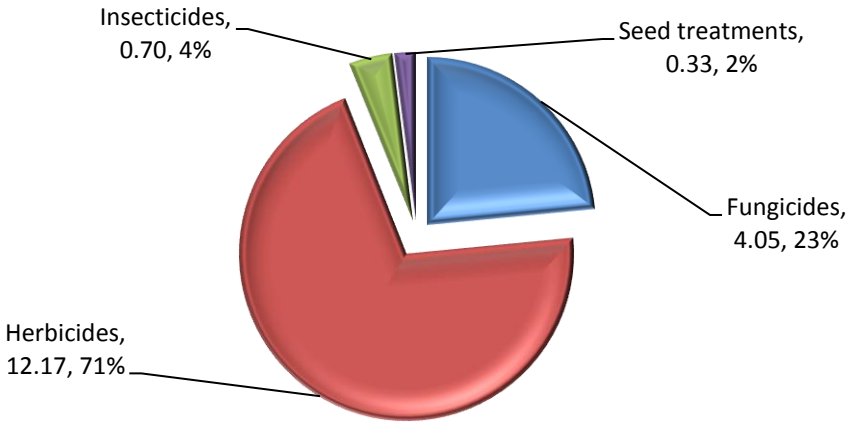


Figure 99: Weight of pesticides (kg) applied to pea and bean crops in Northern Ireland, 2015.



Peas and beans – Fungicides

- Basic treated area: 5 hectares
- Total treated area: 15 spray hectares
- Weight of active substances applied: 4 kg
- The only reason given for fungicide use was general fungal control
- The fungicide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Azoxystrobin	5	5	1	34
Boscalid/pyraclostrobin	5	5	2	33
Tebuconazole	5	5	1	33

Figure 100: Fungicide active substance usage (spha) on pea and bean crops in Northern Ireland, 2015.

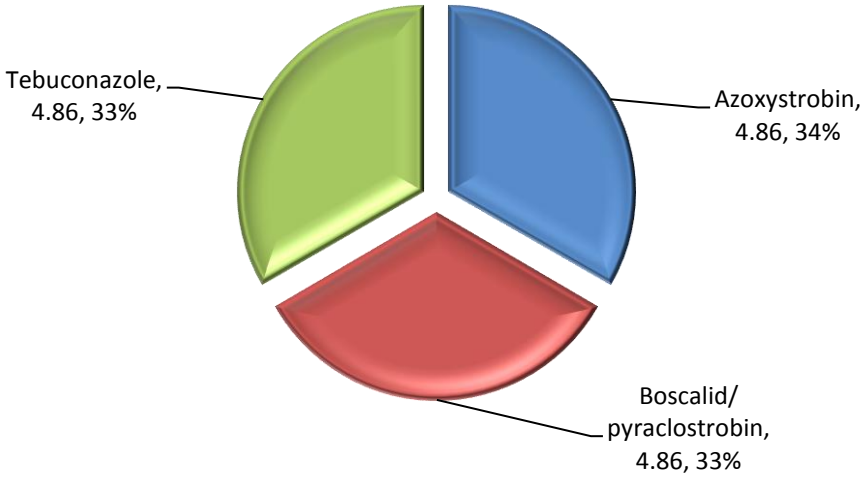
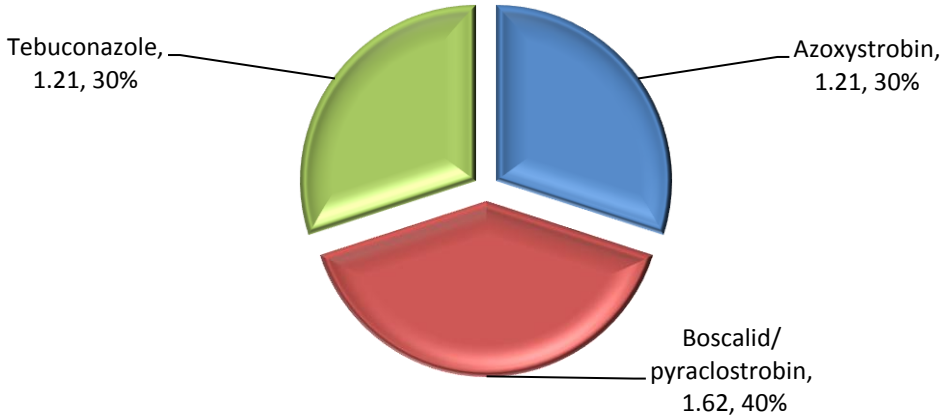


Figure 101: Weight of fungicide active substances (kg) applied to pea and bean crops in Northern Ireland, 2015.



Peas and beans – Herbicides and desiccants

- Basic treated area: 5 hectares
- Total treated area: 10 spray hectares
- Weight of active substances applied: 12 kg
- The only herbicide and desiccant active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Glyphosate	5	5	7	50
Imazamox/pendimethalin	5	5	5	50

Figure 102: Herbicide and desiccant active substance usage (spha) on pea and bean crops in Northern Ireland, 2015.

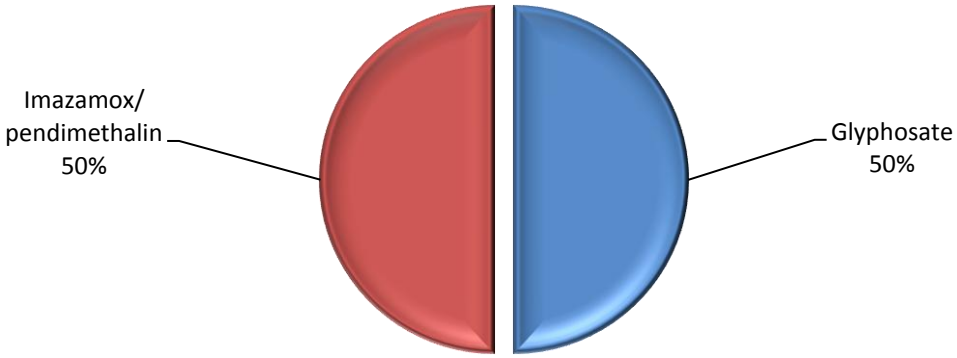


Figure 103: Weight of herbicide and desiccant active substance usage (kg) on pea and bean crops in Northern Ireland, 2015.

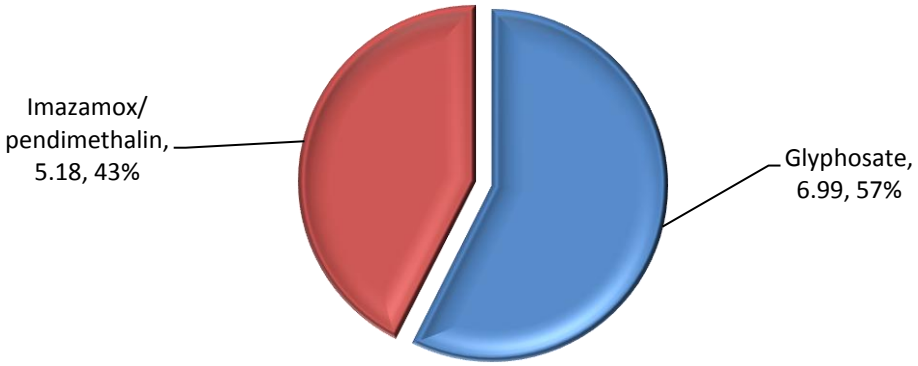
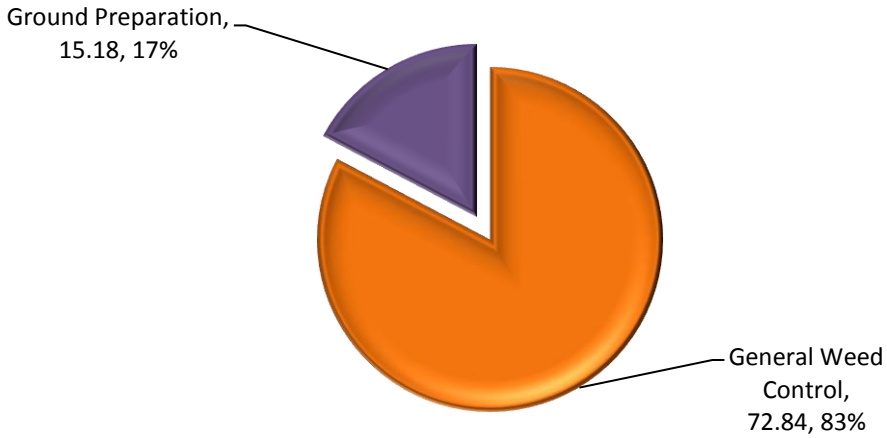


Figure 104: Peas and beans: reasons for herbicide and desiccant use (spha).



Peas and beans – Insecticides

- Basic treated area: 5 hectares
- Total treated area: 10 spray hectares
- Weight of active substances applied: <1 kg
- The only reason given for use was general insect control
- The two insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	5	5	<1	50
Pirimicarb	5	5	1	50

Figure 105: Insecticide active substance usage (spha) on pea and bean crops in Northern Ireland, 2015.

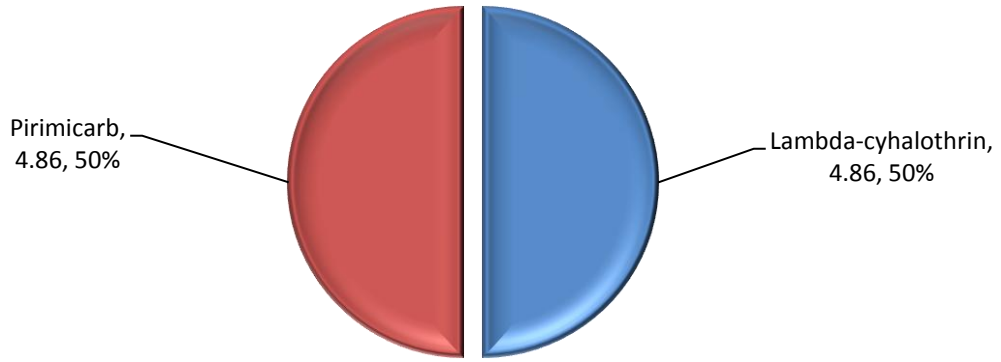
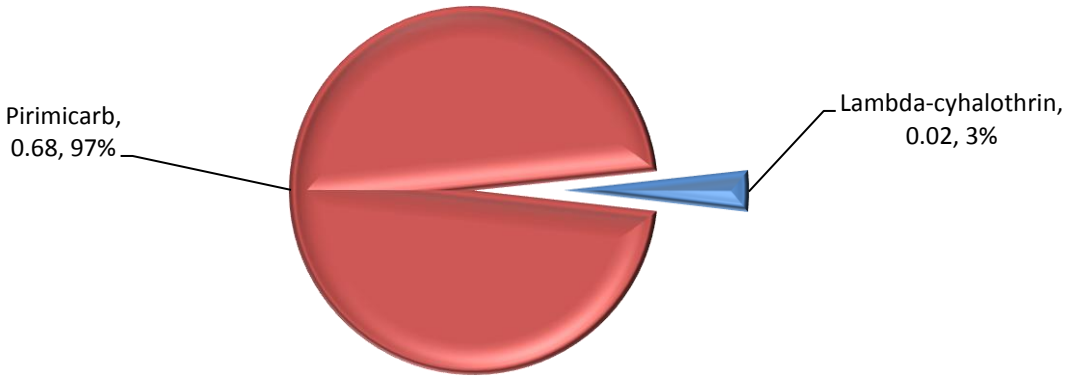


Figure 106: Weight of insecticide active substance usage (kg) on pea and bean crops in Northern Ireland, 2015.



PESTICIDE USAGE ON OTHER VEGETABLES

- 20 hectares of other vegetable crops grown in Northern Ireland
- 16 basic treated area (ha)
- 66 total treated area (spha)
- 38 kg applied
- Rhubarb received no pesticide treatments
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to other vegetable crops.

Figure 107: Pesticide usage on other vegetable crops in Northern Ireland, 2015.

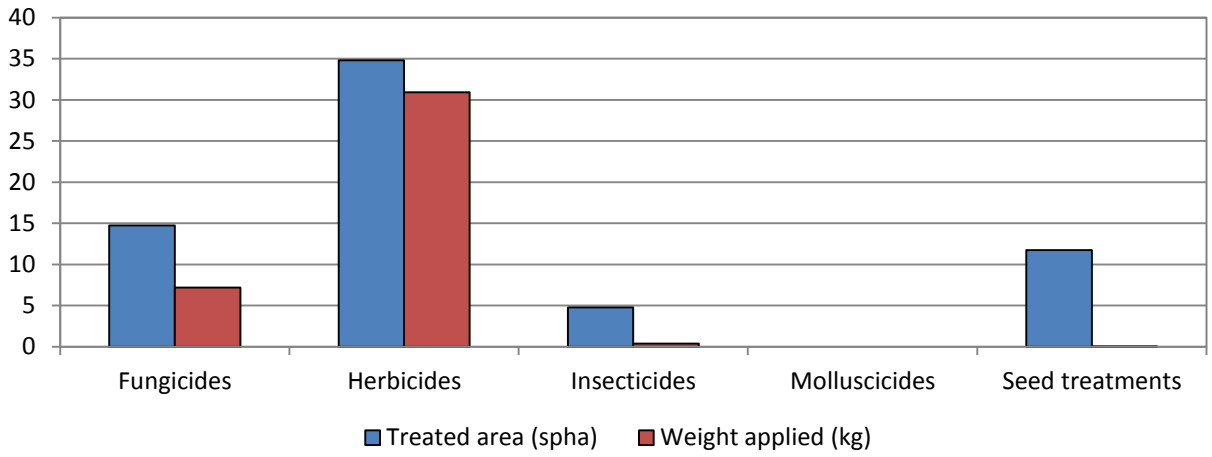


Figure 108: Regional distribution of other vegetable crops grown (ha) in Northern Ireland, 2015.

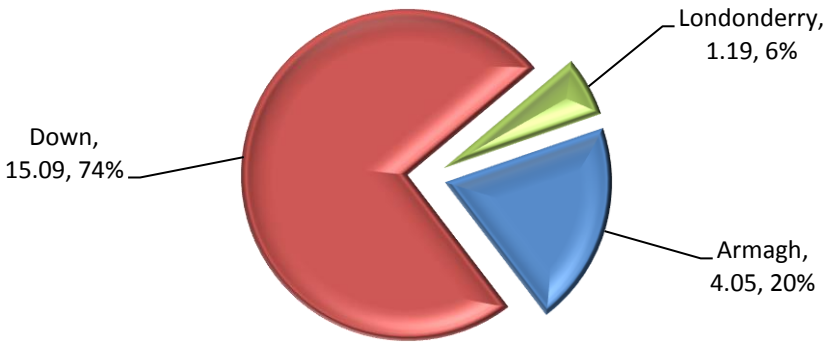


Figure 109: Pesticide usage (spha) on other vegetable crops in Northern Ireland, 2015.

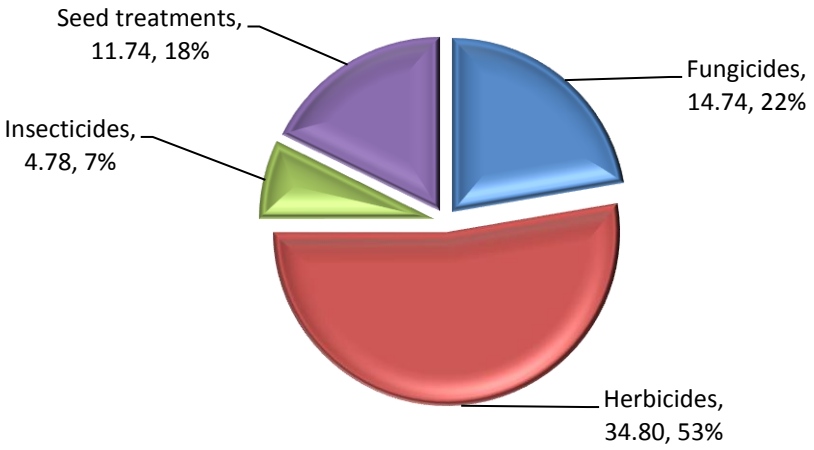
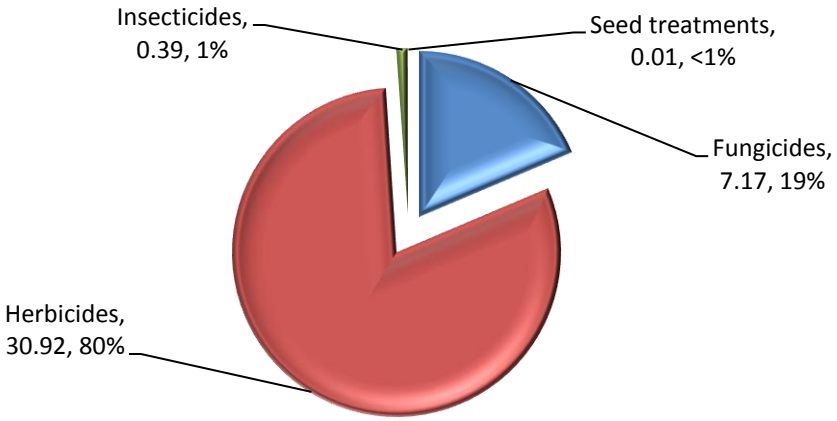


Figure 110: Weight of pesticides (kg) applied to other vegetable crops in Northern Ireland, 2015.



