



Department of
**Agriculture,
Food and the Marine**

An Roinn
**Talmhaíochta,
Bia agus Mara**

Pesticide Usage in Ireland

Soft Fruit Crops Survey Report 2014

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SOFT FRUIT CROPS SURVEY REPORT 2014

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Summary

This is the first survey of pesticide* usage on soft fruit crops in Ireland carried out by DAFM. Information on all aspects of pesticide usage was collected from 26 holdings across Ireland representing 56% of the total area of soft fruit crops grown. Quantitative data have been adjusted to provide estimates of total pesticide usage.

In 2014 an estimated 334 hectares of soft fruit crops were grown and an estimated 944 kgs of active substance was applied. A total of 41 active substances were recorded in use on soft fruit crops in the survey.

Fungicides were applied to 65% of the pesticide-treated area, accounting for 77% of the total weight of pesticides used. Herbicides were applied to 10% of the pesticide-treated area, representing 17% of the total weight of pesticides used. Insecticides were applied to 22% of the pesticide treated area, representing 6% of the weight of pesticides applied. Molluscicide treatments represented <1% of pesticide treated area and less than 1% of the weight of pesticides applied. Biological control usage accounted for 3% of the pesticide-treated area.

Protected strawberries comprised 24% of the area of soft fruit crops in Ireland 2014, accounting for 51% of the total pesticide treated area and 56% of the total weight of pesticides used on all soft fruit crops. Protected strawberries accounted for 53% of the area of soft fruit crops treated with fungicide and received 61% of the total weight of fungicides applied.

Semi-protected strawberries comprised 24% of the area of soft fruit crops in Ireland 2014, accounting for 22% of the total pesticide treated area and 18% of the total weight of pesticides used on soft fruit crops. Semi-protected strawberries accounted for 26% of the area of crops treated with fungicide and received 21% of the weight of total fungicides applied.

Non-protected blackcurrants comprised 34% of the area of soft fruit crops in Ireland 2014, accounting for 19% of the total pesticide treated area and 15% of the total weight of pesticides used on all soft fruit crops.

**Pesticide is an over-arching term that includes both plant protection products (including, for the purpose of this report, fungicides, herbicides, insecticides, molluscicides, biological controls and seed treatments) and biocides.*

Non-protected blackcurrants accounted for 27% of the area of crops treated with insecticide and received 17% of the total weight of insecticides applied

Protected raspberries compromised 5% of the area of soft fruit crops grown in Ireland in 2014, accounting for 3% of the total pesticide-treated area and 7% of the total weight of pesticides used on all soft fruit crops. Protected raspberries accounted for 21% of the area of crops treated with herbicide and received 34% of the total weight of herbicides applied.

Definitions & notes

- ‘Basic area’; refers to the actual planted area of crop treated with a given pesticide.
- ‘Treated area’; refers to the total area treated with a pesticide, which includes all repeated applications to the basic area. This is measured in ‘spray-hectares’ (basic area x number of spray applications = spray hectares (spha)).
- ‘Rounding’; due to rounding of figures there may be slight differences in totals both within and between tables and diagrams.
- ‘Other crops’; collectively refers to blackberries, blueberries, gooseberries, loganberries, red currants and tayberries.
- ‘Spray applications’; refers to the number of treatments of any pesticide type to the treated areas.
- ‘PPP’; refers to plant protection product.
- ‘Protected crops’; refers to all crops grown under permanent protection, i.e. glasshouse or polythene tunnel, for the entire duration of their production cycle.

- ‘Semi-protected crops’; refers to all crops grown outdoors which are covered at various times during production with Spanish tunnels.
- ‘Non-protected crops’; refers to all crops grown outdoors in field conditions without any protection during their production cycle.
- ‘Herbicides’; are defined as PPPs used to control and / or prevent unwanted vegetation
- ‘Fungicides’; are defined as PPPs used to control and / or prevent harmful fungal disease
- ‘Insecticides’; are defined as PPPs used to control and / or prevent harmful insects
- ‘Molluscicides’; are defined as PPPs used to control and / or prevent harmful slugs and snails
- ‘Biological controls’; are defined as the use of biological organisms to control and / or prevent harmful insects, mites, weeds and plant diseases. Their usage is recorded by area treated (spha) only, as they are applied in units other than weight or volume (e.g. million/ha) and this does not translate readily into a conventional weight.
- ‘Seed treatments’; are defined as PPPs applied to seeds to provide protection and improve the establishment of healthy crops
- ‘Biocides’; are defined as chemicals that are used to control and / or prevent various types of harmful or unwanted organisms, including disinfectants, preservatives, insect repellents, rodenticides and insecticides.

Background

The regulatory system for PPPs in Ireland is based directly on EU legislation which provides a very high level of protection for man, animals and the environment. The hazard of an active substance is an inherent property which can cause a harmful effect and cannot be altered or mitigated.

Legislation has been put in place at both EU and national level to minimise the risks associated with the use of PPPs while ensuring necessary crop protection. Previously legislation has concentrated mainly on the authorisation of PPPs for specific uses and the laboratory testing of food samples for PPP residues. New legislation (Sustainable Use of Pesticides Directive) based on the EU ‘Thematic strategy on the sustainable use of pesticides’ aims to achieve a balance between ensuring human and environmental safety while maintaining continued viability of the farming and amenity sectors. This will involve training and registration of advisers, distributors, operators and inspectors of pesticide application equipment, controls on storage, supply and use, adoption of the principles of IPM and improved statistics on PPP use. To address the requirement for improved statistics, Regulation (EC) No 1185/2009 was adopted on 25 November 2009 which requires each member state to collect statistics on PPP use. It is the area identified above as “improved statistics on PPP use” that this survey and future surveys will be addressing.

While sales data can provide information on the overall amount of PPPs used in the country, surveys at farm/grower/producer level are required to quantify the amounts used on different crops and to identify where and how they are being used. This type of information is required to clearly identify the risks involved and to develop and defend a strategy for the sustainable use of PPPs. Some of the specific outputs of a usage survey are as follows:

1. Provision of reliable factual data to inform policy makers.
2. Provision of information for the on-going review process of existing PPPs by providing data regarding national and regional usage of PPPs and use patterns for particular crops.

3. Monitoring farm practices to highlight areas where PPP use might be reduced by supplementation with or replacement by alternative pest control strategies e.g. use of resistant varieties, cultivation practices etc.
4. Provision of data to assess likely operator exposure to PPPs and to predict environmental impact of PPP use.
5. Monitoring changes in patterns of PPP use over time in response to government policy or economic factors.
6. Provision of information for residue monitoring programmes to assist with identifying particular areas of risk and to validate findings.

Methods

The sample of holdings to be surveyed was selected from each of the 26 counties, on the basis of the total area of soft fruit crops grown, using data from the Department of Agriculture Food and Marine. For the purpose of the survey the country was divided into three geographical regions namely the East, South and the North/West as per Table A. The sample was stratified into three size groups, according to the total area of soft fruit 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 crops grown.

Table A: Regions selected for survey and respective counties.