Other vegetables – Fungicides

- Basic treated area: 7 hectares
- Total treated area: 15 spray hectares
- Weight of active substances applied: 7 kg
- The fungicide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Boscalid/pyraclostrobin	8	4	4	54
Cyproconazole/trifloxystrobin	3	3	1	23
Fenpropimorph	3	3	3	23

Figure 111: Fungicide active substance usage (spha) on other vegetable crops in Northern Ireland, 2015.

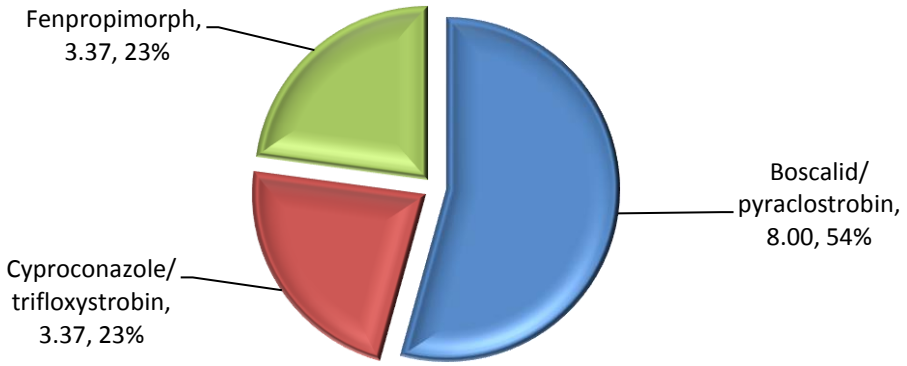


Figure 112: Weight of fungicide active substances (kg) applied to other vegetable crops in Northern Ireland, 2015.

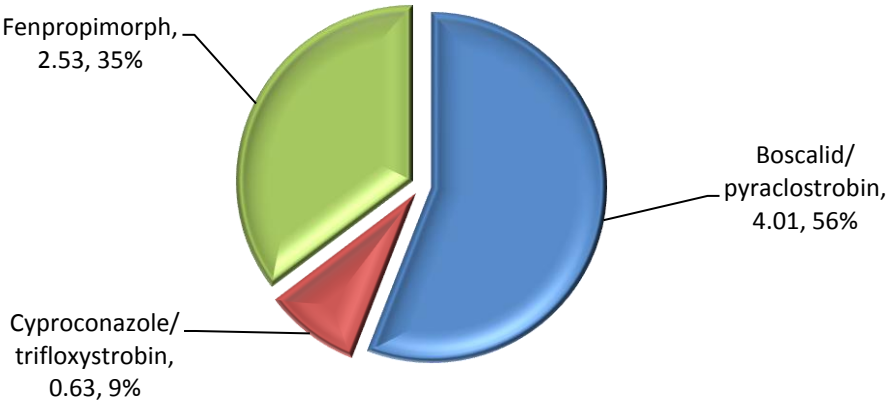
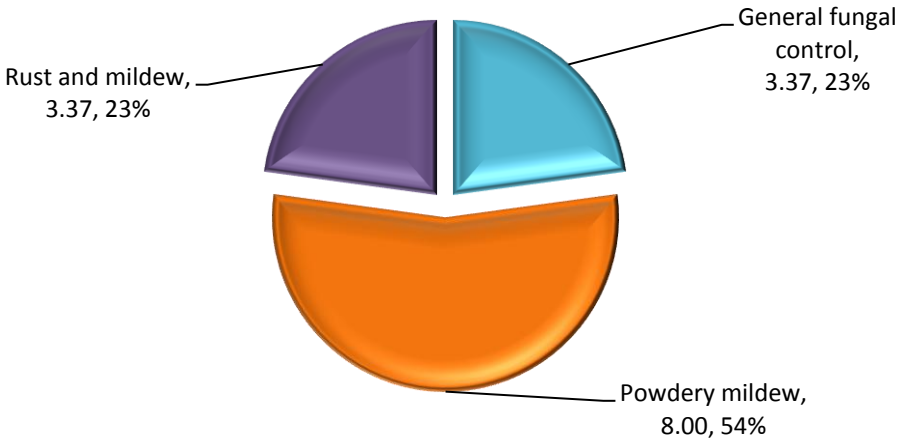


Figure 113: Other vegetables: reasons for fungicide use (spha).



Other vegetables – Herbicides and desiccants

- Basic treated area: 15 hectares
- Total treated area: 35 spray hectares
- Weight of active substances applied: 31 kg
- The herbicide and desiccant active substances most commonly applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Ethofumesate	3	3	3	10
Glyphosate	6	6	8	16
Lenacil	7	7	4	20
Metamitron	7	7	12	20
Phenmedipham	6	6	2	16

Figure 114: Herbicide and desiccant active substance usage (spha) on other vegetable crops in Northern Ireland, 2015.

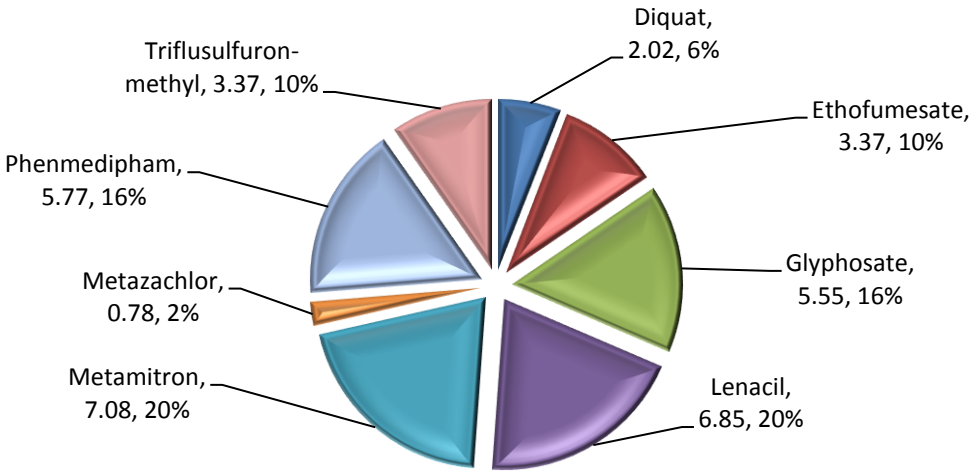


Figure 115: Weight of herbicide and desiccant active substance usage (kg) on other vegetable crops in Northern Ireland, 2015.

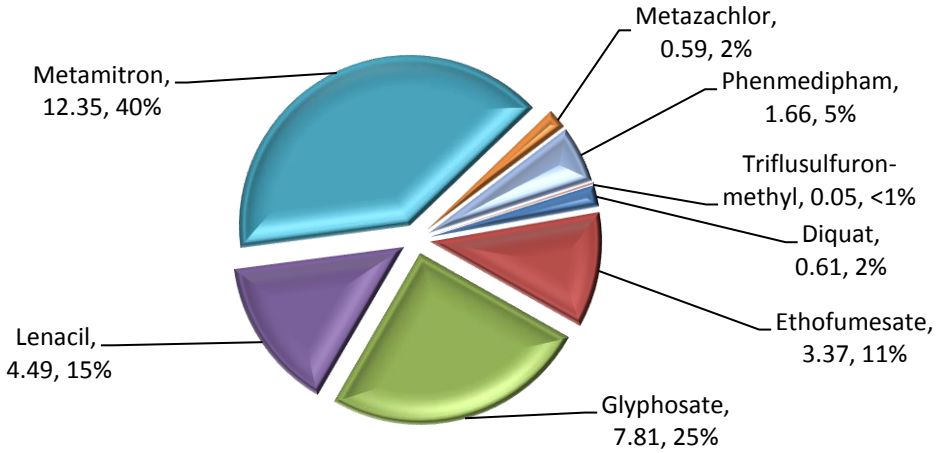
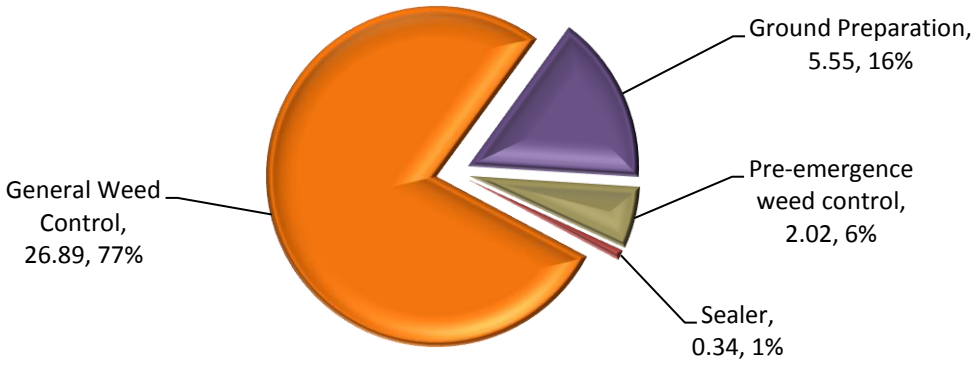


Figure 116: Other vegetables: reasons for herbicide and desiccant use (spha).



Other vegetables – Insecticides

- Basic treated area: 5 hectares
- Total treated area: 5 spray hectares
- Weight of active substances applied: <1 kg
- The only reason given for use was general insect control
- The two insecticide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Lambda-cyhalothrin	1	1	<1	16
Spinosad	4	4	<1	84

Figure 117: Insecticide active substance usage (spha) on other vegetable crops in Northern Ireland, 2015.

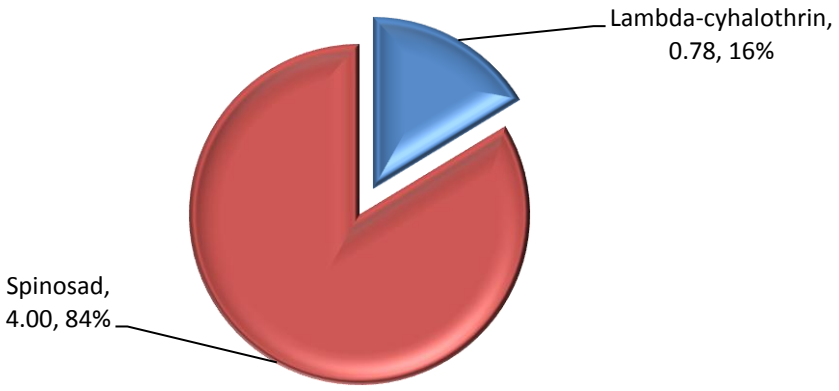
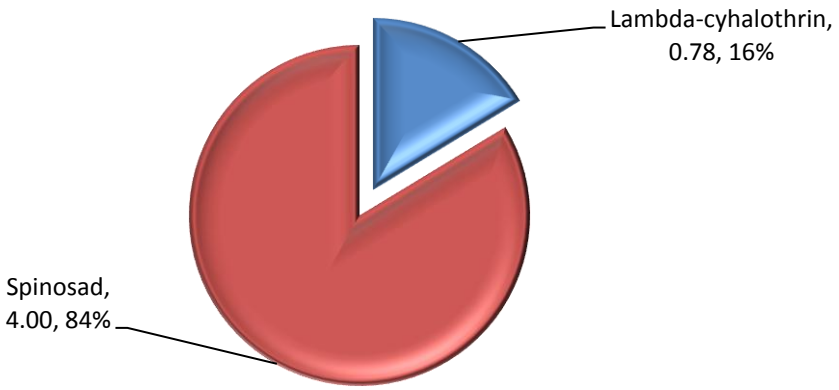


Figure 118: Weight of insecticide active substance usage (kg) on other vegetable crops in Northern Ireland, 2015.



MOLLUSCICIDE USE ON OUTDOOR VEGETABLE CROPS

- 62 basic treated area (ha)
- 62 total treated area (spha)
- 8 kg applied
- Brussels sprouts, lettuce and turnips were the only crops treated with molluscicides
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to other vegetable crops.
- The three molluscicide active substances applied were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Ferric phosphate	24	24	2	39
Metaldehyde	3	3	1	5
Methiocarb	35	35	5	56

Figure 119: Area of outdoor vegetable crops treated (spha) with molluscicides in Northern Ireland, 2015.

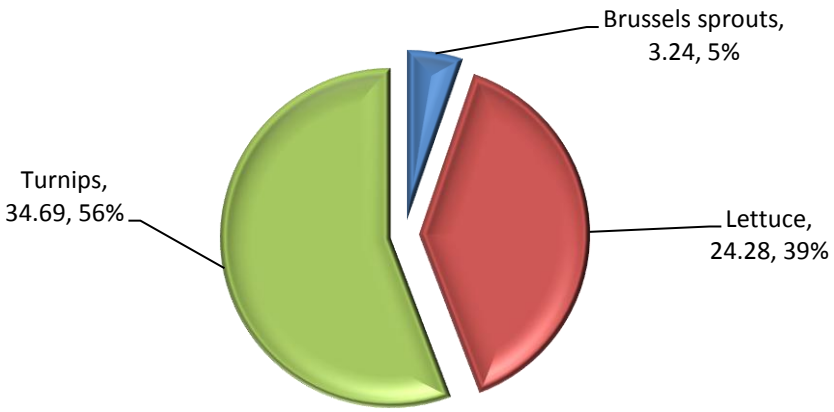
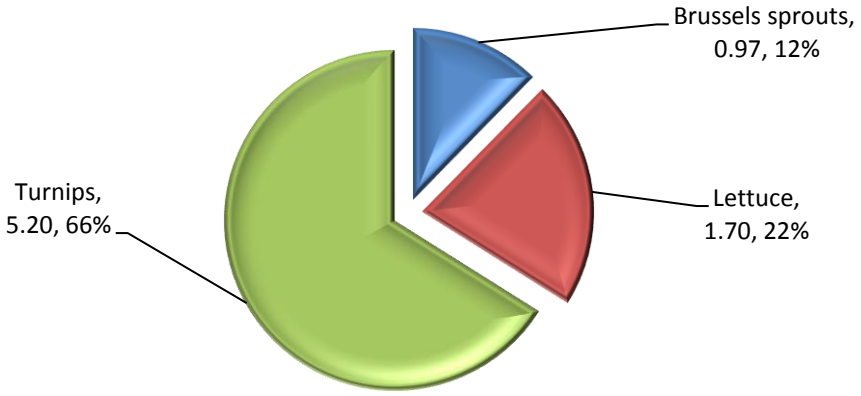


Figure 120: Weight of molluscicides applied (kg) to outdoor vegetable crops in Northern Ireland, 2015.



SEED TREATMENT USE ON OUTDOOR VEGETABLE CROPS

- 986 basic treated area (ha)
- 986 total treated area (spha)
- 8 kg applied
- Refer to Table 7 for individual breakdown of proportional area treated and number of spray applications applied to other vegetable crops.
- The five most commonly applied seed treatment active substances were:

Active substance	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)	% of the treated area
Cymoxanil/fludioxonil/metalaxyl-M	488	488	1	50
Metalaxyl-M	27	27	<1	3
Tefluthrin	108	108	5	11
Thiram	324	324	1	33
Thiamethoxam	30	30	2	3

Figure 121: Area of outdoor vegetable crops (spha) with treated seed in Northern Ireland, 2015.

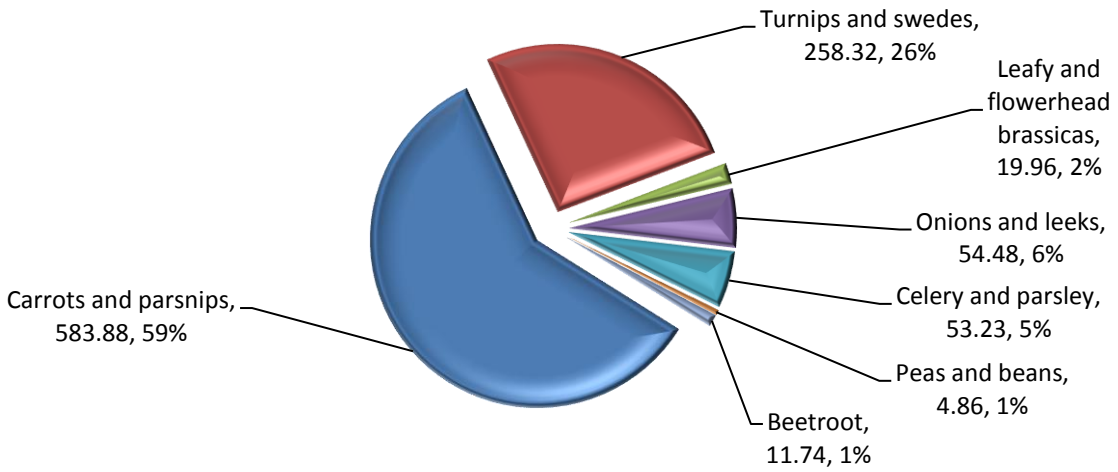


Figure 122: Weight of seed treatments applied (kg) to outdoor vegetable crops in Northern Ireland, 2015.