Regions	East	South	North/West
Counties	Louth	Wexford	Donegal
	Meath	Kilkenny	Leitrim
	Dublin	Waterford	Monaghan
	Kildare	Tipperary	Cavan
	Offaly	Limerick	Westmeath
	Laois	Cork	Longford
	Carlow	Kerry	Sligo
	Wicklow		Roscommon
			Mayo
			Galway
			Clare

The purpose of the survey was explained to the occupiers of selected holdings in preliminary correspondence. A total of 26 holdings were contacted during the period April to June 2015 and data collected by personal interview for soft fruit crops grown in 2014. The data collected included; the area of crops grown, area treated with pesticides, target pests, pesticides used, application rate and number of treatments applied. Holdings selected in the original sample which were unable to provide data were replaced with ones from the same county and size group held on a reserve list. Due to the small number of soft fruit growers located in the North/West region and for confidentiality reasons, results are displayed on a national basis. The total number of farms sampled in each size group is shown in Table B. The collected data were entered using Oracle, a relational database programme. Validated data were downloaded for analysis using SPSS software.

Table B: The total number of farms sampled from each size group.

Region	<0.5 ha Holdings sampled	0.5<1 ha Holdings sampled	1ha and above Holdings sampled	Total Holdings sampled
Ireland	3	3	20	26

Crops

Information was collected for non-protected strawberries, semi-protected strawberries, protected strawberries, non-protected raspberries, semi-protected raspberries, protected raspberries, non-protected blackcurrants, non-protected other crops, semi-protected and protected other soft fruit crops. Other crops collectively refer to blackberries, blueberries, gooseberries, loganberries, red currants and tayberries and are amalgamated due to small areas grown.

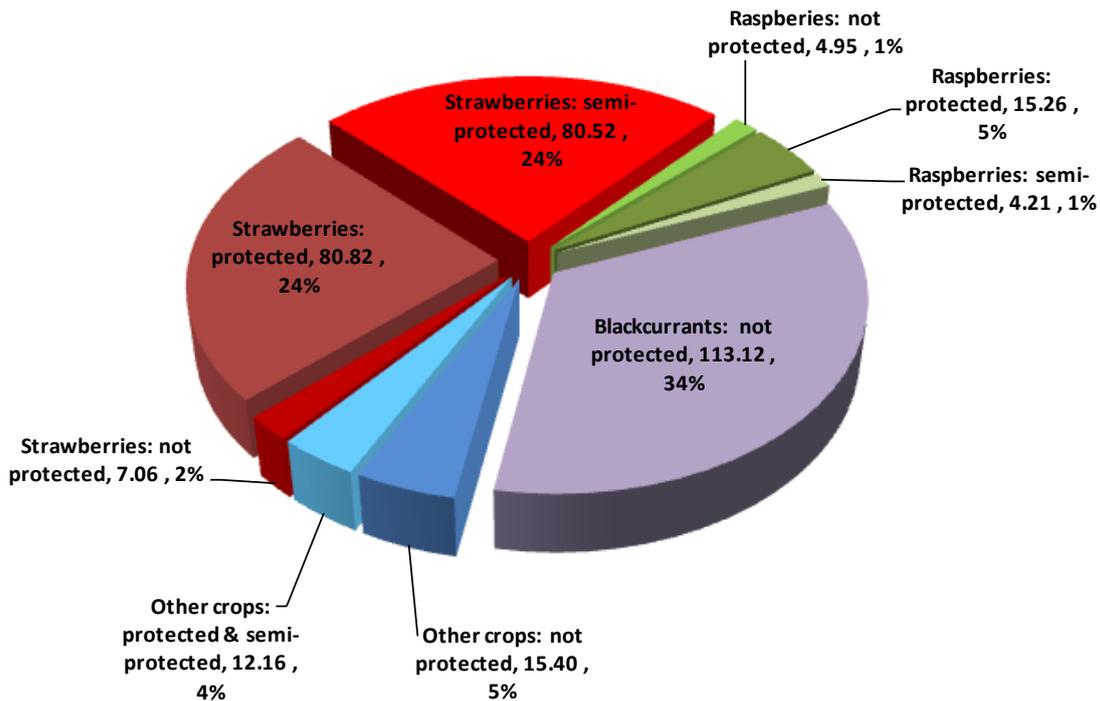
The number and areas of crops surveyed are shown in Table C. Data from 26 farms provided information on 114 examples of 9 crop types. The total area of crops sampled in the survey (187 ha) was representative of the area of soft fruit crops grown in Ireland in 2014 (334 ha).

Table C: The total number and area (hectares) of crops sampled, estimated total area and the proportion (%) of the total area of soft fruit crops surveyed in Ireland, 2014.

Crop	Number of crops surveyed	Survey area (ha)	Estimated area (ha)	Proportion of crops surveyed (%)
Strawberries				
Not protected	7	3.02	7.06	43
Protected	30	55.44	80.82	69
Semi-protected	37	52.40	80.52	65
Raspberries				
Not protected	4	2.47	4.95	50
Protected	5	12.08	15.26	79
Semi-protected	4	4.15	4.21	99
Blackcurrant				
Not protected	9	40.92	113.12	36
Other crops				
Not protected	11	10.15	15.40	66
Protected & Semi-protected	7	6.38	12.16	52
Total	114	187	334	56

Protected and semi-protected strawberries each covered an estimated 24% of the total area of soft fruit crops in 2014 as per figure 1 below. Blackcurrants accounted for 34% of the area of soft fruit crops in 2014. Protected raspberries accounted for 5% of the soft fruit crops in 2014. Other crops accounted for 9% of the total area of soft fruit crops in 2014.

Figure 1: Areas of individual soft fruit crops grown in Ireland (ha), 2014.



Pesticide usage

Fungicides were applied to 65% of the pesticide-treated area and accounted for 77% of the total weight of pesticides used. Herbicides were applied to 10% of the pesticide-treated area accounting for 17% of the total weight of pesticides used. Insecticides were applied to 22% of the pesticide treated area of soft fruit crops, accounting for 6% of the weight of pesticides applied. Molluscicide treatments represented less than 1% of pesticide treated area and less than 1% of the weight of pesticides applied. Biological controls accounted for 3% of the pesticide-treated area.

Figure 2: Pesticide usage (spha) on soft fruit crops treated in Ireland, 2014.