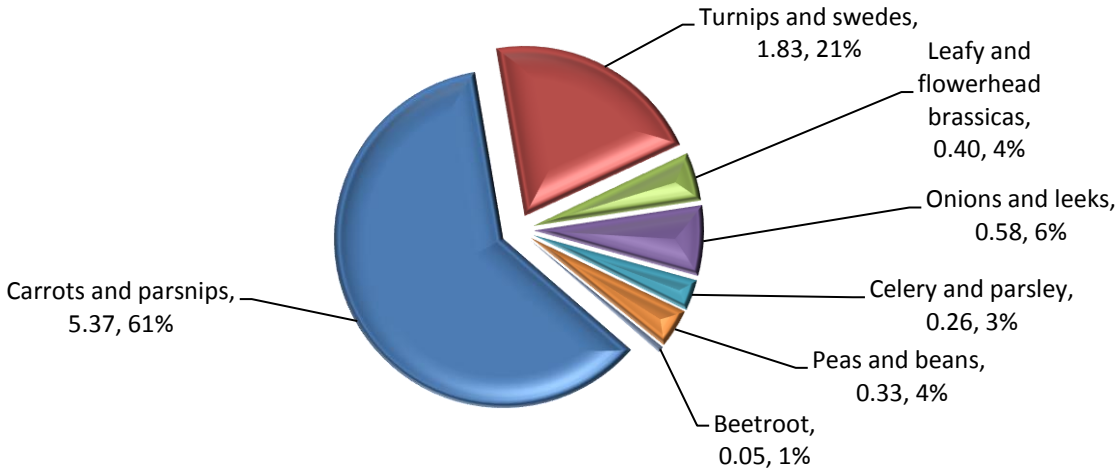
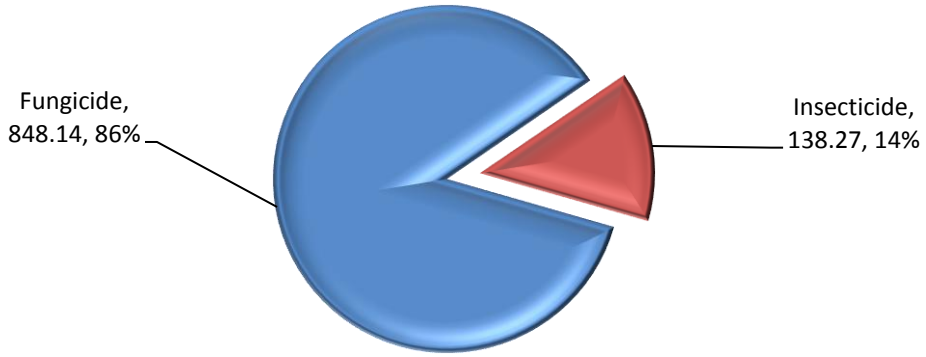


Figure 123: Type of seed treatment applied (spha) to outdoor vegetable crops in Northern Ireland, 2015.



ACKNOWLEDGEMENTS

We, the authors, wish to thank all of the growers who participated in this survey and without whose co-operation the completion of this report would not have been possible. We are also grateful for the assistance of Mr David Williams who worked tirelessly on this report and Ms Lori Hartman, CAFRE, for her invaluable advice regarding pest and disease occurrences in 2015. We would also like to thank staff at the Science & Advice for Scottish Agriculture (SASA), Edinburgh and Fera Science Limited (FERA), York for their advice on many aspects of this report.

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Table 1: **The total number of farms in each size group with vegetable crops in the June 2015 census and number of samples from each size group.**

	Size group (hectares)											
	<2		2<5		5<15		15<40		40+		Total	
Region	A	B	A	B	A	B	A	B	A	B	A	B
Northern Ireland	32	8	18	7	20	12	18	12	6	5	94	44

Legend

A = Total number of holdings in strata

B = Number of holdings surveyed

Table 2: **Total number and area of crops surveyed (ha) in Northern Ireland, 2015.**

Crop type	Number of Crops Surveyed	Surveyed area (ha)
Carrots	26	230.76
Parsnips	16	123.79
Turnips	11	86.66
Swedes	9	84.66
Savoy cabbage	18	42.15
Leeks	10	33.54
Lettuce	2	26.30
Parsley	10	19.59
Soup leeks	5	17.91
Soup celery	6	15.67
White cabbage	5	13.93
Table leeks	5	13.87
Table celery	5	13.44
Summer scallions	2	13.35
Broccoli	11	12.55
Brussels sprouts	6	12.48
Calabrese	9	11.49
Cauliflower	10	9.12
Pointed cabbage	4	8.95
Beetroot	10	7.80
Red cabbage	7	7.55
Spring cabbage	4	6.26
Summer cauliflower	3	5.46
Autumn cabbage	1	4.05
Kale	3	3.94
Salad onions	4	3.89
Winter cabbage	1	3.24
Hard cabbage	2	3.00
Autumn cauliflower	1	2.02
Broad beans	1	1.62
Peas	1	1.62
Purple broccoli	1	1.21
Rhubarb	1	1.01
Pumpkin	1	1.00
Summer cabbage	1	0.81
Celeriac	1	0.13
All crops	**213**	**844.84**

Table 3: **Estimated area (ha) of vegetable crops grown regionally in Northern Ireland, 2015.**

	County					
Crop type	**Antrim**	**Armagh**	**Down**	**Londonderry**	**Tyrone**	**Northern Ireland**
Carrots	.	105.97	179.42	16.69	10.79	312.88
Parsnips	.	7.13	154.36	1.56	1.01	164.07
Turnips	.	22.31	102.65	.	2.70	127.65
Swede	30.27	23.33	66.57	1.04	.	121.21
Savoy cabbage	.	6.82	55.41	1.04	.	63.28
Leeks	.	6.24	38.64	.	.	44.89
Lettuce	.	39.46	.	.	.	39.46
Parsley	.	.	27.38	2.19	.	29.57
Soup leeks	.	.	26.30	1.30	.	27.60
Soup celery	.	.	21.77	1.93	.	23.70
Brussels sprouts	3.24	12.44	3.23	4.16	.	23.08
Table celery	.	19.71	0.51	.	.	20.22
White cabbage	.	6.07	13.92	.	.	19.99
Broccoli	.	3.94	14.81	0.13	.	18.88
Table leeks	.	3.04	15.57	.	.	18.60
Calabrese	.	.	17.24	.	.	17.24
Summer scallions	.	.	16.40	.	.	16.40
Cauliflowers	.	2.38	9.95	0.26	.	12.59
Pointed cabbage	.	6.87	5.64	.	.	12.51
Beetroot	.	.	11.09	1.19	.	12.28
Spring cabbage	.	3.12	7.94	.	.	11.07
Summer cauliflower	.	0.80	8.43	.	.	9.23
Red cabbage	.	.	9.06	.	.	9.06
Salad onions	2.40	4.86	0.06	.	.	7.32
Autumn cabbage	.	.	6.07	.	.	6.07
Winter cabbage	.	.	5.40	.	.	5.40
Hard cabbage	.	.	3.33	1.67	.	5.00
Kale	.	.	4.73	.	.	4.73
Rhubarb	.	4.05	.	.	.	4.05
Pumpkin	.	.	4.00	.	.	4.00
Autumn cauliflower	.	.	3.04	.	.	3.04
Broad beans	.	.	2.43	.	.	2.43
Peas	.	.	2.43	.	.	2.43
Purple broccoli	.	.	1.46	.	.	1.46
Summer cabbage	.	.	1.35	.	.	1.35
Celeriac	.	.	0.53	.	.	0.53
All crops	**35.91**	**278.54**	**841.12**	**33.15**	**14.50**	**1,203.23**

Table 4a: **Estimated area (spha) of vegetable crops treated regionally in Northern Ireland, 2015 with each pesticide type.**

	County					
Pesticide type	**Antrim**	**Armagh**	**Down**	**Londonderry**	**Tyrone**	**Northern Ireland**
Fungicide	10.52	1,065.89	1,702.84	16.24	33.39	2,828.87
Herbicide	73.47	911.15	3,206.95	110.31	49.24	4,351.13
Insecticide	3.24	1,156.14	1,924.73	96.69	22.60	3,203.39
Molluscicide	3.24	24.28	34.69	.	.	62.21
Seed treatment	69.42	166.03	711.15	25.37	14.50	986.47
All pesticides	**159.89**	**3,323.49**	**7,580.36**	**248.61**	**119.72**	**11,432.07**

Table 4b: **Estimated weight (kg) of pesticide applied regionally in Northern Ireland, 2015 with each pesticide type.**

	County					
Pesticide type	**Antrim**	**Armagh**	**Down**	**Londonderry**	**Tyrone**	**Northern Ireland**
Fungicide	2.06	398.08	631.58	3.74	8.49	1,043.96
Herbicide	54.84	599.77	1,923.64	59.30	42.31	2,679.86
Insecticide	0.03	333.86	338.23	16.64	0.94	689.70
Molluscicide	0.97	1.70	5.20	.	.	7.87
Seed treatment	1.65	0.31	5.84	0.03	0.02	7.84
All pesticides	**59.56**	**1,333.71**	**2,904.49**	**79.72**	**51.76**	**4,429.24**

Table 5: **The total area (spha) and the basic area (ha) of vegetable crops treated with each pesticide type in Northern Ireland, 2015.**

	Pesticide Type											
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Seed treatments		All pesticides	
Crop type	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)
Carrots	1,064.82	298.33	1,680.42	312.35	1,466.30	312.34	.	.	366.34	312.34	4,577.88	312.35
Parsnips	562.29	107.35	737.41	163.53	644.86	119.14	.	.	217.53	163.53	2,162.09	163.53
Turnips	3.33	1.67	302.36	127.12	174.51	23.52	34.69	34.69	127.12	127.12	642.00	127.12
Lettuce	306.54	39.46	103.19	39.46	133.54	39.46	24.28	24.28	.	.	567.56	39.46
Savoy cabbage	146.63	60.16	109.89	63.28	180.70	59.92	.	.	.	.	437.22	63.28
Leeks	61.20	38.71	273.85	44.35	.	.	.	.	17.21	17.21	352.25	44.35
Soup leeks	79.49	27.61	185.87	27.61	.	.	.	.	27.08	27.08	292.44	27.61
Swede	.	.	159.88	100.93	.	.	.	.	131.20	100.93	291.08	100.93
Parsley	57.11	19.09	107.93	29.57	15.17	9.13	.	.	26.60	26.60	206.82	29.57
Brussels sprouts	71.74	22.54	46.20	22.54	57.74	18.38	3.24	3.24	6.48	3.24	185.39	22.54
Soup celery	53.06	16.69	96.40	23.70	6.73	6.21	.	.	23.70	23.70	179.90	23.70
Table celery	43.31	19.71	38.90	20.22	86.13	19.71	.	.	2.93	2.93	171.28	20.22
White cabbage	47.22	15.74	30.79	19.99	81.09	19.99	.	.	.	.	159.10	19.99
Broccoli	44.39	14.55	49.13	18.88	57.71	15.98	.	.	.	.	151.23	18.88
Table leeks	41.06	18.60	70.98	18.60	12.14	4.55	.	.	1.52	1.52	125.70	18.60
Cauliflowers	38.82	10.77	31.72	12.59	51.04	10.51	.	.	.	.	121.58	12.59
Pointed cabbage	35.56	11.71	29.43	12.51	40.77	11.71	.	.	.	.	105.76	12.51
Summer cauliflower	20.57	8.43	33.85	9.23	42.28	9.23	.	.	.	.	96.69	9.23
Summer scallions	1.35	1.35	83.36	16.40	.	.	.	.	1.35	1.35	86.06	16.40
Red cabbage	16.80	7.80	24.65	9.06	33.60	7.80	.	.	.	.	75.05	9.06
Autumn cabbage	30.35	6.07	12.14	6.07	18.21	6.07	.	.	.	.	60.70	6.07
Calabrese	7.08	7.08	16.65	16.65	34.47	17.24	.	.	.	.	58.20	17.24
Beetroot	6.74	3.37	30.80	11.34	0.78	0.78	.	.	11.74	11.74	50.07	11.74
Spring cabbage	6.74	6.74	19.01	11.07	9.87	9.87	.	.	13.49	6.74	49.11	11.07
Winter cabbage	16.19	5.40	10.79	5.40	21.58	5.40	.	.	.	.	48.56	5.40
Salad onions	15.38	5.26	22.70	7.32	.	.	.	.	7.32	7.32	45.40	7.32
Hard cabbage	13.33	3.33	11.67	5.00	10.00	5.00	.	.	.	.	35.00	5.00
Autumn Cauliflower	15.18	3.04	6.07	3.04	9.11	3.04	.	.	.	.	30.35	3.04
Broad beans	7.28	2.43	4.86	2.43	4.86	2.43	.	.	2.43	2.43	19.42	2.43

Table 5 contd: **The total area (spray hectares) and the basic area (hectares) of vegetable crops treated with each pesticide type in Northern Ireland, 2015.**

	Pesticide Type											
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Seed treatments		All pesticides	
Crop type	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)	(spha)	(ha)
Peas	7.28	2.43	4.86	2.43	4.86	2.43	.	.	2.43	2.43	19.42	2.43
Pumpkin	8.00	4.00	4.00	4.00	4.00	4.00	.	.	.	.	16.00	4.00
Kale	.	.	7.13	4.73	.	.	.	.	.	.	7.13	4.73
Purple broccoli	.	.	2.91	1.46	.	.	.	.	.	.	2.91	1.46
Summer cabbage	.	.	1.35	1.35	1.35	1.35	.	.	.	.	2.70	1.35
All crops	**2,828.87**	**789.42**	**4,351.13**	**1,174.18**	**3,203.39**	**745.18**	**62.21**	**62.21**	**986.47**	**838.22**	**11,432.07**	**1,175.17**

Table 6: **The total quantities (kg) of each pesticide type used on vegetable crops in Northern Ireland 2015.**

	Pesticide Type					
Crop type	**Fungicides**	**Herbicides & dessicants**	**Insecticides**	**Molluscicides**	**Seed treatments**	**Total quantity (kg)**
Carrots	357.40	886.54	225.71	.	4.46	1,474.11
Parsnips	285.99	592.28	70.30	.	0.90	949.47
Turnips	13.65	173.89	276.03	5.20	0.12	468.90
Lettuce	88.69	118.75	13.40	1.70	.	222.54
Soup leeks	20.41	132.99	.	.	<0.05	153.44
Leeks	20.93	107.71	.	.	<0.05	128.66
Savoy cabbage	38.49	63.71	15.10	.	.	117.31
Parsley	15.17	73.26	2.67	.	<0.05	91.11
Soup celery	14.14	69.02	2.58	.	0.06	85.80
Swede	.	73.52	.	.	1.71	75.23
White cabbage	22.13	18.21	33.99	.	.	74.33
Table celery	13.29	54.26	6.02	.	<0.05	73.58
Table leeks	22.94	39.82	10.72	.	<0.05	73.48
Brussels sprouts	18.28	41.40	6.14	0.97	<0.05	66.80
Broccoli	17.31	30.59	4.24	.	.	52.14
Pointed cabbage	21.20	14.42	1.93	.	.	37.56
Summer scallions	1.45	33.42	.	.	<0.05	34.88
Salad onions	14.45	16.71	.	.	0.18	31.34
Summer cauliflower	6.57	19.48	3.17	.	.	29.22
Cauliflowers	11.65	13.71	3.55	.	.	28.91
Beetroot	3.16	25.16	0.01	.	<0.05	28.33
Autumn cabbage	12.15	13.29	1.79	.	.	27.23
Calabrese	1.03	12.49	4.05	.	.	17.57
Red cabbage	4.13	9.80	2.18	.	.	16.11
Autumn cauliflower	6.07	6.65	0.90	.	.	13.62
Pumpkin	4.01	5.76	0.38	.	.	10.15
Winter cabbage	2.61	4.53	1.75	.	.	8.90
Hard cabbage	2.08	5.39	1.30	.	.	8.77
Broad beans	2.02	6.09	0.35	.	0.18	8.65

Table 6 contd: **The total quantities (kg) of each pesticide type used on vegetable crops in Northern Ireland 2015.**

	Pesticide Type					
Crop type	**Fungicides**	**Herbicides & dessicants**	**Insecticides**	**Molluscicides**	**Seed treatments**	**Total quantity (kg)**
Peas	2.02	6.09	0.35	.	0.14	8.61
Spring cabbage	0.51	6.98	0.92	.	<0.05	8.42
Kale	.	2.06	.	.	.	2.06
Purple broccoli	.	1.20	.	.	.	1.20
Summer cabbage	.	0.67	0.17	.	.	0.84
All Crops	**1,043.96**	**2,679.86**	**689.70**	**7.87**	**7.84**	**4,429.24**

Table 7: **The proportional area (%) of each crop treated with pesticides and the number of spray applications (in parentheses) in Northern Ireland, 2015.**

	Pesticide type											
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Seed treatments		All pesticides	
Crop type	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps
Autumn cabbage	100%	5.00	100%	2.00	100%	3.00	.	.	.	.	100.0	3.33
Autumn cauliflower	100%	5.00	100%	2.00	100%	3.00	.	.	.	.	100.0	3.33
Beetroot	27%	2.00	92%	2.00	6%	1.00	.	.	96%	1.00	95.7	1.43
Broad beans	100%	3.00	100%	2.00	100%	2.00	.	.	100%	1.00	100.0	2.00
Broccoli	77%	2.16	100%	1.85	85%	2.52	.	.	.	.	100.0	2.12
Brussels sprouts	98%	1.89	98%	2.22	80%	2.38	14%	1.00	14%	2.00	97.7	2.01
Spring cabbage	61%	1.00	100%	1.12	89%	1.00	.	.	61%	2.00	100.0	1.14
Summer cabbage	.	.	100%	1.00	100%	1.00	.	.	.	.	100.0	1.00
winter cabbage	100%	3.00	100%	2.00	100%	4.00	.	.	.	.	100.0	3.00
Calabrese	41%	1.00	97%	1.00	100%	2.00	.	.	.	.	100.0	1.45
Carrots	95%	2.03	100%	3.41	100%	2.58	.	.	100%	1.03	99.8	2.38
Cauliflowers	86%	2.70	100%	2.03	84%	4.20	.	.	.	.	100.0	2.73
Hard cabbage	67%	4.00	100%	2.50	100%	2.00	.	.	.	.	100.0	2.60
Kale	.	.	100%	1.67	.	.	.	.	.	.	100.0	1.67
Leeks	86%	1.95	99%	4.25	.	.	.	.	38%	1.00	98.8	2.96
Lettuce	100%	4.33	100%	1.67	100%	2.33	62%	1.00	.	.	100.0	2.60
Parsley	65%	3.31	100%	2.41	31%	1.45	.	.	90%	1.00	100.0	2.01
Parsnips	65%	2.63	100%	3.06	73%	2.97	.	.	100%	1.05	99.7	2.42
Peas	100%	3.00	100%	2.00	100%	2.00	.	.	100%	1.00	100.0	2.00
Pointed cabbage	94%	2.77	100%	1.91	94%	3.62	.	.	.	.	100.0	2.55
Pumpkin	100%	2.00	100%	1.00	100%	1.00	.	.	.	.	100.0	1.33
Purple broccoli	.	.	100%	2.00	.	.	.	.	.	.	100.0	2.00
Red cabbage	86%	2.25	100%	2.43	86%	4.50	.	.	.	.	100.0	2.93
Salad onion	72%	1.32	100%	2.17	.	.	.	.	100%	1.00	100.0	1.50
Savoys	95%	2.35	100%	1.61	95%	2.62	.	.	.	.	100.0	2.13
Summer scallions	8%	1.00	100%	3.53	.	.	.	.	8%	1.00	100.0	2.46
Soup celery	70%	2.80	100%	2.61	26%	1.61	.	.	100%	1.00	100.0	2.03
Soup leeks	100%	1.28	100%	3.08	.	.	.	.	98%	1.00	100.0	2.01
Summer cauliflower	91%	2.89	100%	1.74	100%	2.09	.	.	.	.	100.0	2.06

Table 7 (contd): **The proportional area (%) of each crop treated with pesticides and the number of spray applications (in parentheses) in Northern Ireland, 2015.**

	Pesticide type											
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Seed treatments		All pesticides	
Crop type	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps
Swede	.	.	83%	1.63	.	.	.	.	83%	1.30	83.3	1.47
Table celery	97%	3.25	100%	1.80	97%	3.25	.	.	15%	1.00	100.0	2.45
Table leeks	100%	2.90	100%	4.02	24%	2.50	.	.	8%	1.00	100.0	3.12
Turnips	1%	2.00	100%	1.54	18%	2.93	27%	1.00	100%	1.00	99.6	1.58
White cabbage	79%	3.00	100%	2.04	100%	2.71	.	.	.	.	100.0	2.58
Total	**66%**	**2.32**	**98%**	**2.38**	**62%**	**2.47**	**5%**	**1.00**	**70%**	**1.07**	**99.3**	**2.16**

Table 8: **Estimated area (spha) of vegetable crops treated with pesticide formulations in Northern Ireland 2015.**

	Crop type												
Pesticide group & active substance	**Leafy brassicas**	**Beetroot**	**Carrot**	**Celery**	**Leek**	**Lettuce**	**Onions & spring onions**	**Parsley**	**Parsnip**	**Peas & beans**	**Turnip & swede**	**All curcurbit**	**Total Area (spha)**
Fungicides													
Azoxystrobin	80.59	.	30.35	37.21	21.58	112.30	5.66	25.02	72.84	4.86	.	.	390.42
Azoxystrobin/chlorothalonil	.	.	.	.	.	.	4.86	.	.	.	.	.	4.86
Azoxystrobin/difenoconazole	73.19	.	246.16	1.21	5.06	.	.	.	120.88	.	.	.	446.50
Boscalid/pyraclostrobin	50.67	.	173.24	.	.	.	.	.	54.00	4.86	.	8.00	290.77
Chlorothalonil	.	.	.	0.26	2.60	.	.	.	.	.	.	.	2.86
Chlorothalonil/metalaxyl-M	45.83	.	.	0.61	3.71	.	1.35	.	.	.	.	.	51.50
Copper oxychloride	.	.	.	4.50	.	.	.	.	.	.	.	.	4.50
Cyproconazole/trifloxystrobin	.	3.37	.	.	.	.	.	.	.	.	.	.	3.37
Cyprodinil/fludioxonil	.	.	.	.	.	72.84	.	.	54.00	.	.	.	126.84
Difenoconazole	207.72	.	.	37.41	5.73	.	.	19.95	.	.	.	.	270.81
Dimethomorph/mancozeb	21.55	.	.	0.61	15.25	24.28	4.86	.	.	.	.	.	66.54
Fenhexamid	.	.	.	.	.	48.56	.	.	.	.	.	.	48.56
Fenpropimorph	.	3.37	26.30	.	.	.	.	.	80.26	.	.	.	109.94
Mancozeb	.	.	.	.	.	.	.	.	54.00	.	.	.	54.00
Mancozeb/metalaxyl-M	.	.	.	12.14	.	.	.	12.14	.	.	.	.	24.28
Mandipropamid	.	.	.	.	.	48.56	.	.	.	.	.	.	48.56
Metalaxyl-M	.	.	180.63	.	.	.	.	.	54.00	.	.	.	234.63
Prothioconazole	24.28	.	183.86	.	64.54	.	.	.	12.88	.	1.67	.	287.23
Sulphur	.	.	.	.	.	.	.	.	.	.	1.67	.	1.67
Tebuconazole	.	.	102.20	.	24.96	.	.	.	52.00	4.86	.	.	184.01
Tebuconazole/trifloxystrobin	6.78	.	122.07	.	38.33	.	.	.	7.42	.	.	.	174.60
Unknown fungicide	.	.	.	2.43	.	.	.	.	.	.	.	.	2.43
All fungicides	**510.61**	**6.74**	**1,064.82**	**96.38**	**181.76**	**306.54**	**16.73**	**57.11**	**562.29**	**14.57**	**3.33**	**8.00**	**2,828.87**

Table 8 (cont): **Estimated area (spha) of vegetable crops treated with pesticide formulations in Northern Ireland 2015.**

Pesticide group & active substance	Leafy brassicas	Beetroot	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
Herbicides & desiccants													
Chloridazon	.	.	.	.	39.84	.	19.91	.	.	.	.	.	59.75
Chlorpropham	.	.	.	.	29.14	.	15.05	.	.	.	.	.	44.19
Clomazone	131.49	.	203.75	.	.	.	.	.	.	.	186.57	.	521.81
Clopyralid	.	.	.	.	.	.	.	.	.	.	1.35	.	1.35
Dimethenamid-P/pendimethalin	.	.	.	.	30.40	24.28	16.40	.	.	.	.	.	71.08
Diquat	.	2.02	8.32	0.77	1.35	.	.	1.53	8.31	.	.	.	22.30
Ethofumesate	.	3.37	.	.	.	.	.	.	.	.	.	.	3.37
Fluroxypyr	.	.	.	.	2.02	.	.	.	.	.	.	.	2.02
Glyphosate	43.21	1.55	43.77	18.10	36.98	15.18	6.21	14.82	40.47	4.86	87.22	4.00	316.35
Imazamox/pendimethalin	.	.	.	.	.	.	.	.	.	4.86	.	.	4.86
Ioxynil	3.24	.	.	.	133.05	.	26.42	.	.	.	.	.	162.71
Lenacil	.	6.85	.	.	.	.	.	.	.	.	.	.	6.85
Linuron	1.67	.	639.32	54.97	1.30	.	.	44.54	296.91	.	.	.	1,038.70
Metamitron	.	7.08	.	.	.	.	.	.	54.00	.	.	.	61.08
Metazachlor	255.62	0.78	.	0.61	58.89	.	.	.	.	.	187.10	.	503.01
Metribuzin	.	.	240.44	.	.	.	.	.	1.01	.	.	.	241.45
Pendimethalin	4.90	.	287.54	22.34	41.15	24.28	21.66	24.78	180.91	.	.	.	607.57
Phenmedipham	.	5.77	.	.	.	.	.	.	.	.	.	.	5.77
Propaquizafop	.	.	57.01	.	.	.	.	.	.	.	.	.	57.01
Propyzamide	.	.	.	.	.	39.46	.	.	.	.	.	.	39.46
Prosulfocarb	.	.	152.49	30.50	99.20	.	.	14.45	91.81	.	.	.	388.46
Tepraloxydim	3.24	.	47.78	5.60	57.36	.	0.40	7.80	63.99	.	.	.	186.19
Triflusulfuron-methyl	.	3.37	.	.	.	.	.	.	.	.	.	.	3.37
Unknown herbicide	.	.	.	2.43	.	.	.	.	.	.	.	.	2.43
All herbicides	**443.37**	**30.80**	**1,680.42**	**135.30**	**530.69**	**103.19**	**106.06**	**107.93**	**737.41**	**9.71**	**462.23**	**4.00**	**4,351.13**

Table 8 (cont): **Estimated area (spha) of vegetable crops treated with pesticide formulations in Northern Ireland 2015.**

Pesticide group & active substance	Leafy brassicas	Beetroot	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
Insecticides													
Chlorpyrifos	1.67	.	.	.	.	.	.	.	.	.	.	.	1.67
Cypermethrin	106.88	.	.	1.21	6.07	.	.	.	.	.	.	.	114.17
Deltamethrin	35.20	.	164.23	4.50	.	24.28	.	.	59.46	.	1.67	.	289.35
Garlic Extract	4.25	.	21.25	1.50	1.52	.	.	.	1.82	.	170.42	.	200.75
Indoxacarb	24.96	.	.	.	.	.	.	.	.	.	.	.	24.96
Lambda-cyhalothrin	156.37	0.78	877.97	45.79	1.52	30.35	.	8.85	368.85	4.86	2.43	.	1,497.76
Oxamyl	.	.	38.28	1.67	.	.	.	1.67	43.84	.	.	.	85.45
Pirimicarb	217.20	.	123.86	35.77	3.04	30.35	.	4.65	109.46	4.86	.	.	529.19
Pymetrozine	12.60	.	.	.	.	24.28	.	.	.	.	.	.	36.88
Spinosad	.	.	.	.	.	.	.	.	.	.	.	4.00	4.00
Spirotetramat	40.47	.	.	.	.	24.28	.	.	.	.	.	.	64.75
Thiacloprid	49.91	.	240.71	.	.	.	.	.	61.42	.	.	.	352.04
Unknown insecticide	.	.	.	2.43	.	.	.	.	.	.	.	.	2.43
All insecticides	**649.51**	**0.78**	**1,466.30**	**92.86**	**12.14**	**133.54**	**.**	**15.17**	**644.86**	**9.71**	**174.51**	**4.00**	**3,203.39**
Molluscicides													
Ferric phosphate	.	.	.	.	.	24.28	.	.	.	.	.	.	24.28
Metaldehyde	3.24	.	.	.	.	.	.	.	.	.	.	.	3.24
Methiocarb	.	.	.	.	.	.	.	.	.	.	34.69	.	34.69
All molluscicides	**3.24**	**.**	**.**	**.**	**.**	**24.28**	**.**	**.**	**.**	**.**	**34.69**	**.**	**62.21**
Seed Treatments													
Cymoxanil/fludioxonil/metalaxyl-M	.	11.74	312.34	.	.	.	.	.	163.53	.	.	.	487.62
Iprodione	9.98	.	.	.	.	.	.	.	.	.	.	.	9.98
Metalaxyl-M	.	.	.	.	.	.	.	26.60	.	.	.	.	26.60
Tefluthrin	.	.	54.00	.	.	.	.	.	54.00	.	.	.	108.00
Thiamethoxam	.	.	.	.	.	.	.	.	.	.	30.27	.	30.27
Thiram	9.98	.	.	26.63	45.81	.	8.61	.	.	4.86	228.05	.	323.93
Unknown seed treatment	.	.	.	.	.	.	0.06	.	.	.	.	.	0.06
All seed treatments	**19.96**	**11.74**	**366.34**	**26.63**	**45.81**	**.**	**8.67**	**26.60**	**217.53**	**4.86**	**258.32**	**.**	**986.47**

Table 9: **Estimated quantities (kg) of pesticide formulations used on vegetable crops in Northern Ireland 2015.**

	Crop type												
Pesticide group & active substance	**Leafy brassicas**	**Beetroot**	**Carrot**	**Celery**	**Leek**	**Lettuce**	**Onions & spring onions**	**Parsley**	**Parsnip**	**Peas & beans**	**Turnip & swede**	**All curcurbit**	**Total quantity (kg)**
Fungicides													
Azoxystrobin	20.15	.	7.59	9.30	5.40	15.93	1.42	6.26	18.21	1.21	.	.	85.46
Azoxystrobin/chlorothalonil	.	.	.	.	.	.	5.83	.	.	.	.	.	5.83
Azoxystrobin/difenoconazole	23.79	.	80.00	0.39	1.64	.	.	.	39.29	.	.	.	145.11
Boscalid/pyraclostrobin	16.92	.	57.86	.	.	.	.	.	18.04	1.62	.	4.01	98.45
Chlorothalonil	.	.	.	0.26	1.30	.	.	.	.	.	.	.	1.56
Chlorothalonil/metalaxyl-M	49.27	.	.	0.65	3.99	.	1.45	.	.	.	.	.	55.36
Copper oxychloride	.	.	.	4.86	.	.	.	.	.	.	.	.	4.86
Cyproconazole/trifloxystrobin	.	0.63	.	.	.	.	.	.	.	.	.	.	0.63
Cyprodinil/fludioxonil	.	.	.	.	.	13.66	.	.	27.00	.	.	.	40.66
Difenoconazole	15.49	.	.	3.65	0.43	.	.	1.50	.	.	.	.	21.07
Dimethomorph/mancozeb	31.98	.	.	0.90	22.63	36.03	7.21	.	.	.	.	.	98.75
Fenhexamid	.	.	.	.	.	17.00	.	.	.	.	.	.	17.00
Fenpropimorph	.	2.53	19.73	.	.	.	.	.	60.20	.	.	.	82.45
Mancozeb	.	.	.	.	.	.	.	.	81.00	.	.	.	81.00
Mancozeb/metalaxyl-M	.	.	.	7.42	.	.	.	7.42	.	.	.	.	14.83
Mandipropamid	.	.	.	.	.	6.07	.	.	.	.	.	.	6.07
Metalaxyl-M	.	.	100.40	.	.	.	.	.	25.12	.	.	.	125.52
Prothioconazole	4.66	.	35.30	.	12.39	.	.	.	2.47	.	0.32	.	55.15
Sulphur	.	.	.	.	.	.	.	.	.	.	13.33	.	13.33
Tebuconazole	.	.	25.00	.	6.24	.	.	.	13.00	1.21	.	.	45.46
Tebuconazole/trifloxystrobin	1.96	.	31.52	.	10.27	.	.	.	1.67	.	.	.	45.41
All fungicides	**164.22**	**3.16**	**357.40**	**27.44**	**64.28**	**88.69**	**15.90**	**15.17**	**285.99**	**4.05**	**13.65**	**4.01**	**1043.96**

Table 9 (cont): **Estimated quantities (kg) of pesticide formulations used on vegetable crops in Northern Ireland 2015.**

Pesticide group & active substance	Leafy brassicas	Beetroot	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total quantity (kg)
Herbicides & desiccants													
Chloridazon	.	.	.	.	18.65	.	11.27	.	.	.	.	.	29.92
Chlorpropham	.	.	.	.	11.65	.	6.02	.	.	.	.	.	17.68
Clomazone	7.88	.	13.78	.	.	.	.	.	.	.	11.03	.	32.70
Clopyralid	.	.	.	.	.	.	.	.	.	.	0.27	.	0.27
Dimethenamid-P/pendimethalin	.	.	.	.	26.60	14.04	10.85	.	.	.	.	.	51.49
Diquat	.	0.61	6.66	0.41	0.54	.	.	0.82	3.95	.	.	.	12.98
Ethofumesate	.	3.37	.	.	.	.	.	.	.	.	.	.	3.37
Fluroxypyr	.	.	.	.	0.12	.	.	.	.	.	.	.	0.12
Glyphosate	59.83	2.05	49.31	13.98	32.60	21.85	8.19	12.37	56.94	6.99	108.14	5.76	378.03
Imazamox/pendimethalin	.	.	.	.	.	.	.	.	.	5.18	.	.	5.18
Ioxynil	1.31	.	.	.	12.36	.	3.13	.	.	.	.	.	16.79
Lenacil	.	4.49	.	.	.	.	.	.	.	.	.	.	4.49
Linuron	0.75	.	161.17	24.68	0.59	.	.	17.23	88.15	.	.	.	292.56
Metamitron	.	12.35	.	.	.	.	.	.	75.60	.	.	.	87.95
Metazachlor	188.94	0.59	.	0.46	32.35	.	.	.	.	.	127.97	.	350.30
Metribuzin	.	.	46.39	.	.	.	.	.	<0.10	.	.	.	46.46
Pendimethalin	5.65	.	339.19	19.99	17.18	27.62	10.64	20.17	201.29	.	.	.	641.73
Phenmedipham	.	1.66	.	.	.	.	.	.	.	.	.	.	1.66
Propaquizafop	.	.	6.71	.	.	.	.	.	.	.	.	.	6.71
Propyzamide	.	.	.	.	.	55.24	.	.	.	.	.	.	55.24
Prosulfocarb	.	.	259.79	63.35	123.95	.	.	22.09	161.47	.	.	.	630.64
Tepraloxydim	0.24	.	3.53	0.42	3.94	.	<0.10	0.59	4.80	.	.	.	13.55
Triflusulfuron-methyl	.	<0.10	.	.	.	.	.	.	.	.	.	.	<0.10
All herbicides	**264.60**	**25.16**	**886.54**	**123.28**	**280.53**	**118.75**	**50.13**	**73.26**	**592.28**	**12.17**	**247.41**	**5.76**	**2679.86**