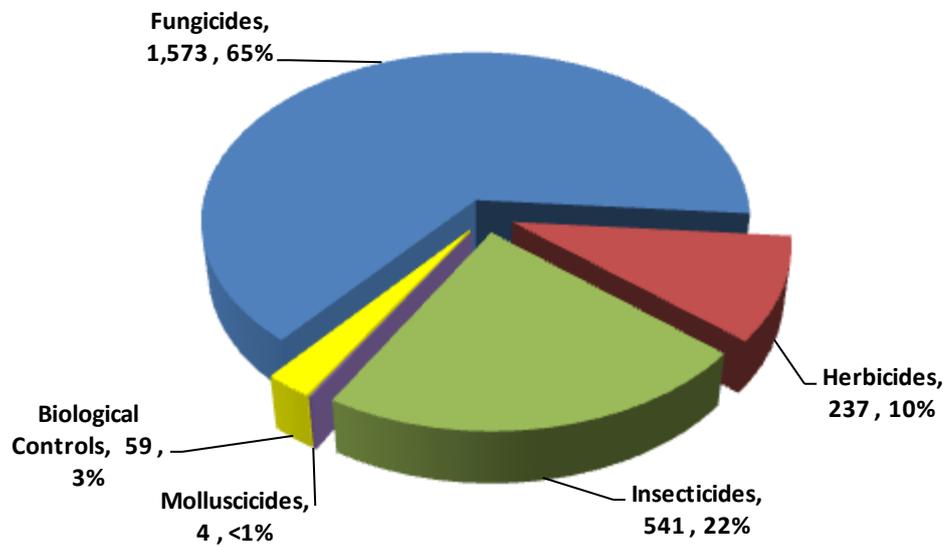
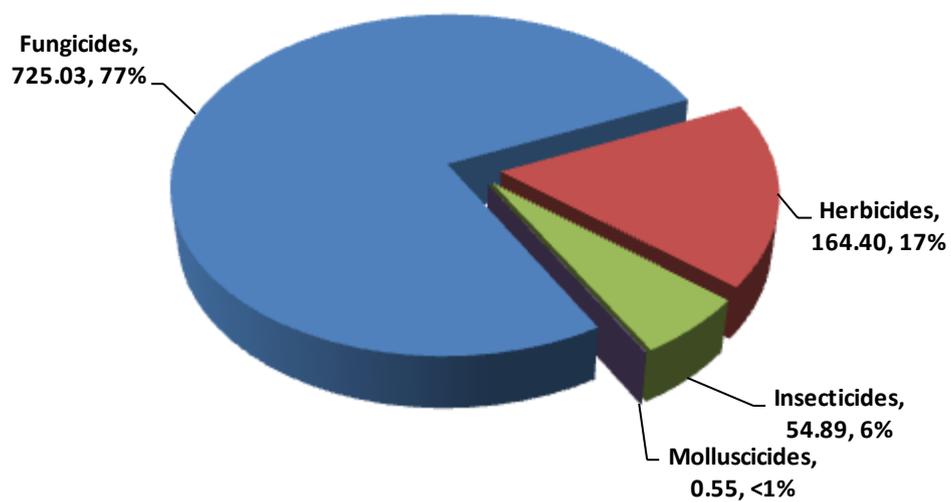


Figure 3: Weight (kgs) of pesticides applied to soft fruit crops treated in Ireland, 2014.



Pesticide usage survey results 2014

Pesticide usage on non-protected strawberries

7.06 ha of non-protected strawberries grown in Ireland.

26.80 treated hectares.

14.08 kilogrammes applied

Figure 4: Pesticide usage (spha) on non-protected strawberries in Ireland, 2014.

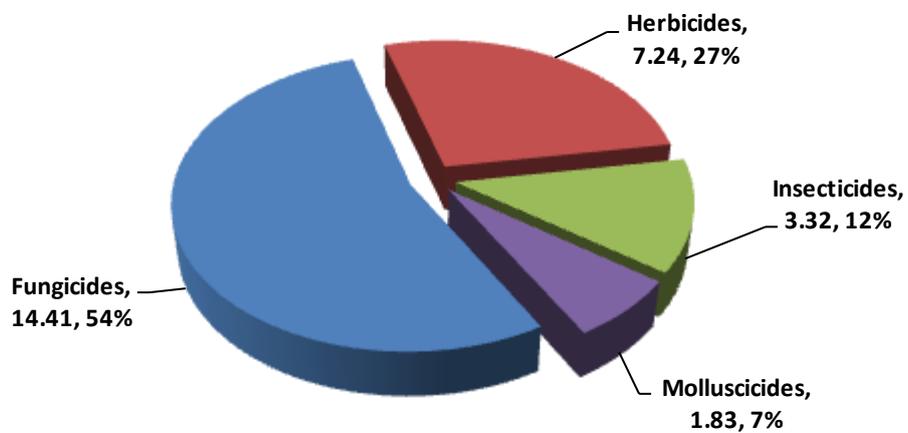


Figure 5: Weight of pesticides (kg) applied to non-protected strawberries in Ireland, 2014.

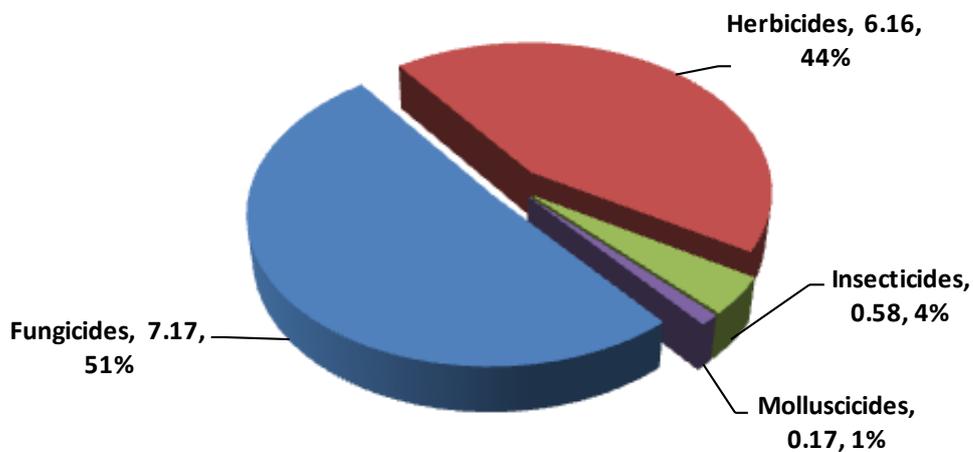


Figure 6: The top 10 active ingredients most extensively used on non-protected strawberries in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Iprodione	2.51	3.34	1.08
Fenhexamid	2.18	3.13	2.03
Myclobutanil	0.35	2.61	0.87
Pirimicarb	0.49	1.87	1.11
Pendimethalin	1.47	1.83	0.92
Napropamide	1.16	1.83	0.92
Glyphosate	2.64	1.83	1.83
Methiocarb	0.17	1.83	1.83
Cyprodinil	0.30	1.63	0.87
Fludioxonil	0.20	1.63	0.87

Figure 7: The top 10 active ingredients most extensively used on non-protected strawberries in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Glyphosate	2.64	1.83	1.83
Iprodione	2.51	3.34	1.08
Fenhexamid	2.18	3.13	2.03
Pendimethalin	1.47	1.83	0.92
Napropamide	1.16	1.83	0.92
Glufosinate-ammonium	0.76	0.76	0.76
Pirimicarb	0.49	1.87	1.11
Dimethomorph	0.46	0.34	0.34
Boscalid	0.46	1.47	1.37
Myclobutanil	0.35	2.61	0.87

Pesticide usage on protected strawberries

80.82 ha of protected strawberries grown in Ireland.

1235.30 treated hectares.

530.79 kilogrammes applied

Figure 8: Pesticide usage (spha) on protected strawberries in Ireland, 2014.