Table 9 (cont): **Estimated quantities (kg) of pesticide formulations used on vegetable crops in Northern Ireland 2015.**

Pesticide group & active substance	Leafy brassicas	Beetroot	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total quantity (kg)
Insecticides													
Chlorpyrifos	0.56	.	.	.	.	.	.	.	.	.	.	.	0.56
Cypermethrin	2.67	.	.	0.03	0.15	.	.	.	.	.	.	.	2.85
Deltamethrin	0.26	.	1.23	0.03	.	0.12	.	.	0.45	.	<0.10	.	2.09
Garlic Extract	28.68	.	143.41	1.20	10.25	.	.	.	12.29	.	276.01	.	471.84
Indoxacarb	0.64	.	.	.	.	.	.	.	.	.	.	.	0.64
Lambda-cyhalothrin	1.25	<0.10	8.41	0.46	<0.10	0.23	.	0.12	4.16	0.02	<0.10	.	14.65
Oxamyl	.	.	36.04	2.08	.	.	..	2.08	37.62	.	.	.	77.82
Pirimicarb	36.38	.	13.53	4.80	0.30	7.59	.	0.47	9.89	0.68	.	.	73.64
Pymetrozine	2.52	.	.	.	.	3.64	.	.	.	.	.	.	6.16
Spinosad	.	.	.	.	.	.	.	.	.	.	.	0.38	0.38
Spirotetramat	3.04	.	.	.	.	1.82	.	.	.	.	.	.	4.86
Thiacloprid	5.18	.	23.08	.	.	.	.	.	5.90	.	.	.	34.16
All insecticides	**81.18**	**<0.10**	**225.71**	**8.60**	**10.72**	**13.40**	**.**	**2.67**	**70.30**	**0.70**	**276.03**	**0.38**	**689.69**
Molluscicides													
Ferric phosphate	.	.	.	.	.	1.70	.	.	.	.	.	.	1.70
Metaldehyde	0.97	.	.	.	.	.	.	.	.	.	.	.	0.97
Methiocarb	.	.	.	.	.	.	.	.	.	.	5.20	.	5.20
All molluscicides	**0.97**	**.**	**.**	**.**	**.**	**1.70**	**.**	**.**	**.**	**.**	**5.20**	**.**	**7.87**
Seed Treatments													
Cymoxanil/fludioxonil/metalaxyl-M	.	0.01	0.46	.	.	.	.	.	0.10	.	.	.	0.57
Iprodione	0.01	.	.	.	.	.	.	.	.	.	.	.	0.01
Metalaxyl-M	.	.	.	.	.	.	.	<0.01	.	.	.	.	<0.01
Tefluthrin	.	.	4.00	.	.	.	.	.	0.80	.	.	.	4.80
Thiamethoxam	.	.	.	.	.	.	.	.	.	.	1.55	.	1.55
Thiram	0.01	.	.	0.06	0.06	.	0.18	.	.	0.33	0.28	.	0.91
All seed treatments	**0.02**	**0.01**	**4.46**	**0.06**	**0.06**	**.**	**0.18**	**<0.01**	**0.90**	**0.33**	**1.83**	**.**	**7.84**

Table 10 **The fifty active ingredients most extensively used on vegetable crops in Northern Ireland, 2015 ranked by treated area (spha).**

No.	Active substance	Treated area (spha)
1	Lambda-cyhalothrin	1,498
2	Linuron	1,039
3	Azoxystrobin	842
4	Difenoconazole	717
5	Pendimethalin	684
6	Pirimicarb	529
7	Clomazone	522
8	Metazachlor	503
9	Prosulfocarb	388
10	Tebuconazole	359
11	Thiacloprid	352
12	Glyphosate	316
13	Metalaxyl-M	310
14	Pyraclostrobin	291
15	Boscalid	291
16	Deltamethrin	289
17	Prothioconazole	287
18	Metribuzin	241
19	Garlic Extract	201
20	Tepraloxydim	186
21	Trifloxystrobin	178
22	Ioxynil	163
23	Mancozeb	145
24	Cyprodinil	127
25	Fludioxonil	127
26	Cypermethrin	114
27	Fenpropimorph	110
28	Oxamyl	85
29	Dimethenamid-P	71
30	Dimethomorph	67
31	Spirotetramat	65
32	Metamitron	61
33	Chloridazon	60
34	Chlorothalonil	59
35	Propaquizafop	57
36	Fenhexamid	49
37	Mandipropamid	49
38	Chlorpropham	44
39	Propyzamide	39
40	Pymetrozine	37
41	Methiocarb	35
42	Indoxacarb	25
43	Ferric phosphate	24
44	Diquat	22
45	Lenacil	7
46	Phenmedipham	6
47	Imazamox	5
48	Copper oxychloride	5
49	Spinosad	4
50	Ethofumesate	3

Table 11 **The fifty active ingredients most extensively used on vegetable crops in Northern Ireland, 2015 ranked by weight (kg).**

No.	Active substance	Quantity applied (kg)
1	Pendimethalin	674
2	Prosulfocarb	631
3	Garlic Extract	472
4	Glyphosate	378
5	Metazachlor	350
6	Linuron	293
7	Mancozeb	184
8	Azoxystrobin	176
9	Metalaxyl-M	130
10	Metamitron	88
11	Fenpropimorph	82
12	Boscalid	79
13	Oxamyl	78
14	Difenoconazole	77
15	Tebuconazole	76
16	Pirimicarb	74
17	Chlorothalonil	58
18	Propyzamide	55
19	Prothioconazole	55
20	Metribuzin	46
21	Thiacloprid	34
22	Clomazone	33
23	Chloridazon	30
24	Cyprodinil	24
25	Dimethenamid-P	24
26	Pyraclostrobin	20
27	Chlorpropham	18
28	Fenhexamid	17
29	Ioxynil	17
30	Fludioxonil	16
31	Trifloxystrobin	16
32	Lambda-cyhalothrin	15
33	Tepraloxydim	14
34	Sulphur	13
35	Diquat	13
36	Dimethomorph	10
37	Propaquizafop	7
38	Pymetrozine	6
39	Mandipropamid	6
40	Methiocarb	5
41	Copper oxychloride	5
42	Spirotetramat	5
43	Lenacil	4
44	Ethofumesate	3
45	Cypermethrin	3
46	Deltamethrin	2
47	Ferric phosphate	2
48	Phenmedipham	2
49	Metaldehyde	1
50	Indoxacarb	1

Table 12: **Autumn cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides							
Azoxystrobin/difenoconazole	6.07	.	.	.	6.07	6.07	1.97
Boscalid/pyraclostrobin	6.07	.	.	.	6.07	6.07	2.03
Chlorothalonil/metalaxyl-M	6.07	.	.	.	6.07	6.07	6.53
Difenoconazole	6.07	.	.	.	6.07	6.07	0.46
Prothioconazole	6.07	.	.	.	6.07	6.07	1.17
All fungicides	**30.35**	**.**	**.**	**.**	**30.35**	**.**	**12.15**
Herbicides & desiccants							
Glyphosate	.	.	.	6.07	6.07	6.07	8.74
Metazachlor	.	.	6.07	.	6.07	6.07	4.55
All herbicides	**.**	**.**	**6.07**	**6.07**	**12.14**	**.**	**13.29**
Insecticides							
Lambda-cyhalothrin	.	6.07	.	.	6.07	6.07	0.06
Pirimicarb	.	6.07	.	.	6.07	6.07	1.27
Spirotetramat	.	6.07	.	.	6.07	6.07	0.46
All insecticides	**.**	**18.21**	**.**	**.**	**18.21**	**.**	**1.79**

Table 13: **Autumn cauliflower pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides							
Azoxystrobin/difenoconazole	3.04	.	.	.	3.04	3.04	0.99
Boscalid/pyraclostrobin	3.04	.	.	.	3.04	3.04	1.01
Chlorothalonil/metalaxyl-M	3.04	.	.	.	3.04	3.04	3.26
Difenoconazole	3.04	.	.	.	3.04	3.04	0.23
Prothioconazole	3.04	.	.	.	3.04	3.04	0.58
All fungicides	**15.18**	**.**	**.**	**.**	**15.18**	**.**	**6.07**
Herbicides & desiccants							
Glyphosate	.	.	.	3.04	3.04	3.04	4.37
Metazachlor	.	.	3.04	.	3.04	3.04	2.28
All herbicides	**.**	**.**	**3.04**	**3.04**	**6.07**	**.**	**6.65**
Insecticides							
Lambda-cyhalothrin	.	3.04	.	.	3.04	3.04	<0.05
Pirimicarb	.	3.04	.	.	3.04	3.04	0.64
Spirotetramat	.	3.04	.	.	3.04	3.04	0.23
All insecticides	**.**	**9.11**	**.**	**.**	**9.11**	**.**	**0.90**

Table 14: **Beetroot pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment										
Pesticide group and active substance	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Pre-emergence weed control**	**Rust and Mildew**	**Sealer**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides											
Cyproconazole/trifloxystrobin	3.37	.	.	.	.	.	.	.	3.37	3.37	0.63
Fenpropimorph	.	.	.	.	.	3.37	.	.	3.37	3.37	2.53
All fungicides	**3.37**	**.**	**.**	**.**	**.**	**3.37**	**.**	**.**	**6.74**	**.**	**3.16**
Herbicides & desiccants											
Diquat	.	.	2.02	.	.	.	.	.	2.02	2.02	0.61
Ethofumesate	.	.	3.37	.	.	.	.	.	3.37	3.37	3.37
Glyphosate	.	.	.	1.55	.	.	.	.	1.55	1.55	2.05
Lenacil	.	.	4.83	.	2.02	.	.	.	6.85	6.85	4.49
Metamitron	.	.	6.74	.	.	.	0.34	.	7.08	7.08	12.35
Metazachlor	.	.	0.78	.	.	.	.	.	0.78	0.78	0.59
Phenmedipham	.	.	5.77	.	.	.	.	.	5.77	5.77	1.66
Triflusulfuron-methyl	.	.	3.37	.	.	.	.	.	3.37	3.37	0.05
All herbicides	**.**	**.**	**26.89**	**1.55**	**2.02**	**.**	**0.34**	**.**	**30.80**	**.**	**25.16**
Insecticides											
Lambda-cyhalothrin	.	0.78	.	.	.	.	.	.	0.78	0.78	<0.1
All insecticides	**.**	**0.78**	**.**	**.**	**.**	**.**	**.**	**.**	**0.78**	**.**	**<0.1**
Seed treatments											
Cymoxanil/fludioxonil/metalaxyl-M	.	.	.	.	.	.	.	11.74	11.74	11.74	<0.1
All seed treatments	**.**	**.**	**.**	**.**	**.**	**.**	**.**	**11.74**	**11.74**	**.**	**<0.1**

Table 15: **Broad beans pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment							
Pesticide group and active substance	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides								
Azoxystrobin	2.43	.	.	.	.	2.43	2.43	0.61
Boscalid/pyraclostrobin	2.43	.	.	.	.	2.43	2.43	0.81
Tebuconazole	2.43	.	.	.	.	2.43	2.43	0.61
All fungicides	**7.28**	**.**	**.**	**.**	**.**	**7.28**	**.**	**2.02**
Herbicides & desiccants								
Glyphosate	.	.	.	2.43	.	2.43	2.43	3.50
Imazamox/pendimethalin	.	.	2.43	.	.	2.43	2.43	2.59
All herbicides	**.**	**.**	**2.43**	**2.43**	**.**	**4.86**	**.**	**6.09**
Insecticides								
Lambda-cyhalothrin	.	2.43	.	.	.	2.43	2.43	<0.05
Pirimicarb	.	2.43	.	.	.	2.43	2.43	0.34
All insecticides	**.**	**4.86**	**.**	**.**	**.**	**4.86**	**.**	**0.35**
Seed treatments								
Thiram	.	.	.	.	2.43	2.43	2.43	0.18
All seed treatments	**.**	**.**	**.**	**.**	**2.43**	**2.43**	**.**	**0.18**

Table 16: **Broccoli pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment										
Pesticide group and active substance	**Aphids**	**Blackspot**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides											
Azoxystrobin	.	.	.	1.92	.	.	.	.	1.92	1.92	0.48
Azoxystrobin/difenoconazole	.	.	.	9.20	.	.	.	.	9.20	9.20	2.99
Boscalid/pyraclostrobin	.	.	.	6.07	.	.	.	.	6.07	6.07	2.03
Chlorothalonil/metalaxyl-M	.	.	.	7.28	.	.	.	.	7.28	7.28	7.83
Difenoconazole	.	1.17	.	11.46	.	.	.	.	12.63	12.63	1.02
Dimethomorph/mancozeb	.	.	.	1.21	.	.	.	.	1.21	1.21	1.80
Prothioconazole	.	.	.	6.07	.	.	.	.	6.07	6.07	1.17
All fungicides	**.**	**1.17**	**.**	**43.22**	**.**	**.**	**.**	**.**	**44.39**	**.**	**17.31**
Herbicides & desiccants											
Clomazone	.	.	.	.	.	14.71	.	.	14.71	8.74	0.61
Glyphosate	.	.	.	.	.	.	6.20	.	6.20	6.20	8.93
Metazachlor	.	.	.	.	.	24.18	.	4.05	28.22	18.21	21.06
All herbicides	**.**	**.**	**.**	**.**	**.**	**38.88**	**6.20**	**4.05**	**49.13**	**.**	**30.59**
Insecticides											
Cypermethrin	.	.	1.56	.	2.43	.	.	.	3.99	2.77	0.10
Deltamethrin	.	.	1.92	.	.	.	.	.	1.92	1.92	<0.05
Indoxacarb	.	.	1.92	.	.	.	.	.	1.92	1.92	<0.05
Lambda-cyhalothrin	1.92	.	12.14	.	7.24	.	.	.	21.30	13.20	0.15
Pirimicarb	12.14	.	.	.	8.45	.	.	.	20.59	12.50	3.28
Spirotetramat	.	.	.	.	6.07	.	.	.	6.07	6.07	0.46
Thiacloprid	1.92	.	.	.	.	.	.	.	1.92	1.92	0.18
All insecticides	**15.98**	**.**	**17.54**	**.**	**24.19**	**.**	**.**	**.**	**57.71**	**.**	**4.24**

Table 17: **Brussels sprouts pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**General Fungal Control**	**General Weed Control**	**Ground Preparation**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides							
Azoxystrobin	37.43	.	.	.	37.43	13.56	9.36
Azoxystrobin/difenoconazole	2.12	.	.	.	2.12	2.12	0.69
Boscalid/pyraclostrobin	2.70	.	.	.	2.70	2.70	0.90
Chlorothalonil/metalaxyl-M	2.12	.	.	.	2.12	2.12	2.28
Difenoconazole	25.24	.	.	.	25.24	22.54	1.89
Dimethomorph/mancozeb	2.12	.	.	.	2.12	2.12	3.15
All fungicides	**71.74**	**.**	**.**	**.**	**71.74**	**.**	**18.28**
Herbicides & desiccants							
Clomazone	.	2.70	.	.	2.70	2.70	0.24
Glyphosate	.	.	14.48	.	14.48	14.48	20.85
Ioxynil	.	3.24	.	.	3.24	3.24	1.31
Metazachlor	.	6.86	.	12.44	19.30	19.30	14.48
Pendimethalin	.	3.24	.	.	3.24	3.24	4.27
Tepraloxydim	.	3.24	.	.	3.24	3.24	0.24
All herbicides	**.**	**19.27**	**14.48**	**12.44**	**46.20**	**.**	**41.40**

Table 17 (contd): **Brussels sprouts pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**Aphids**	**General Insect Control**	**Seed Treatment**	**Slugs**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides							
Cypermethrin	.	6.37	.	.	6.37	2.12	0.16
Lambda-cyhalothrin	.	16.25	.	.	16.25	16.25	0.15
Pirimicarb	20.64	9.07	.	.	29.71	15.14	5.31
Spirotetramat	.	2.70	.	.	2.70	2.70	0.20
Thiacloprid	.	2.70	.	.	2.70	2.70	0.32
All insecticides	**20.64**	**37.10**	**.**	**.**	**57.74**	**.**	**6.14**
Molluscicides							
Metaldehyde	.	.	.	3.24	3.24	3.24	0.97
All molluscicides	**.**	**.**	**.**	**3.24**	**3.24**	**.**	**0.97**
Seed treatments							
Iprodione	.	.	3.24	.	3.24	3.24	<0.1
Thiram	.	.	3.24	.	3.24	3.24	<0.1
All seed treatments	**.**	**.**	**6.48**	**.**	**6.48**	**.**	**<0.1**

Table 18: **Spring cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Weed Control**	**Ringspot**	**Sealer**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides									
Difenoconazole	.	.	.	6.74	.	.	6.74	6.74	0.51
All fungicides	**.**	**.**	**.**	**6.74**	**.**	**.**	**6.74**	**.**	**0.51**
Herbicides & desiccants									
Clomazone	.	.	1.20	.	6.75	.	7.95	7.95	0.37
Metazachlor	.	.	4.32	.	6.74	.	11.07	11.07	6.61
All herbicides	**.**	**.**	**5.52**	**.**	**13.49**	**.**	**19.01**	**.**	**6.98**
Insecticides									
Cypermethrin	.	3.12	.	.	.	.	3.12	3.12	0.08
Pirimicarb	6.74	.	.	.	.	.	6.74	6.74	0.84
All insecticides	**6.74**	**3.12**	**.**	**.**	**.**	**.**	**9.87**	**.**	**0.92**
Seed treatments									
Iprodione	.	.	.	.	.	6.74	6.74	6.74	<0.10
Thiram	.	.	.	.	.	6.74	6.74	6.74	<0.10
All seed treatments	**.**	**.**	**.**	**.**	**.**	**13.49**	**13.49**	**.**	**<0.10**

Table 19: **Summer cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment				
Pesticide group and active substance	**Aphids**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Herbicides & desiccants					
Metazachlor	.	1.35	1.35	1.35	0.67
All herbicides	**.**	**1.35**	**1.35**	**.**	**0.67**
Insecticides					
Pirimicarb	1.35	.	1.35	1.35	0.17
All insecticides	**1.35**	**.**	**1.35**	**.**	**0.17**

Note: No fungicides were recorded as used on summer cabbage crops in 2015.

Table 20: **Winter cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment					
Pesticide group and active substance	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides						
Boscalid/pyraclostrobin	5.40	.	.	5.40	5.40	1.80
Difenoconazole	10.79	.	.	10.79	5.40	0.81
All fungicides	**16.19**	**.**	**.**	**16.19**	**.**	**2.61**
Herbicides & desiccants						
Clomazone	.	.	5.40	5.40	5.40	0.49
Metazachlor	.	.	5.40	5.40	5.40	4.05
All herbicides	**.**	**.**	**10.79**	**10.79**	**.**	**4.53**
Insecticides						
Lambda-cyhalothrin	.	5.40	.	5.40	5.40	<0.10
Pirimicarb	.	5.40	.	5.40	5.40	0.67
Spirotetramat	.	5.40	.	5.40	5.40	0.40
Thiacloprid	.	5.40	.	5.40	5.40	0.65
All insecticides	**.**	**21.58**	**.**	**21.58**	**.**	**1.75**

Table 21: **Calabrese pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment							
Pesticide group and active substance	**Aphids**	**Caterpillars**	**Downy Mildew**	**General Weed Control**	**Leaf spot**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides								
Difenoconazole	.	.	.	.	4.50	4.50	4.50	0.34
Tebuconazole/trifloxystrobin	.	.	2.58	.	.	2.58	2.58	0.70
All fungicides	**.**	**.**	**2.58**	**.**	**4.50**	**7.08**	**.**	**1.03**
Herbicides & desiccants								
Metazachlor	.	.	.	16.65	.	16.65	16.65	12.49
All herbicides	**.**	**.**	**.**	**16.65**	**.**	**16.65**	**.**	**12.49**
Insecticides								
Cypermethrin	.	17.24	.	.	.	17.24	17.24	0.43
Pirimicarb	17.24	.	.	.	.	17.24	17.24	3.62
All insecticides	**17.24**	**17.24**	**.**	**.**	**.**	**34.47**	**.**	**4.05**

Table 22: **Carrots pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment											
Pesticide group and active substance	**Cavity Spot**	**Downy Mildew**	**General Fungal Control**	**General Weed Control**	**Grass**	**Ground Preparation**	**Mildew**	**Pre-emergence weed control**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides												
Azoxystrobin	.	.	30.35	.	.	.	.	.	.	30.35	21.25	7.59
Azoxystrobin/difenoconazole	.	.	246.16	.	.	.	.	.	.	246.16	132.18	80.00
Boscalid/pyraclostrobin	.	68.53	104.71	.	.	.	.	.	.	173.24	173.24	57.86
Fenpropimorph	.	.	18.21	.	.	.	8.09	.	.	26.30	17.20	19.73
Metalaxyl-M	75.25	.	105.39	.	.	.	.	.	.	180.63	180.63	100.40
Prothioconazole	.	.	183.86	.	.	.	.	.	.	183.86	133.60	35.30
Tebuconazole	.	.	102.20	.	.	.	.	.	.	102.20	91.40	25.00
Tebuconazole/trifloxystrobin	.	.	122.07	.	.	.	.	.	.	122.07	122.07	31.52
All fungicides	**75.25**	**68.53**	**912.94**	**.**	**.**	**.**	**8.09**	**.**	**.**	**1064.82**	**.**	**357.40**
Herbicides & desiccants												
Clomazone	.	.	.	153.49	.	.	.	50.26	.	203.75	203.75	13.78
Diquat	.	.	.	.	.	8.32	.	.	.	8.32	8.32	6.66
Glyphosate	.	.	.	.	.	43.77	.	.	.	43.77	43.77	49.31
Linuron	.	.	.	530.91	.	.	.	62.40	46.00	639.32	312.34	161.17
Metribuzin	.	.	.	240.44	.	.	.	.	.	240.44	240.44	46.39
Pendimethalin	.	.	.	180.81	.	.	.	62.40	44.33	287.54	287.54	339.19
Propaquizafop	.	.	.	57.01	.	.	.	.	.	57.01	57.01	6.71
Prosulfocarb	.	.	.	152.49	.	.	.	.	.	152.49	146.49	259.79
Tepraloxydim	.	.	.	39.69	8.09	.	.	.	.	47.78	47.78	3.53
All herbicides	**.**	**.**	**.**	**1354.83**	**8.09**	**52.10**	**.**	**175.06**	**90.33**	**1680.42**	**.**	**886.54**

Table 22 (contd): **Carrots pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**Aphids**	**Aphids and Carrot Fly**	**Carrot Fly**	**General Insect Control**	**Nematodes**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides									
Deltamethrin	.	.	54.00	110.23	.	.	164.23	113.97	1.23
Garlic Extract	.	.	.	.	21.25	.	21.25	21.25	143.41
Lambda-cyhalothrin	54.00	8.09	271.06	544.81	.	.	877.97	312.34	8.41
Oxamyl	.	.	.	.	38.28	.	38.28	38.28	36.04
Pirimicarb	93.24	.	.	30.62	.	.	123.86	115.54	13.53
Thiacloprid	64.49	.	.	176.22	.	.	240.71	190.45	23.08
All insecticides	**211.74**	**8.09**	**325.06**	**861.88**	**59.52**	**.**	**1466.30**	**.**	**225.71**
Seed treatments									
Cymoxanil/fludioxonil/metalaxyl-M	.	.	.	.	.	312.34	312.34	312.34	0.46
Tefluthrin	.	.	.	.	.	54.00	54.00	54.00	4.00
All seed treatments	**.**	**.**	**.**	**.**	**.**	**366.34**	**366.34**	**.**	**4.46**

Table 23: **Cauliflowers pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment											
Pesticide group and active substance	**Aphids**	**Blackspot**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides											
Azoxystrobin	.	.	.	11.47	.	.	.	.	11.47	8.13	2.87
Azoxystrobin/difenoconazole	.	.	.	8.41	.	.	.	.	8.41	6.01	2.73
Boscalid/pyraclostrobin	.	.	.	4.80	.	.	.	.	4.80	4.80	1.60
Chlorothalonil/metalaxyl-M	.	.	.	1.21	.	.	.	.	1.21	1.21	1.31
Difenoconazole	.	1.17	.	8.14	.	.	.	.	9.31	5.97	0.61
Dimethomorph/mancozeb	.	.	.	1.21	.	.	.	.	1.21	1.21	1.80
Tebuconazole/trifloxystrobin	.	.	.	2.40	.	.	.	.	2.40	2.40	0.72
All fungicides	**.**	**1.17**	**.**	**37.65**	**.**	**.**	**.**	**.**	**38.82**	**.**	**11.65**
Herbicides & desiccants											
Clomazone	.	.	.	.	.	11.41	.	3.33	14.75	9.95	0.97
Glyphosate	.	.	.	.	.	.	0.26	.	0.26	0.26	0.37
Metazachlor	.	.	.	.	.	12.17	.	4.55	16.71	11.91	12.37
All herbicides	**.**	**.**	**.**	**.**	**.**	**23.58**	**0.26**	**7.88**	**31.72**	**.**	**13.71**
Insecticides											
Cypermethrin	.	.	.	1.21	1.21	.	.	.	2.43	1.21	0.06
Deltamethrin	4.80	.	2.40	.	.	.	.	.	7.20	4.80	0.05
Indoxacarb	.	.	4.80	.	.	.	.	.	4.80	4.80	0.12
Lambda-cyhalothrin	10.53	.	4.80	.	1.17	.	.	.	16.50	9.30	0.12
Pirimicarb	.	.	3.33	.	2.38	.	.	.	5.71	5.71	1.07
Pymetrozine	2.40	.	4.80	.	.	.	.	.	7.20	4.80	1.44
Thiacloprid	4.80	.	2.40	.	.	.	.	.	7.20	4.80	0.69
All insecticides	**22.53**	**.**	**22.53**	**1.21**	**4.76**	**.**	**.**	**.**	**51.04**	**.**	**3.55**

Table 24: **Hard cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment									
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides										
Azoxystrobin	.	.	6.67	.	.	.	.	6.67	3.33	1.67
Difenoconazole	.	.	6.67	.	.	.	.	6.67	3.33	0.42
All fungicides	**.**	**.**	**13.33**	**.**	**.**	**.**	**.**	**13.33**	**.**	**2.08**
Herbicides & desiccants										
Clomazone	.	.	.	.	.	.	3.33	3.33	3.33	0.18
Glyphosate	.	.	.	.	.	1.67	.	1.67	1.67	0.75
Linuron	.	.	.	.	1.67	.	.	1.67	1.67	0.75
Metazachlor	.	.	.	.	.	.	3.33	3.33	3.33	2.33
Pendimethalin	.	.	.	.	1.67	.	.	1.67	1.67	1.38
All herbicides	**.**	**.**	**.**	**.**	**3.33**	**1.67**	**6.67**	**11.67**	**.**	**5.39**
Insecticides										
Chlorpyrifos	.	.	.	1.67	.	.	.	1.67	1.67	0.56
Lambda-cyhalothrin	3.33	.	.	1.67	.	.	.	5.00	5.00	<0.10
Pirimicarb	.	3.33	.	.	.	.	.	3.33	3.33	0.70
All insecticides	**3.33**	**3.33**	**.**	**3.33**	**.**	**.**	**.**	**10.00**	**.**	**1.30**

Table 25: **Kale pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment			
Pesticide group and active substance	**General Weed Control**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Herbicides & desiccants				
Clomazone	4.73	4.73	4.73	0.26
Metazachlor	2.40	2.40	2.40	1.80
All herbicides	**7.13**	**7.13**	**.**	**2.06**

Note: No fungicides were recorded as used on kale crops in 2015.

Table 26: **Leeks pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**General Disease Control**	**General Fungal Control**	**General Weed Control**	**Rust**	**Sealer**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides									
Azoxystrobin	12.49	.	.	6.67	.	.	19.15	9.58	4.79
Dimethomorph/mancozeb	6.24	.	.	.	.	.	6.24	6.24	9.27
Prothioconazole	.	29.14	.	6.67	.	.	35.80	32.47	6.87
All fungicides	**18.73**	**29.14**	**.**	**13.33**	**.**	**.**	**61.20**	**.**	**20.93**
Herbicides & desiccants									
Chloridazon	.	.	34.78	.	.	.	34.78	34.78	15.82
Chlorpropham	.	.	29.14	.	.	.	29.14	29.14	11.65
Dimethenamid-P/pendimethalin	.	.	.	.	1.67	.	1.67	1.67	1.93
Ioxynil	.	.	48.62	.	.	.	48.62	38.11	3.48
Metazachlor	.	.	41.62	.	3.33	.	44.96	38.71	21.90
Pendimethalin	.	.	36.94	.	.	.	36.94	34.78	12.58
Prosulfocarb	.	.	48.62	.	.	.	48.62	38.11	38.16
Tepraloxydim	.	.	29.14	.	.	.	29.14	29.14	2.19
All herbicides	**.**	**.**	**268.85**	**.**	**5.00**	**.**	**273.85**	**.**	**107.71**
Seed treatments									
Thiram	.	.	.	.	.	17.21	17.21	17.21	<0.10
All seed treatments	**.**	**.**	**.**	**.**	**.**	**17.21**	**17.21**	**.**	**<0.10**

Table 27: **Lettuce pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

Pesticide group and active substance	*Botrytis*	General Fungal Control	General Weed Control	Ground Preparation	Downy mildew	Sclerotinia	Sealer	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)
Fungicides										
Azoxystrobin	.	15.18	.	.	.	97.12	.	112.30	39.46	15.93
Cyprodinil/fludioxonil	72.84	.	.	.	.	.	.	72.84	24.28	13.66
Dimethomorph/mancozeb	.	.	.	.	24.28	.	.	24.28	24.28	36.03
Fenhexamid	48.56	.	.	.	.	.	.	48.56	24.28	17.00
Mandipropamid	.	.	.	.	48.56	.	.	48.56	24.28	6.07
All fungicides	**121.40**	**15.18**	**.**	**.**	**72.84**	**97.12**	**.**	**306.54**	**.**	**88.69**
Herbicides & desiccants										
Dimethenamid-P/pendimethalin	.	.	24.28	.	.	.	.	24.28	24.28	14.04
Glyphosate	.	.	.	15.18	.	.	.	15.18	15.18	21.85
Pendimethalin	.	.	24.28	.	.	.	.	24.28	24.28	27.62
Propyzamide	.	.	24.28	.	.	.	15.18	39.46	39.46	55.24
All herbicides	**.**	**.**	**72.84**	**15.18**	**.**	**.**	**15.18**	**103.19**	**.**	**118.75**

Table 27 (contd): **Lettuce pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment							
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**Slugs**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides								
Deltamethrin	.	24.28	.	.	.	24.28	24.28	0.12
Lambda-cyhalothrin	.	.	.	30.35	.	30.35	15.18	0.23
Pirimicarb	30.35	.	.	.	.	30.35	15.18	7.59
Pymetrozine	24.28	.	.	.	.	24.28	24.28	3.64
Spirotetramat	24.28	.	.	.	.	24.28	24.28	1.82
All insecticides	**78.91**	**24.28**	**.**	**30.35**	**.**	**133.54**	**.**	**13.40**
Molluscicides								
Ferric phosphate	.	.	.	.	24.28	24.28	24.28	1.70
All molluscicides	**.**	**.**	**.**	**.**	**24.28**	**24.28**	**.**	**1.70**

Table 28: **Parsley pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**Blackspot**	**General Fungal Control**	**General Weed Control**	**Ground Preparation**	**Pre-emergence weed control**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides									
Azoxystrobin	5.20	19.82	.	.	.	.	25.02	19.09	6.26
Difenoconazole	7.81	12.14	.	.	.	.	19.95	14.74	1.50
Mancozeb/metalaxyl-M	.	12.14	.	.	.	.	12.14	12.14	7.42
All fungicides	**13.01**	**44.10**	**.**	**.**	**.**	**.**	**57.11**	**.**	**15.17**
Herbicides & desiccants									
Diquat	.	.	1.01	0.52	.	.	1.53	1.53	0.82
Glyphosate	.	.	.	14.82	.	.	14.82	14.82	12.37
Linuron	.	.	26.76	.	2.68	15.11	44.54	29.57	17.23
Pendimethalin	.	.	8.30	.	2.68	13.81	24.78	24.78	20.17
Prosulfocarb	.	.	13.15	.	.	1.30	14.45	14.45	22.09
Tepraloxydim	.	.	7.80	.	.	.	7.80	7.80	0.59
All herbicides	**.**	**.**	**57.02**	**15.34**	**5.36**	**30.22**	**107.93**	**.**	**73.26**

Table 28 (contd): **Parsley pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment							
Pesticide group and active substance	**Aphids**	**Carrot Fly**	**General Insect Control**	**Nematodes**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides								
Lambda-cyhalothrin	.	8.33	0.52	.	.	8.85	5.52	0.12
Oxamyl	.	.	.	1.67	.	1.67	1.67	2.08
Pirimicarb	4.65	.	.	.	.	4.65	4.13	0.47
All insecticides	**4.65**	**8.33**	**0.52**	**1.67**	**.**	**15.17**	**.**	**2.67**
Seed treatments								
Metalaxyl-M	.	.	.	.	26.60	26.60	26.60	<0.10
All seed treatments	**.**	**.**	**.**	**.**	**26.60**	**26.60**	**.**	**<0.10**

Table 29: **Parsnips pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment											
Pesticide group and active substance	**Canker**	**Cavity Spot**	**General Fungal Control**	**General Weed Control**	**Grass**	**Ground Preparation**	**Mildew**	**Pre-emergence weed control**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides												
Azoxystrobin	.	.	72.84	.	.	.	.	.	.	72.84	36.42	18.21
Azoxystrobin/difenoconazole	.	.	120.88	.	.	.	.	.	.	120.88	66.88	39.29
Boscalid/pyraclostrobin	.	.	54.00	.	.	.	.	.	.	54.00	54.00	18.04
Cyprodinil/fludioxonil	.	.	54.00	.	.	.	.	.	.	54.00	54.00	27.00
Fenpropimorph	.	.	72.84	.	.	.	7.42	.	.	80.26	43.84	60.20
Mancozeb	.	.	54.00	.	.	.	.	.	.	54.00	54.00	81.00
Metalaxyl-M	.	54.00	.	.	.	.	.	.	.	54.00	54.00	25.12
Prothioconazole	.	.	12.88	.	.	.	.	.	.	12.88	12.88	2.47
Tebuconazole	9.11	.	42.90	.	.	.	.	.	.	52.00	45.93	13.00
Tebuconazole/trifloxystrobin	.	.	7.42	.	.	.	.	.	.	7.42	7.42	1.67
All fungicides	**9.11**	**54.00**	**491.77**	**.**	**.**	**.**	**7.42**	**.**	**.**	**562.29**	**.**	**285.99**
Herbicides & desiccants												
Diquat	.	.	.	.	.	1.56	.	6.74	.	8.31	8.31	3.95
Glyphosate	.	.	.	.	.	40.47	.	.	.	40.47	40.47	56.94
Linuron	.	.	.	283.64	.	.	.	11.60	1.67	296.91	163.53	88.15
Metamitron	.	.	.	54.00	.	.	.	.	.	54.00	54.00	75.60
Metribuzin	.	.	.	1.01	.	.	.	.	.	1.01	1.01	0.07
Pendimethalin	.	.	.	169.30	.	.	.	11.60	.	180.91	126.91	201.29
Prosulfocarb	.	.	.	91.81	.	.	.	.	.	91.81	83.84	161.47
Tepraloxydim	.	.	.	1.56	62.43	.	.	.	.	63.99	63.99	4.80
All herbicides	**.**	**.**	**.**	**601.33**	**62.43**	**42.03**	**.**	**29.95**	**1.67**	**737.41**	**.**	**592.28**