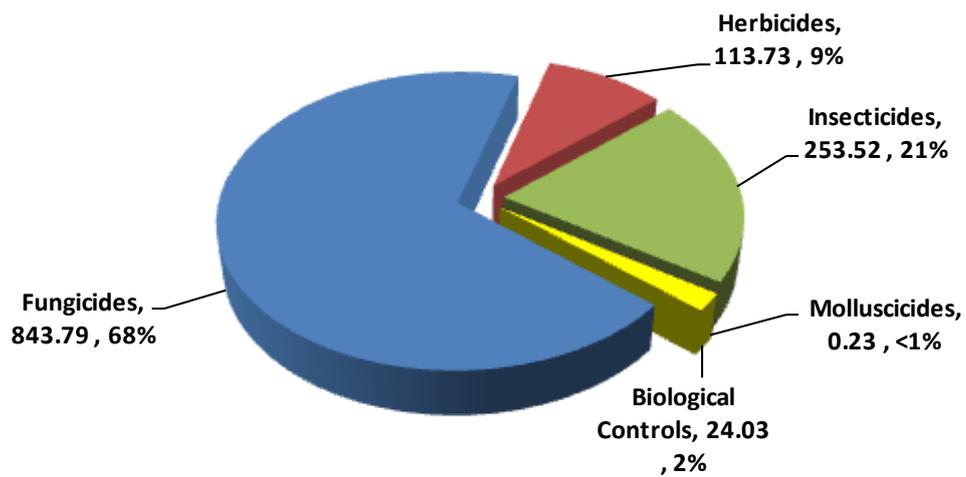


Figure 9: Weight of pesticides (kg) applied to protected strawberries in Ireland, 2014.

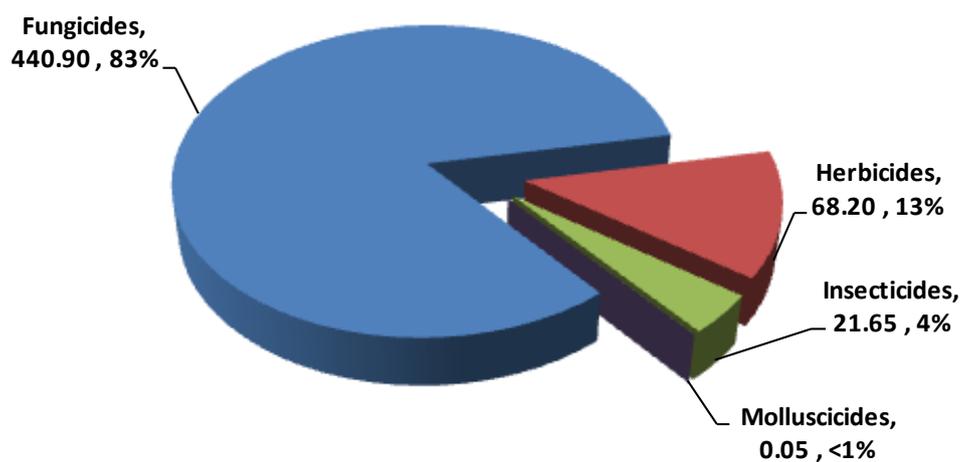


Figure 10: The top 10 active ingredients most extensively used on protected strawberry crops in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Myclobutanil	171.30	36.76	15.92
Fenhexamid	116.33	35.15	58.76
Glufosinate-ammonium	113.06	56.53	67.84
Spinosad	104.80	29.49	7.57
Azoxystrobin	97.98	27.12	24.90
Iprodione	77.48	28.53	32.12
Abamectin	77.29	31.23	0.71
Boscalid	74.88	36.23	20.52
Pyraclostrobin	74.88	36.23	5.15
Quinoxifen	52.93	27.23	6.90

Figure 11: The top 10 active ingredients most extensively used on protected strawberry crops in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Sulphur	186.55	46.92	23.35
Glufosinate-ammonium	67.84	113.06	56.53
Fenhexamid	58.76	116.33	35.15
Dimethomorph	33.92	22.61	22.61
Iprodione	32.12	77.48	28.53
Azoxystrobin	24.90	97.98	27.12
Boscalid	20.52	74.88	36.23
Mepanipyrim	20.40	49.20	26.29
Myclobutanil	15.92	171.30	36.76
Cyprodinil	10.01	50.36	26.30

Pesticide usage on semi-protected strawberries

80.52 ha of semi-protected strawberries in Ireland.

527.01 treated hectares.

169.76 kilogrammes applied

Figure 12: Pesticide usage (spha) on semi-protected strawberries in Ireland, 2014.

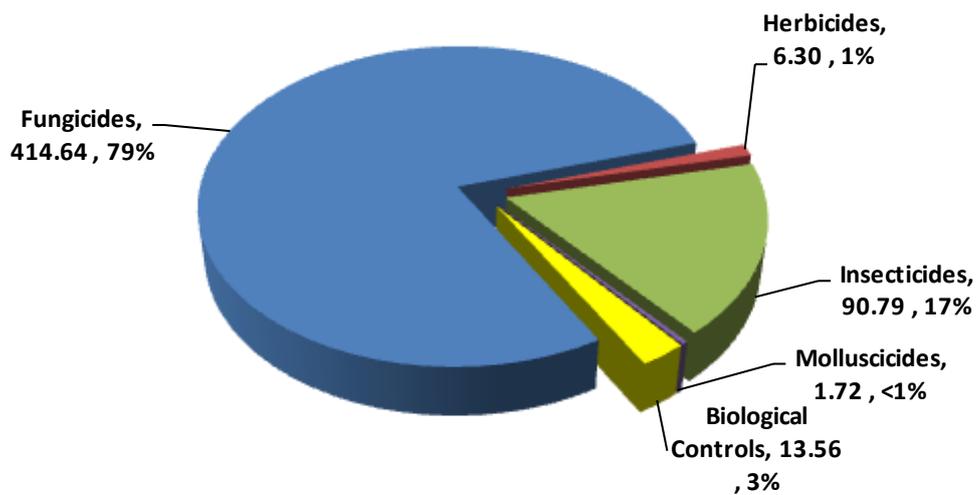


Figure 13: Weight of pesticides (kg) applied to semi-protected strawberries in Ireland, 2014.

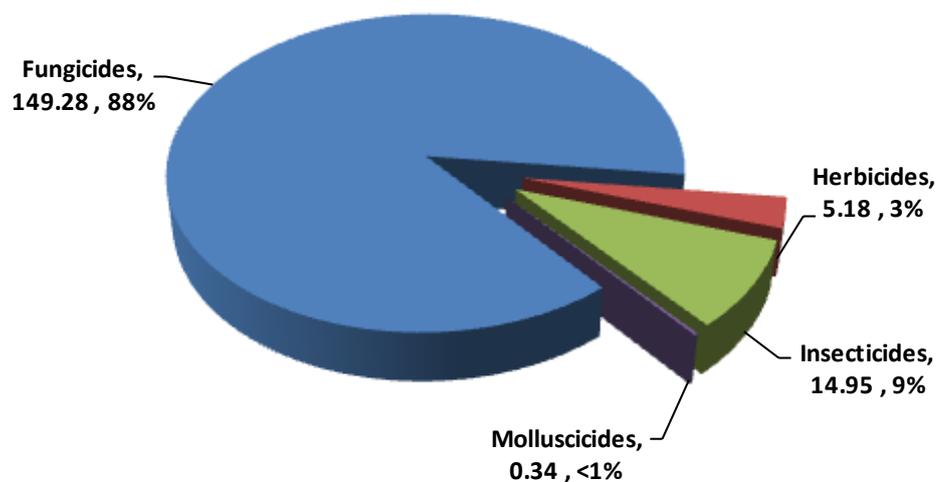


Figure 14: The top 10 active ingredients most extensively used on semi-protected strawberry crops in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Myclobutanil	84.94	23.93	7.92
Boscalid	44.04	23.37	14.07
Pyraclostrobin	44.04	23.37	3.52
Fenhexamid	41.41	21.01	23.90
Bupirimate	40.93	15.67	10.41
Epoxiconazole	35.07	3.84	4.52
Iprodione	33.67	19.06	22.11
Pirimicarb	31.50	14.86	7.79
Azoxystrobin	29.18	16.72	7.37
Pyrimethanil	25.60	10.61	16.99

Figure 15: The top 10 active ingredients most extensively used on semi-protected strawberry crops in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Fenhexamid	23.90	41.41	21.01
Iprodione	22.11	33.67	19.06
Pyrimethanil	16.99	25.60	10.61
Boscalid	14.07	44.04	23.37
Bupirimate	10.41	40.93	15.67
Mepanipyrim	9.54	22.19	14.75
Dimethomorph	8.02	12.49	7.14
Myclobutanil	7.92	84.94	23.93
Pirimicarb	7.79	31.50	14.86
Azoxystrobin	7.37	29.18	16.72

Pesticide usage on non-protected raspberries

4.95 ha of non-protected raspberries in Ireland.

6.98 treated hectares.

3.63 kilogrammes applied

Figure 16: Pesticide usage (spha) on non-protected raspberries in Ireland, 2014.

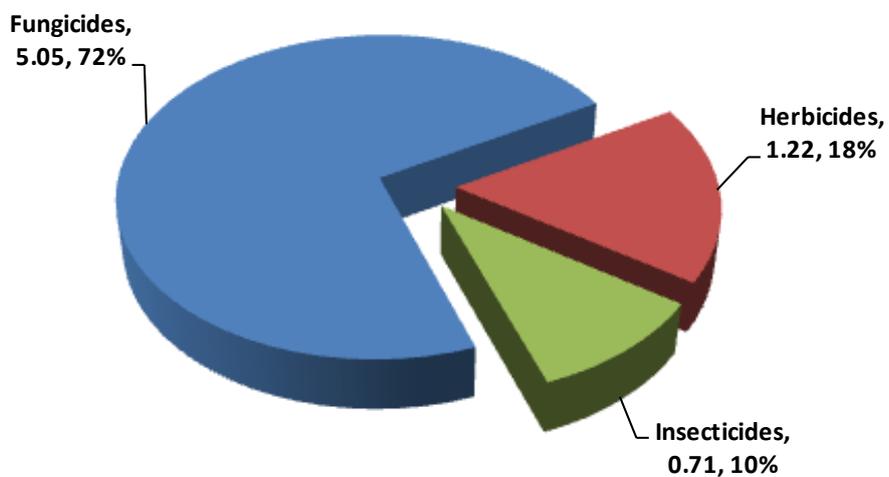


Figure 17: Weight of pesticides (kg) applied to non-protected raspberries in Ireland, 2014.

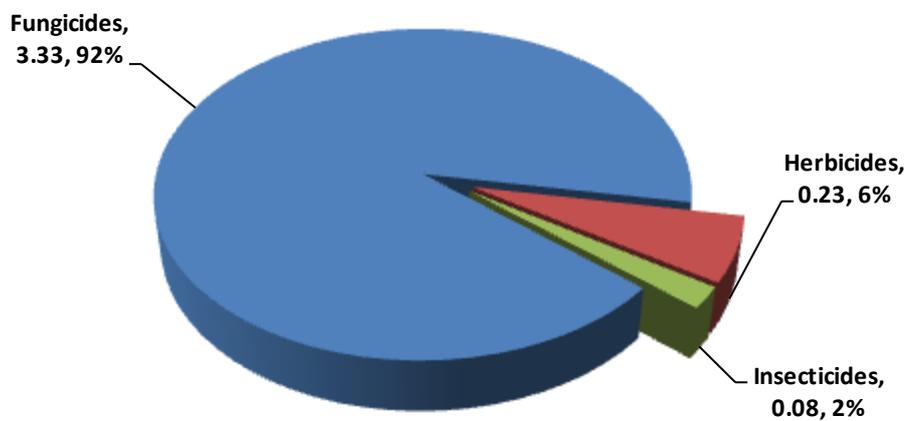


Figure 18: The top 8 active ingredients most extensively used on non-protected raspberries in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Fenhexamid	1.65	0.71	1.11
Cyprodinil	1.53	0.77	0.63
Fludioxonil	1.53	0.77	0.42
Iprodione	1.40	0.79	1.05
Fluazifop-P-butyl	1.22	1.22	0.23
Azoxystrobin	0.48	0.48	0.12
Pyrethrins	0.48	0.48	0.03
Chlorpyrifos	0.23	0.23	0.05

Figure 19: The top 8 active ingredients most extensively used on non-protected raspberries in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Fenhexamid	1.11	1.65	0.71
Iprodione	1.05	1.40	0.79
Cyprodinil	0.63	1.53	0.77
Fludioxonil	0.42	1.53	0.77
Fluazifop-P-butyl	0.23	1.22	1.22
Azoxystrobin	0.12	0.48	0.48
Chlorpyrifos	0.05	0.23	0.23
Pyrethrins	0.03	0.48	0.48

Pesticide usage on protected raspberries.

15.26 ha of protected raspberries in Ireland.

82.79 treated hectares.

65.51 kilogrammes applied.

Figure 20: Pesticide usage (spha) on protected raspberries in Ireland, 2014.

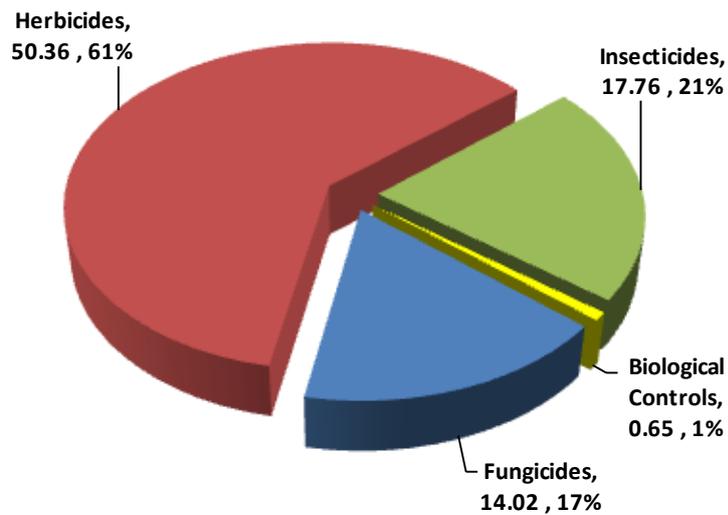


Figure 21: Weight of pesticides (kg) applied to protected raspberries in Ireland, 2014.