Table 29 (contd): **Parsnips pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment									
Pesticide group and active substance	**Aphids**	**Aphids and Carrot Fly**	**Canker**	**Carrot Fly**	**General Insect Control**	**Nematodes**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides										
Deltamethrin	.	.	.	54.00	5.46	.	.	59.46	59.46	0.45
Garlic Extract	.	.	.	.	.	1.82	.	1.82	1.82	12.29
Lambda-cyhalothrin	60.74	7.42	.	271.26	29.42	.	.	368.85	116.11	4.16
Oxamyl	.	.	.	.	.	43.84	.	43.84	43.84	37.62
Pirimicarb	104.00	.	.	.	5.46	.	.	109.46	107.90	9.89
Thiacloprid	61.42	.	.	.	.	.	.	61.42	61.42	5.90
All insecticides	**226.16**	**7.42**	**.**	**325.26**	**40.35**	**45.66**	**.**	**644.86**	**.**	**70.30**
Seed treatments										
Cymoxanil/fludioxonil/metalaxyl-M	.	.	.	.	.	.	163.53	163.53	163.53	0.10
Tefluthrin	.	.	.	.	.	.	54.00	54.00	54.00	0.80
All seed treatments	**.**	**.**	**.**	**.**	**.**	**.**	**217.53**	**217.53**	**.**	**0.90**

Table 30: **Peas pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment							
Pesticide group and active substance	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides								
Azoxystrobin	2.43	.	.	.	.	2.43	2.43	0.61
Boscalid/pyraclostrobin	2.43	.	.	.	.	2.43	2.43	0.81
Tebuconazole	2.43	.	.	.	.	2.43	2.43	0.61
All fungicides	**7.28**	**.**	**.**	**.**	**.**	**7.28**	**.**	**2.02**
Herbicides & desiccants								
Glyphosate	.	.	.	2.43	.	2.43	2.43	3.50
Imazamox/pendimethalin	.	.	2.43	.	.	2.43	2.43	2.59
All herbicides	**.**	**.**	**2.43**	**2.43**	**.**	**4.86**	**.**	**6.09**
Insecticides								
Lambda-cyhalothrin	.	2.43	.	.	.	2.43	2.43	<0.05
Pirimicarb	.	2.43	.	.	.	2.43	2.43	0.34
All insecticides	**.**	**4.86**	**.**	**.**	**.**	**4.86**	**.**	**0.35**
Seed treatments								
Thiram	.	.	.	.	2.43	2.43	2.43	0.14
All seed treatments	**.**	**.**	**.**	**.**	**2.43**	**2.43**	**.**	**0.14**

Table 31: **Pointed cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides									
Azoxystrobin	.	.	5.64	.	.	.	5.64	5.64	1.41
Azoxystrobin/difenoconazole	.	.	11.71	.	.	.	11.71	11.71	3.81
Chlorothalonil/metalaxyl-M	.	.	6.07	.	.	.	6.07	6.07	6.53
Difenoconazole	.	.	6.07	.	.	.	6.07	6.07	0.46
Dimethomorph/mancozeb	.	.	6.07	.	.	.	6.07	6.07	9.01
All fungicides	**.**	**.**	**35.56**	**.**	**.**	**.**	**35.56**	**.**	**21.20**
Herbicides & desiccants									
Clomazone	.	.	.	.	11.28	.	11.28	5.64	0.81
Metazachlor	.	.	.	.	12.08	6.07	18.15	12.51	13.61
All herbicides	**.**	**.**	**.**	**.**	**23.36**	**6.07**	**29.43**	**.**	**14.42**
Insecticides									
Cypermethrin	.	.	.	12.14	.	.	12.14	6.07	0.30
Deltamethrin	2.76	2.88	.	.	.	.	5.64	5.64	<0.05
Indoxacarb	.	5.64	.	.	.	.	5.64	5.64	0.14
Lambda-cyhalothrin	2.88	.	.	.	.	.	2.88	2.88	<0.05
Pirimicarb	.	.	.	6.07	.	.	6.07	6.07	0.61
Thiacloprid	5.64	2.76	.	.	.	.	8.40	5.64	0.81
All insecticides	**11.28**	**11.28**	**.**	**18.21**	**.**	**.**	**40.77**	**.**	**1.93**

Table 32: **Pumpkin pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment					
Pesticide group and active substance	**General Insect Control**	**Ground Preparation**	**Powdery mildew**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides						
Boscalid/pyraclostrobin	.	.	8.00	8.00	4.00	4.01
All fungicides	**.**	**.**	**8.00**	**8.00**	**.**	**4.01**
Herbicides & desiccants						
Glyphosate	.	4.00	.	4.00	4.00	5.76
All herbicides	**.**	**4.00**	**.**	**4.00**	**.**	**5.76**
Insecticides						
Spinosad	4.00	.	.	4.00	4.00	0.38
All insecticides	**4.00**	**.**	**.**	**4.00**	**.**	**0.38**

Table 33: **Purple broccoli pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment			
Pesticide group and active substance	**General Weed Control**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Herbicides & desiccants				
Clomazone	1.46	1.46	1.46	0.10
Metazachlor	1.46	1.46	1.46	1.09
All herbicides	**2.91**	**2.91**	**.**	**1.20**

Note: No fungicides were recorded as used on purple broccoli crops in 2015.

Table 34: **Red cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ringspot**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides									
Azoxystrobin	.	.	3.60	.	.	.	3.60	3.60	0.90
Azoxystrobin/difenoconazole	.	.	3.60	.	.	.	3.60	3.60	1.17
Boscalid/pyraclostrobin	.	.	3.60	.	.	.	3.60	3.60	1.20
Difenoconazole	.	.	.	.	.	4.20	4.20	4.20	0.32
Tebuconazole/trifloxystrobin	.	.	1.80	.	.	.	1.80	1.80	0.54
All fungicides	**.**	**.**	**12.60**	**.**	**.**	**4.20**	**16.80**	**.**	**4.13**
Herbicides & desiccants									
Clomazone	.	.	.	.	12.66	.	12.66	9.06	0.81
Metazachlor	.	.	.	.	11.99	.	11.99	8.39	8.99
All herbicides	**.**	**.**	**.**	**.**	**24.65**	**.**	**24.65**	**.**	**9.80**
Insecticides									
Deltamethrin	1.80	1.80	.	.	.	.	3.60	3.60	<0.10
Indoxacarb	.	5.40	.	.	.	.	5.40	3.60	0.14
Lambda-cyhalothrin	5.40	.	.	4.20	.	.	9.60	7.80	0.08
Pirimicarb	4.20	.	.	.	.	.	4.20	4.20	0.53
Pymetrozine	.	3.60	.	.	.	.	3.60	3.60	0.72
Thiacloprid	5.40	1.80	.	.	.	.	7.20	3.60	0.69
All insecticides	**16.80**	**12.60**	**.**	**4.20**	**.**	**.**	**33.60**	**.**	**2.18**

Table 35: **Salad onions pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**General Fungal Control**	**General Weed Control**	**Ground Preparation**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides							
Azoxystrobin	5.66	.	.	.	5.66	5.26	1.42
Azoxystrobin/chlorothalonil	4.86	.	.	.	4.86	4.86	5.83
Dimethomorph/mancozeb	4.86	.	.	.	4.86	4.86	7.21
All fungicides	**15.38**	**.**	**.**	**.**	**15.38**	**.**	**14.45**
Herbicides & desiccants							
Chloridazon	.	4.86	.	.	4.86	4.86	4.42
Glyphosate	.	.	4.86	.	4.86	4.86	6.99
Ioxynil	.	7.32	.	.	7.32	7.32	1.20
Pendimethalin	.	5.26	.	.	5.26	5.26	4.07
Tepraloxydim	.	0.40	.	.	0.40	0.40	<0.10
All herbicides	**.**	**17.84**	**4.86**	**.**	**22.70**	**.**	**16.71**
Seed treatments							
Thiram	.	.	.	7.26	7.26	7.26	0.18
Unknown seed	.	.	.	0.06	0.06	0.06	.
All seed treatments	**.**	**.**	**.**	**7.32**	**7.32**	**.**	**0.18**

Table 36: **Savoy cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment										
Pesticide group and active substance	**Blackspot**	**General Fungal Control**	**General Weed Control**	**Ground Preparation**	**Leaf Disease**	**Leaf spot**	**Ringspot**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides											
Azoxystrobin	.	10.27	.	.	.	.	.	.	10.27	6.93	2.57
Azoxystrobin/difenoconazole	.	14.53	.	.	.	.	.	.	14.53	14.53	4.72
Boscalid/pyraclostrobin	.	14.16	.	.	.	.	.	.	14.16	14.16	4.73
Chlorothalonil/metalaxyl-M	.	10.93	.	.	.	.	.	.	10.93	10.93	11.75
Difenoconazole	1.17	42.11	.	.	2.40	25.20	14.95	.	85.82	56.56	6.35
Dimethomorph/mancozeb	.	4.86	.	.	.	.	.	.	4.86	4.86	7.21
Prothioconazole	.	6.07	.	.	.	.	.	.	6.07	6.07	1.17
All fungicides	**1.17**	**102.92**	**.**	**.**	**2.40**	**25.20**	**14.95**	**.**	**146.63**	**.**	**38.49**
Herbicides & desiccants											
Clomazone	.	.	31.22	.	.	.	.	3.33	34.55	30.95	2.28
Glyphosate	.	.	.	8.46	.	.	.	.	8.46	8.46	11.44
Metazachlor	.	.	51.10	.	.	.	.	15.78	66.88	63.28	49.99
All herbicides	**.**	**.**	**82.31**	**8.46**	**.**	**.**	**.**	**19.12**	**109.89**	**.**	**63.71**

Table 36 (contd): **Savoy cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment					
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Insect Control**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides						
Cypermethrin	.	27.60	9.71	37.31	15.66	0.93
Deltamethrin	.	10.64	.	10.64	10.64	0.08
Indoxacarb	.	3.60	.	3.60	3.60	0.09
Lambda-cyhalothrin	6.93	.	30.28	37.22	37.22	0.33
Pirimicarb	42.55	3.33	20.19	66.07	49.27	11.29
Spirotetramat	.	.	14.16	14.16	14.16	1.06
Thiacloprid	3.60	.	8.09	11.69	11.69	1.32
All insecticides	**53.09**	**45.18**	**82.44**	**180.70**	**.**	**15.10**

Table 37: **Summer scallions pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment							
Pesticide group and active substance	**General Weed Control**	**Ground Preparation**	**Pre-emergence weed control**	**Seed Treatment**	**White Tip**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides								
Chlorothalonil/metalaxyl-M	.	.	.	.	1.35	1.35	1.35	1.45
All fungicides	**.**	**.**	**.**	**.**	**1.35**	**1.35**	**.**	**1.45**
Herbicides & desiccants								
Chloridazon	15.05	.	.	.	.	15.05	15.05	6.85
Chlorpropham	15.05	.	.	.	.	15.05	15.05	6.02
Dimethenamid-P/pendimethalin	15.05	.	1.35	.	.	16.40	16.40	10.85
Glyphosate	.	1.35	.	.	.	1.35	1.35	1.20
Ioxynil	19.10	.	.	.	.	19.10	16.40	1.93
Pendimethalin	16.40	.	.	.	.	16.40	16.40	6.57
All herbicides	**80.67**	**1.35**	**1.35**	**.**	**.**	**83.36**	**.**	**33.42**
Seed treatments								
Thiram	.	.	.	1.35	.	1.35	1.35	<0.10
All seed treatments	**.**	**.**	**.**	**1.35**	**.**	**1.35**	**.**	**<0.10**

Table 38: **Soup celery pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment									
Pesticide group and active substance	**Blackspot**	**General Fungal Control**	**General Weed Control**	**Ground Preparation**	**Leaf spot**	**Pre-emergence weed control**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides										
Azoxystrobin	5.20	13.83	.	.	.	.	.	19.03	16.43	4.76
Chlorothalonil	0.26	.	.	.	.	.	.	0.26	0.26	0.26
Difenoconazole	7.80	12.14	.	.	1.69	.	.	21.63	16.43	1.71
Mancozeb/metalaxyl-M	.	12.14	.	.	.	.	.	12.14	12.14	7.42
All fungicides	**13.27**	**38.11**	**.**	**.**	**1.69**	**.**	**.**	**53.06**	**.**	**14.14**
Herbicides & desiccants										
Diquat	.	.	.	0.26	.	.	.	0.26	0.26	0.21
Glyphosate	.	.	.	15.49	.	.	2.60	18.10	18.10	13.98
Linuron	.	.	19.69	.	.	3.35	14.74	37.78	23.70	14.28
Pendimethalin	.	.	5.34	.	.	3.35	12.14	20.84	20.84	18.01
Prosulfocarb	.	.	13.83	.	.	.	.	13.83	13.83	22.12
Tepraloxydim	.	.	5.60	.	.	.	.	5.60	5.60	0.42
All herbicides	**.**	**.**	**44.46**	**15.75**	**.**	**6.71**	**29.49**	**96.40**	**.**	**69.02**

Table 38 (contd): **Soup celery pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**Aphids**	**General Insect Control**	**Nematodes**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides							
Lambda-cyhalothrin	.	0.26	.	.	0.26	0.26	<0.10
Oxamyl	.	.	1.67	.	1.67	1.67	2.08
Pirimicarb	4.81	.	.	.	4.81	4.55	0.49
All insecticides	**4.81**	**0.26**	**1.67**	**.**	**6.73**	**.**	**2.58**
Seed treatments							
Thiram	.	.	.	23.70	23.70	23.70	0.06
All seed treatments	**.**	**.**	**.**	**23.70**	**23.70**	**.**	**0.06**

Table 39: **Soup leeks pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment										
Pesticide group and active substance	**General Fungal Control**	**General Weed Control**	**Ground Preparation**	**Pre-emergence weed control**	**Rust**	**Sealer**	**Seed Treatment**	**White Tip**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides											
Chlorothalonil	2.60	.	.	.	.	.	.	.	2.60	1.30	1.30
Chlorothalonil/metalaxyl-M	.	.	.	.	.	.	.	0.67	0.67	0.67	0.73
Difenoconazole	.	.	.	.	2.70	.	.	.	2.70	1.35	0.20
Prothioconazole	24.28	.	.	.	.	.	.	.	24.28	24.28	4.66
Tebuconazole	24.28	.	.	.	0.67	.	.	.	24.96	24.96	6.24
Tebuconazole/trifloxystrobin	24.28	.	.	.	.	.	.	.	24.28	24.28	7.28
All fungicides	**75.44**	**.**	**.**	**.**	**3.37**	**.**	**.**	**0.67**	**79.49**	**.**	**20.41**
Herbicides & desiccants											
Dimethenamid-P/pendimethalin	.	1.35	.	0.67	.	24.28	.	.	26.30	26.30	22.71
Diquat	.	.	.	1.35	.	.	.	.	1.35	1.35	0.54
Glyphosate	.	.	24.96	.	.	.	.	.	24.96	24.96	22.19
Ioxynil	.	57.14	.	.	.	.	.	.	57.14	27.61	5.95
Linuron	.	1.30	.	.	.	.	.	.	1.30	1.30	0.59
Metazachlor	.	1.30	.	.	.	.	.	.	1.30	1.30	0.98
Pendimethalin	.	0.67	.	.	.	.	.	.	0.67	0.67	0.89
Prosulfocarb	.	48.56	.	.	.	.	.	.	48.56	24.28	77.70
Tepraloxydim	.	24.28	.	.	.	.	.	.	24.28	24.28	1.46
All herbicides	**.**	**134.61**	**24.96**	**2.02**	**.**	**24.28**	**.**	**.**	**185.87**	**.**	**132.99**
Seed treatments											
Thiram	.	.	.	.	.	.	27.08	.	27.08	27.08	<0.10
All seed treatments	**.**	**.**	**.**	**.**	**.**	**.**	**27.08**	**.**	**27.08**	**.**	**<0.10**

Table 40: **Summer cauliflower pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment									
Pesticide group and active substance	**Aphids**	**Caterpillars**	**General Fungal Control**	**General Insect Control**	**General Weed Control**	**Ground Preparation**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides										
Azoxystrobin/difenoconazole	.	.	3.04	.	.	.	.	3.04	3.04	0.99
Boscalid/pyraclostrobin	.	.	3.04	.	.	.	.	3.04	3.04	1.01
Chlorothalonil/metalaxyl-M	.	.	3.04	.	.	.	.	3.04	3.04	3.26
Difenoconazole	.	.	8.43	.	.	.	.	8.43	8.43	0.73
Prothioconazole	.	.	3.04	.	.	.	.	3.04	3.04	0.58
All fungicides	**.**	**.**	**20.57**	**.**	**.**	**.**	**.**	**20.57**	**.**	**6.57**
Herbicides & desiccants										
Clomazone	.	.	.	.	10.79	.	.	10.79	5.40	0.24
Glyphosate	.	.	.	.	.	3.04	.	3.04	3.04	4.37
Metazachlor	.	.	.	.	14.63	.	5.40	20.02	9.23	14.87
All herbicides	**.**	**.**	**.**	**.**	**25.42**	**3.04**	**5.40**	**33.85**	**.**	**19.48**
Insecticides										
Deltamethrin	.	0.80	.	.	.	.	.	0.80	0.80	<0.10
Lambda-cyhalothrin	.	16.19	.	3.04	.	.	.	19.22	8.43	0.11
Pirimicarb	16.19	.	.	3.04	.	.	.	19.22	8.43	2.82
Spirotetramat	.	.	.	3.04	.	.	.	3.04	3.04	0.23
All insecticides	**16.19**	**16.99**	**.**	**9.11**	**.**	**.**	**.**	**42.28**	**.**	**3.17**

Table 41: **Swede pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment						
Pesticide group and active substance	**General Weed Control**	**Ground Preparation**	**Sealer**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Herbicides & desiccants							
Clomazone	46.28	.	23.33	.	69.62	69.62	3.76
Glyphosate	.	30.27	.	.	30.27	30.27	24.77
Metazachlor	36.65	.	23.33	.	59.99	59.99	44.99
All herbicides	**82.94**	**30.27**	**46.67**	**.**	**159.88**	**.**	**73.52**
Seed treatments							
Thiamethoxam	.	.	.	30.27	30.27	30.27	1.55
Thiram	.	.	.	100.93	100.93	100.93	0.15
All seed treatments	**.**	**.**	**.**	**131.20**	**131.20**	**.**	**1.71**

Note: No fungicides were recorded as used on swede crops in 2015.

Table 42: **Table celery pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment									
Pesticide group and active substance	**General Fungal Control**	**General Weed Control**	**Leaf spot**	**Not Stated**	**Pre-emergence weed control**	**Sclerotinia**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides										
Azoxystrobin	15.18	.	.	.	.	3.00	.	18.18	16.68	4.54
Azoxystrobin/difenoconazole	1.21	.	.	.	.	.	.	1.21	0.61	0.39
Chlorothalonil/metalaxyl-M	0.61	.	.	.	.	.	.	0.61	0.61	0.65
Copper oxychloride	.	.	4.50	.	.	.	.	4.50	1.50	4.86
Difenoconazole	15.78	.	.	.	.	.	.	15.78	15.78	1.94
Dimethomorph/mancozeb	0.61	.	.	.	.	.	.	0.61	0.61	0.90
Unknown fungicide	.	.	.	2.43	.	.	.	2.43	2.43	.
All fungicides	**33.39**	**.**	**4.50**	**2.43**	**.**	**3.00**	**.**	**43.31**	**.**	**13.29**
Herbicides & desiccants										
Diquat	.	.	.	.	0.51	.	.	0.51	0.51	0.20
Linuron	.	17.18	.	.	.	.	.	17.18	17.18	10.40
Metazachlor	.	.	.	.	.	.	0.61	0.61	0.61	0.46
Pendimethalin	.	1.50	.	.	.	.	.	1.50	1.50	1.98
Prosulfocarb	.	16.68	.	.	.	.	.	16.68	16.68	41.22
Unknown herbicide	.	.	.	2.43	.	.	.	2.43	2.43	.
All herbicides	**.**	**35.36**	**.**	**2.43**	**0.51**	**.**	**0.61**	**38.90**	**.**	**54.26**

Table 42 (contd): **Table celery pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**Aphids**	**Aphids and Carrot Fly**	**General Insect Control**	**Not Stated**	**Seed Treatment**	**Slugs**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides									
Cypermethrin	.	.	1.21	.	.	.	1.21	0.61	<0.10
Deltamethrin	.	4.50	.	.	.	.	4.50	1.50	<0.10
Garlic Extract	.	.	.	.	.	1.50	1.50	1.50	1.20
Lambda-cyhalothrin	.	.	45.53	.	.	.	45.53	15.18	0.46
Pirimicarb	30.35	.	0.61	.	.	.	30.96	15.78	4.31
Unknown insecticide	.	.	.	2.43	.	.	2.43	2.43	.
All insecticides	**30.35**	**4.50**	**47.35**	**2.43**	**.**	**1.50**	**86.13**	**.**	**6.02**
Seed treatments									
Thiram	.	.	.	.	2.93	.	2.93	2.93	<0.10
All seed treatments	**.**	**.**	**.**	**.**	**2.93**	**.**	**2.93**	**.**	**<0.10**

Table 43: **Table leeks pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment										
Pesticide group and active substance	**General Fungal Control**	**General Weed Control**	**Grass**	**Ground Preparation**	**Pre-emergence weed control**	**Rust**	**Sealer**	**White Tip**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides											
Azoxystrobin	2.43	.	.	.	.	.	.	.	2.43	2.43	0.61
Azoxystrobin/difenoconazole	3.04	.	.	.	.	2.02	.	.	5.06	5.06	1.64
Chlorothalonil/metalaxyl-M	3.04	.	.	.	.	.	.	.	3.04	3.04	3.26
Difenoconazole	3.04	.	.	.	.	.	.	.	3.04	3.04	0.23
Dimethomorph/mancozeb	6.98	.	.	.	.	.	.	2.02	9.00	9.00	13.36
Prothioconazole	2.43	.	.	.	.	2.02	.	.	4.45	4.45	0.85
Tebuconazole/trifloxystrobin	2.43	.	.	.	.	11.62	.	.	14.05	14.05	2.98
All fungicides	**23.37**	**.**	**.**	**.**	**.**	**15.67**	**.**	**2.02**	**41.06**	**.**	**22.94**
Herbicides & desiccants											
Chloridazon	.	3.54	.	.	1.52	.	.	.	5.06	3.54	2.83
Dimethenamid-P/pendimethalin	.	2.43	.	.	.	.	.	.	2.43	2.43	1.97
Fluroxypyr	.	2.02	.	.	.	.	.	.	2.02	2.02	0.12
Glyphosate	.	.	.	12.03	.	.	.	.	12.03	12.03	10.41
Ioxynil	.	24.26	1.52	.	1.52	.	.	.	27.29	16.18	2.92
Metazachlor	.	9.60	.	.	.	.	3.04	.	12.64	12.64	9.48
Pendimethalin	.	2.02	.	.	1.52	.	.	.	3.54	3.54	3.71
Prosulfocarb	.	2.02	.	.	.	.	.	.	2.02	2.02	8.09
Tepraloxydim	.	2.43	1.52	.	.	.	.	.	3.95	3.95	0.30
All herbicides	**.**	**48.33**	**3.04**	**12.03**	**4.55**	**.**	**3.04**	**.**	**70.98**	**.**	**39.82**

Table 43 (contd): **Table leeks pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment					
Pesticide group and active substance	**General Insect Control**	**Nematodes**	**Seed Treatment**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides						
Cypermethrin	6.07	.	.	6.07	3.04	0.15
Garlic Extract	.	1.52	.	1.52	1.52	10.25
Lambda-cyhalothrin	1.52	.	.	1.52	1.52	<0.10
Pirimicarb	3.04	.	.	3.04	3.04	0.30
All insecticides	**10.62**	**1.52**	**.**	**12.14**	**.**	**10.72**
Seed treatments						
Thiram	.	.	1.52	1.52	1.52	<0.10
All seed treatments	**.**	**.**	**1.52**	**1.52**	**.**	**<0.10**

Table 44: **Turnips pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment								
Pesticide group and active substance	**General Disease Control**	**General Weed Control**	**Ground Preparation**	**Mildew**	**Pre-emergence weed control**	**Sealer**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Fungicides									
Prothioconazole	1.67	.	.	.	.	.	1.67	1.67	0.32
Sulphur	.	.	.	1.67	.	.	1.67	1.67	13.33
All fungicides	**1.67**	**.**	**.**	**1.67**	**.**	**.**	**3.33**	**.**	**13.65**
Herbicides & desiccants									
Clomazone	.	50.70	.	.	.	66.25	116.95	116.95	7.27
Clopyralid	.	1.35	.	.	.	.	1.35	1.35	0.27
Glyphosate	.	1.35	55.60	.	.	.	56.94	55.60	83.37
Metazachlor	.	57.98	.	.	1.21	67.92	127.12	127.12	82.98
All herbicides	**.**	**111.38**	**55.60**	**.**	**1.21**	**134.17**	**302.36**	**.**	**173.89**

Table 44 (contd): **Turnips pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.**

	Reasons for treatment									
Pesticide group and active substance	**Flea Beetles**	**General Insect Control**	**Insect deterrence**	**Nematodes**	**Cabbage root fly**	**Seed Treatment**	**Slugs**	**Total treated area (spha)**	**Basic treated area (ha)**	**Quantity applied (kg)**
Insecticides										
Deltamethrin	1.67	.	.	.	.	.	.	1.67	1.67	<0.10
Garlic Extract	.	.	167.54	1.21	1.67	.	.	170.42	23.52	276.01
Lambda-cyhalothrin	.	2.43	.	.	.	.	.	2.43	1.21	<0.10
All insecticides	**1.67**	**2.43**	**167.54**	**1.21**	**1.67**	**.**	**.**	**174.51**	**.**	**276.03**
Molluscicides										
Methiocarb	.	.	.	.	.	.	34.69	34.69	34.69	5.20
All molluscicides	**.**	**.**	**.**	**.**	**.**	**.**	**34.69**	**34.69**	**.**	**5.20**
Seed treatments										
Thiram	.	.	.	.	.	127.12	.	127.12	127.12	0.12
All seed treatments	**.**	**.**	**.**	**.**	**.**	**127.12**	**.**	**127.12**	**.**	**0.12**

Table 45: White cabbage pesticide-treated area (spha), basic treated area (ha), quantity applied (kg) and reasons for use.

	Reasons for treatment										
Pesticide group and active substance	Aphids	Caterpillars	General Fungal Control	General Insect Control	General Weed Control	Leaf Disease	Nematodes	Sealer	Total treated area (spha)	Basic treated area (ha)	Quantity applied (kg)
Fungicides											
Azoxystrobin	.	.	3.60	.	.	.	.	.	3.60	3.60	0.90
Azoxystrobin/difenoconazole	.	.	11.47	.	.	.	.	.	11.47	9.67	3.73
Boscalid/pyraclostrobin	.	.	1.80	.	.	.	.	.	1.80	1.80	0.60
Chlorothalonil/metalaxyl-M	.	.	6.07	.	.	.	.	.	6.07	6.07	6.53
Difenoconazole	.	.	6.07	.	.	12.14	.	.	18.21	12.14	1.37
Dimethomorph/mancozeb	.	.	6.07	.	.	.	.	.	6.07	6.07	9.01
All fungicides	**.**	**.**	**35.08**	**.**	**.**	**12.14**	**.**	**.**	**47.22**	**.**	**22.13**
Herbicides & desiccants											
Clomazone	.	.	.	.	7.20	.	.	.	7.20	3.60	0.52
Metazachlor	.	.	.	.	17.52	.	.	6.07	23.59	19.99	17.69
All herbicides	**.**	**.**	**.**	**.**	**24.72**	**.**	**.**	**6.07**	**30.79**	**.**	**18.21**
Insecticides											
Cypermethrin	.	12.14	.	12.14	.	.	.	.	24.28	12.14	0.61
Deltamethrin	3.60	1.80	.	.	.	.	.	.	5.40	3.60	<0.10
Garlic Extract	.	.	.	.	.	.	4.25	.	4.25	4.25	28.68
Indoxacarb	.	3.60	.	.	.	.	.	.	3.60	3.60	0.09
Lambda-cyhalothrin	3.60	1.80	.	8.50	.	.	.	.	13.90	7.85	0.12
Pirimicarb	12.14	.	.	10.32	.	.	.	.	22.46	16.39	3.57
Pymetrozine	.	1.80	.	.	.	.	.	.	1.80	1.80	0.36
Thiacloprid	3.60	1.80	.	.	.	.	.	.	5.40	3.60	0.52
All insecticides	**22.94**	**22.94**	**.**	**30.96**	**.**	**.**	**4.25**	**.**	**81.09**	**.**	**33.99**

Table 46: **Comparison of the area of vegetable crops grown (hectares) in Northern Ireland and the proportional differences (%) between 1991-2015.**

	Survey year								
Crop type	1991 (ha)	1995 (ha)	1999 (ha)	2004 (ha)	2007 (ha)	2011 (ha)	2013 (ha)	2015 (ha)	% change in area 2013 / 2015
Brassicas									
Brussels sprouts	121.60	85.68	114.50	29.77	43.60	54.87	29.47	23.08	-22%
Cabbage (summer/autumn)	118.60	61.01	120.70	76.63	110.81	69.47	18.49	7.42	-60%
Cabbage (other)*	168.60	202.79	175.30	156.03	241.77	173.01	158.95	126.31	-21%
Calabrese/broccoli	50.60	55.78	60.60	147.54	159.50	96.32	55.43	37.58	-32%
Cauliflower	166.80	228.80	181.40	171.36	188.10	86.17	50.80	24.86	-51%
All leafy brassicas	**626.20**	**634.06**	**652.50**	**581.33**	**743.80**	**479.84**	**313.14**	**219.25**	**-30%**
Turnip and swede									
Turnip and swede	127.60	121.87	121.50	280.76	223.50	253.35	248.46	248.86	0%
All turnip and swede	**127.60**	**121.87**	**121.50**	**280.76**	**223.50**	**253.35**	**248.46**	**248.86**	**0%**
Peas and beans									
Beans	11.80	11.71	9.40	6.60	5.00	2.02	26.23	2.43	-91%
Peas	13.20	6.91	5.50	2.43	2.70	15.75	5.01	2.43	-51%
All peas and beans	**25.00**	**18.62**	**14.90**	**9.03**	**7.70**	**17.78**	**31.24**	**4.86**	**-84%**
Leeks and onions									
Leeks	39.30	63.48	68.10	89.85	109.30	104.19	109.94	91.09	-17%
Onions	6.40	.	14.50	13.28	10.70	17.39	7.84	7.30	-7%
Spring onions	51.90	42.03	58.90	61.75	39.40	28.82	11.79	16.40	39%
All leeks and onions	**97.60**	**105.51**	**141.50**	**164.88**	**159.40**	**150.41**	**129.57**	**114.79**	**-14%**

Table 46 (contd): **Comparison of the area of vegetable crops grown (hectares) in Northern Ireland and the proportional differences (%) between 1991-2015.**

	Survey year								
Crop type	1991 (ha)	1995 (ha)	1999 (ha)	2004 (ha)	2007 (ha)	2011 (ha)	2013 (ha)	2015 (ha)	% change in area 2013 / 2015
Carrots and parsnips									
Carrots	269.90	261.04	360.80	347.78	436.30	353.13	335.39	312.88	-7%
Parsnips	80.90	73.84	109.80	99.61	185.90	166.41	184.10	164.07	-11%
All carrots and parsnips	**350.80**	**334.88**	**470.60**	**447.39**	**622.20**	**519.53**	**519.49**	**476.95**	**-8%**
Celery, lettuce and parsley									
Celery	24.50	27.14	45.50	32.23	57.80	44.09	57.57	43.92	-24%
Lettuce	26.60	38.42	27.00	42.84	24.30	59.35	54.71	39.46	-28%
Parsley	20.10	31.37	40.00	41.85	47.80	33.35	23.78	29.57	24%
All celery, lettuce and parsely	**71.20**	**96.93**	**112.50**	**116.92**	**129.90**	**136.80**	**136.06**	**112.95**	**-17%**
Other vegetables									
Cucurbits	0.14	1.46	1.80	.	1.80	.	.	4.00	100%
Beetroot	3.59	3.13	6.90	3.80	6.70	8.16	12.93	12.28	-5%
Rhubarb	13.73	6.75	6.10	10.78	4.90	.	5.48	4.05	-26%
Kale	.	.	.	.	.	0.87	.	4.73	100%
Celeriac	.	.	.	.	.	0.01	0.08	0.53	569%
All other vegetables	**17.46**	**11.34**	**14.80**	**14.58**	**13.40**	**9.05**	**18.48**	**25.59**	**38%**
Total vegetable crops	**1,315.86**	**1,323.21**	**1,528.30**	**1,614.89**	**1,899.90**	**1,566.75**	**1,396.45**	**1,203.25**	**-14%**

Northern Ireland Pesticide Usage Survey Published Reports Appendix 1

Report No.	Report title	ISBN
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 4
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

Report No.	Report title	ISBN
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
241	Top Fruit Crops 2010	1-848 07 250 3
242	Arable Crops 2010	1-848 07 252 7
245	Mushroom crops 2011	1-84807-308-1
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	1-84807-485-9
259	Vegetable Crops 2013	1-84807-486-6
260	Arable Crops 2014	1-84807-552-8
261	Top Fruit Crops 2014	1-84807-553-5
262	Soft Fruit Crops 2014	1-84807-571-9
267	Edible Protected Crops 2015	1-84807-684-6

ISBN 978-1-84807-685-3

10/16