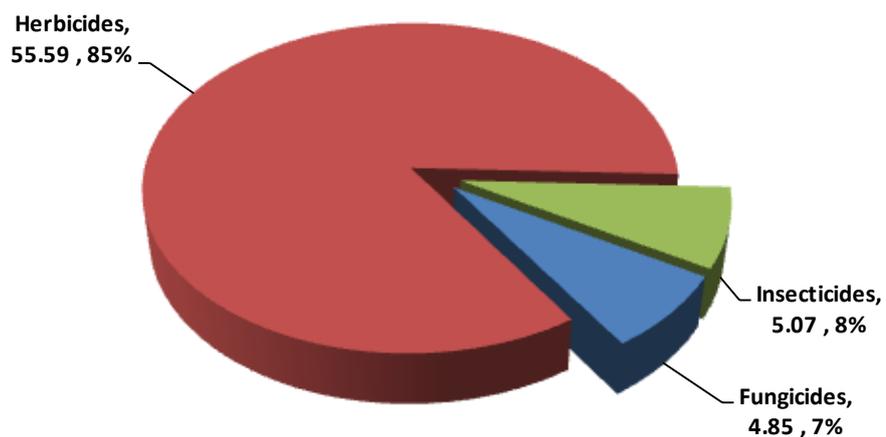


Figure 22: The top 10 active ingredients most extensively used on protected raspberry crops in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Glufosinate-ammonium	30.21	10.07	30.21
Pendimethalin	10.07	10.07	13.29
Propyzamide	10.07	10.07	12.09
Chlorpyrifos	8.63	4.32	4.14
Azoxystrobin	4.71	4.48	1.19
Cyprodinil	4.60	4.49	1.73
Fludioxonil	4.60	4.49	1.15
Thiacloprid	4.49	4.35	0.57
Myclobutanil	4.32	4.32	0.60
Tebufenpyrad	4.32	4.32	0.32

Figure 23: The top 10 active ingredients most extensively used on protected raspberry crops in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Glufosinate-ammonium	30.21	30.21	10.07
Pendimethalin	13.29	10.07	10.07
Propyzamide	12.09	10.07	10.07
Chlorpyrifos	4.14	8.63	4.32
Cyprodinil	1.73	4.60	4.49
Azoxystrobin	1.19	4.71	4.48
Fludioxonil	1.15	4.60	4.49
Myclobutanil	0.60	4.32	4.32
Thiacloprid	0.57	4.49	4.35
Tebufenpyrad	0.32	4.32	4.32

Pesticide usage on semi-protected raspberries

4.21 ha of semi-protected raspberries grown in Ireland.

13.47 treated hectares.

1.99 kilogrammes applied

Figure 24: Pesticide usage (spha) on semi-protected raspberries in Ireland, 2014.

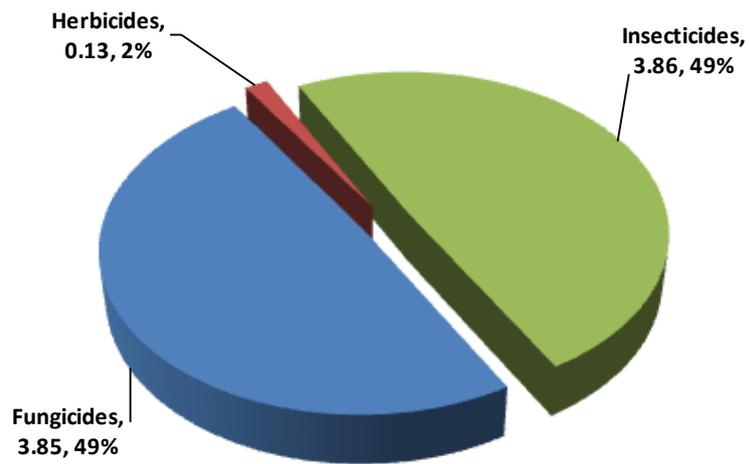


Figure 25: Weight of pesticides (kg) applied to protected raspberries in Ireland, 2014.

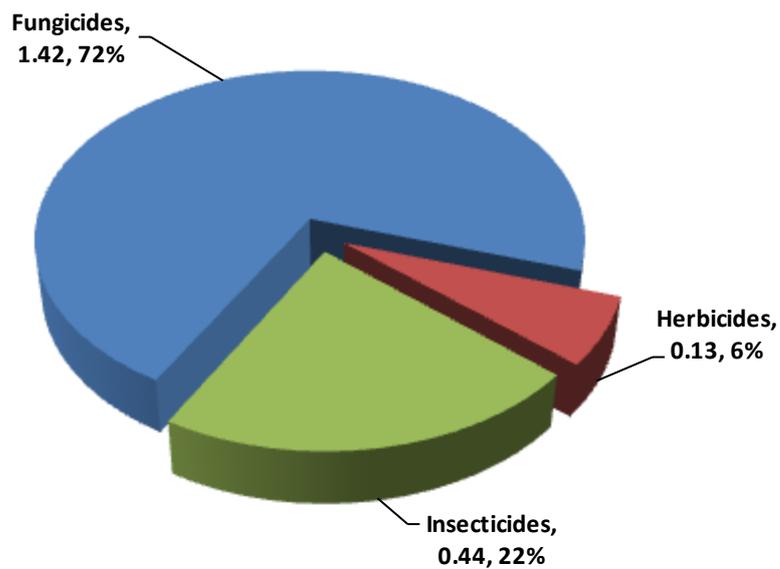


Figure 26: The top 10 active ingredients most extensively used on semi-protected raspberry crops in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Bacillus subtilis	5.63	1.00	
Azoxystrobin	1.58	0.79	0.40
Thiacloprid	1.50	1.00	0.18
Abamectin	1.30	0.79	0.01
Pyrimethanil	0.79	0.79	0.37
Cyprodinil	0.64	0.64	0.24
Fludioxonil	0.64	0.64	0.16
Tebufenpyrad	0.51	0.51	0.04
Pirimicarb	0.42	0.21	0.12
Boscalid	0.42	0.21	0.10

Figure 27: The top 10 active ingredients most extensively used on semi-protected raspberry crops in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Azoxystrobin	0.40	1.58	0.79
Pyrimethanil	0.37	0.79	0.79
Cyprodinil	0.24	0.64	0.64
Thiacloprid	0.18	1.50	1.00
Fludioxonil	0.16	0.64	0.64
Glufosinate-ammonium	0.13	0.13	0.13
Pirimicarb	0.12	0.42	0.21
Boscalid	0.10	0.42	0.21
Fenhexamid	0.10	0.13	0.13
Chlorpyrifos	0.09	0.13	0.13

Pesticide usage on non-protected blackcurrants

113.12 ha of non-protected blackcurrants grown in Ireland.

448.51 treated hectares.

138.11 kilogrammes applied.

Figure 28: Pesticide usage (spha) on non-protected blackcurrant crops in Ireland, 2014.

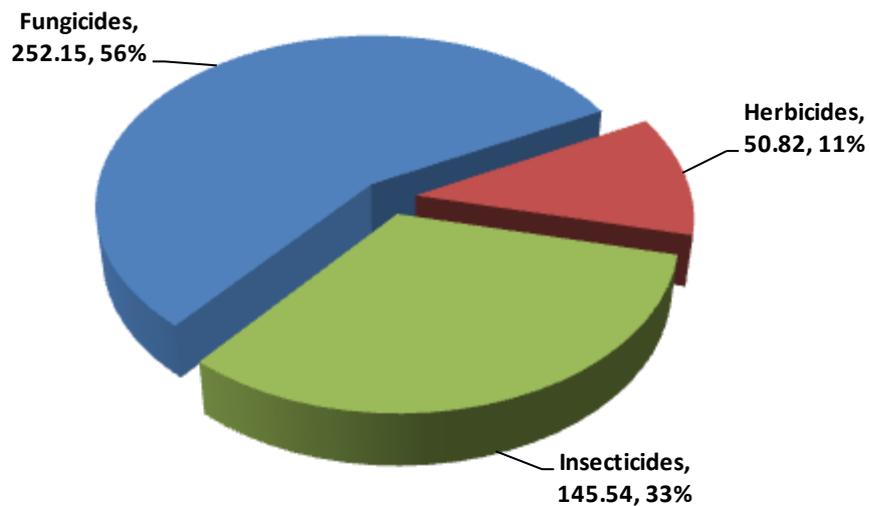


Figure 29: Weight of pesticides (kg) applied to non-protected blackcurrant crops in Ireland, 2014.

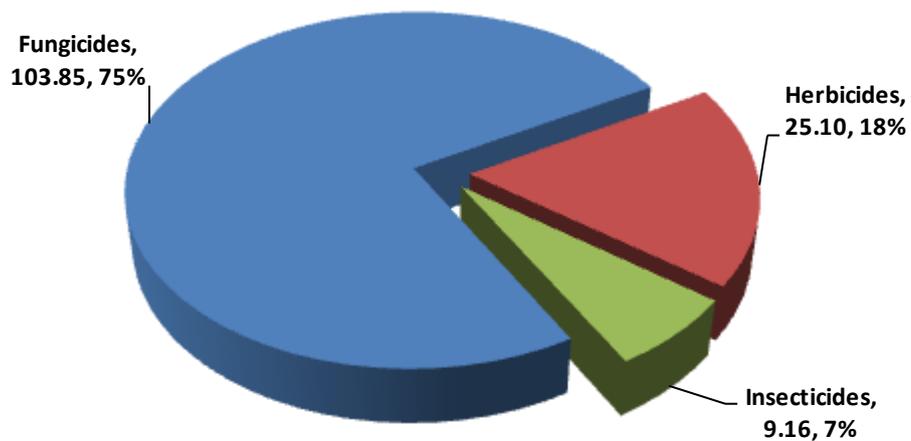


Figure 30: The top 10 active ingredients most extensively used on non-protected blackcurrants in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Kresoxim-methyl	81.21	79.12	8.14
Boscalid	80.74	79.12	32.33
Pyraclostrobin	80.74	79.12	8.11
Cyprodinil	80.73	79.12	30.27
Fludioxonil	80.73	79.12	20.18
Thiacloprid	72.06	72.06	8.65
Lambda-cyhalothrin	72.06	72.06	0.32
Glyphosate	25.54	25.54	19.88
Flazasulfuron	18.01	18.01	0.68
Pyrimethanil	4.83	3.22	3.86

Figure 31: The top 10 active ingredients most extensively used on non-protected blackcurrants in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Boscalid	32.33	80.74	79.12
Cyprodinil	30.27	80.73	79.12
Fludioxonil	20.18	80.73	79.12
Glyphosate	19.88	25.54	25.54
Thiacloprid	8.65	72.06	72.06
Kresoxim-methyl	8.14	81.21	79.12
Pyraclostrobin	8.11	80.74	79.12
Pyrimethanil	3.86	4.83	3.22
Pendimethalin	3.77	3.36	3.36
Diquat	0.77	3.84	3.84

Pesticide usage on non-protected other soft fruit crops

15.40 ha of non-protected other soft fruit crops grown in Ireland.

17.72 treated hectares.

5.82 kilogrammes applied.

Figure 32: Pesticide usage (spha) on non-protected other soft fruit crops in Ireland, 2014.

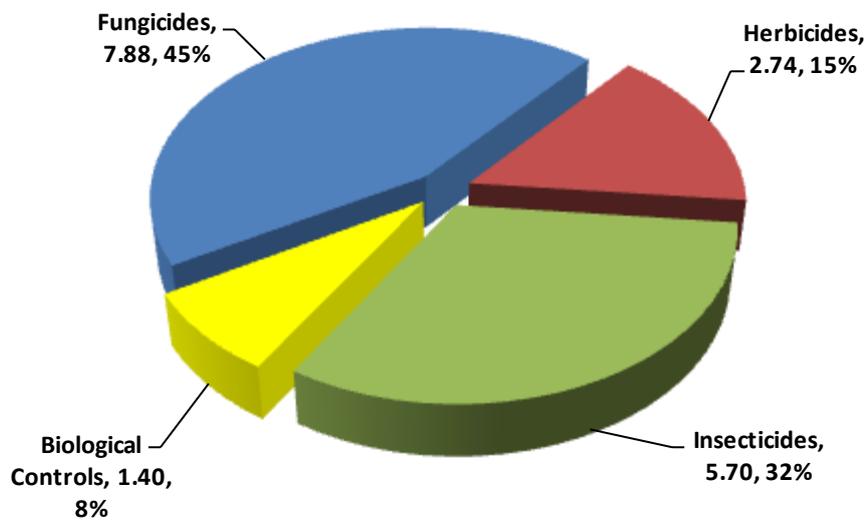


Figure 33: Weight of pesticides (kg) applied to non-protected other soft fruit crops in Ireland, 2014.

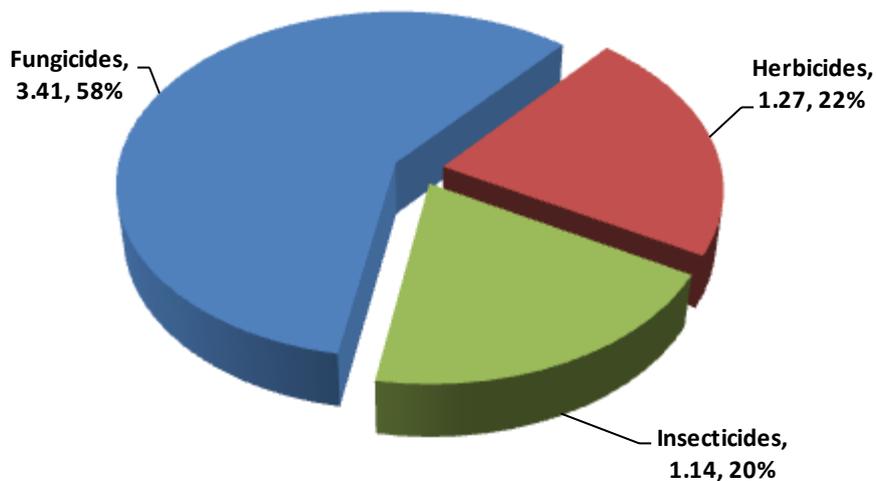


Figure 34: The top 10 active ingredients most extensively used on non-protected other soft fruit crops grown in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Bupirimate	2.70	0.90	0.95
Glufosinate-ammonium	2.68	2.68	1.25
Thiacloprid	1.91	1.51	0.23
Fenhexamid	1.50	0.75	0.75
Pyrimethanil	1.40	1.40	0.96
Cyprodinil	1.40	1.40	0.34
Fludioxonil	1.40	1.40	0.23
Bacillus subtilis	1.40	1.40	
Pyrethrins	1.30	0.85	0.07
Pirimicarb	1.19	0.89	0.17

Figure 35: The top 10 active ingredients most extensively used on non-protected other soft fruit crops grown in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Glufosinate-ammonium	1.25	2.68	2.68
Pyrimethanil	0.96	1.40	1.40
Bupirimate	0.95	2.70	0.90
Fenhexamid	0.75	1.50	0.75
Chlorpyrifos	0.65	0.90	0.90
Cyprodinil	0.34	1.40	1.40
Fludioxonil	0.23	1.40	1.40
Thiacloprid	0.23	1.91	1.51
Pirimicarb	0.17	1.19	0.89
Azoxystrobin	0.10	0.40	0.40

Pesticide usage on protected & semi-protected other soft fruit crops

12.16 ha of protected & semi-protected other soft fruit crops grown in Ireland.

55.33 treated hectares.

15.19 kilogrammes applied.

Figure 36: Pesticide usage (spha) on protected & semi-protected other soft fruit crops in Ireland, 2014.

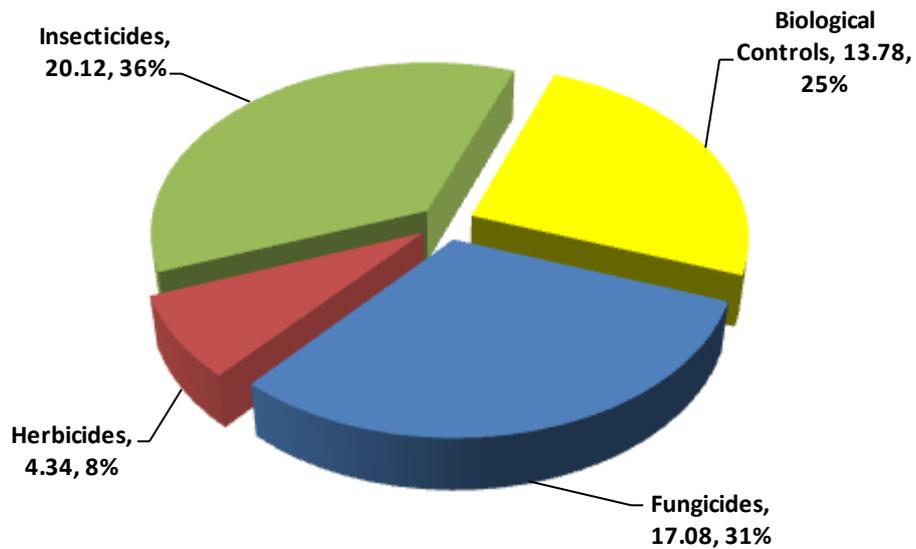


Figure 37: Weight of pesticides (kg) applied to protected & semi-protected other soft fruit crops in Ireland, 2014.

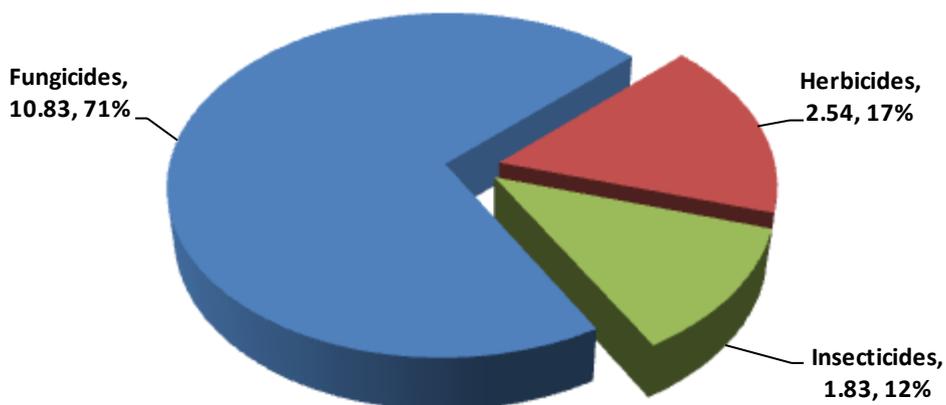


Figure 38: The top 10 active ingredients most extensively used on protected & semi-protected other soft fruit crops in Ireland in 2014, ranked by area treated (spray-hectares).

Active substance	Treated area (spha)	Basic area treated (ha)	Quantity applied (kg)
Bacillus subtilis	13.78	2.95	
Pyrethrins	10.30	2.90	0.57
Thiacloprid	9.11	3.20	1.07
Fenpropimorph	6.80	2.33	4.62
Pyrimethanil	4.51	2.33	3.60
Glufosinate-ammonium	4.34	4.04	2.54
Boscalid	2.48	2.28	0.98
Pyraclostrobin	2.48	2.28	0.25
Azoxystrobin	1.42	0.66	0.35
Cyprodinil	1.32	0.68	0.49

Figure 39: The top 10 active ingredients most extensively used on protected & semi-protected other soft fruit crops in Ireland in 2014, ranked by weight (kg).

Active substance	Quantity applied (kg)	Treated area (spha)	Basic area treated (ha)
Fenpropimorph	4.62	6.80	2.33
Pyrimethanil	3.60	4.51	2.33
Glufosinate-ammonium	2.54	4.34	4.04
Thiacloprid	1.07	9.11	3.20
Boscalid	0.98	2.48	2.28
Pyrethrins	0.57	10.30	2.90
Cyprodinil	0.49	1.32	0.68
Azoxystrobin	0.35	1.42	0.66
Fludioxonil	0.33	1.32	0.68
Pyraclostrobin	0.25	2.48	2.28

Table 1: Estimated area (ha) of soft fruit crops grown in Ireland, 2014.

Crop	Ireland
Strawberries: not protected	7.06
Strawberries: protected	80.82
Strawberries: semi-protected	80.52
Raspberries: not protected	4.95
Raspberries: protected	15.26
Raspberries: semi-protected	4.21
Blackcurrants: not protected	113.12
Other crops: not protected	15.40
Other crops: protected & semi-protected	12.16
Total	334

Table 2: Estimated area (spray-hectares) of soft fruit crops treated with each pesticide type in Ireland, 2014.

Pesticide type	Ireland
Fungicides	1,573
Herbicides	237
Insecticides	541
Molluscicides	4
Biological controls	59
Total	2,414

Table 3: Estimated weight (kg) applied to soft fruit crops with each pesticide type in Ireland, 2014.

Pesticide type	Ireland
Fungicides	725.03
Herbicides	164.40
Insecticides	54.89
Molluscicides	0.55
Biological controls	.
Total	944.88

Table 4: The total area (spray hectares) and the basic area (hectares), of soft fruit crops in Ireland 2014 treated with each pesticide type.

<i>Crop type</i>	Pesticide Type												<i>(ha) treated</i>	<i>(ha) grown</i>
	Fungicides		Herbicides		Insecticides		Molluscicides		Biological controls		<i>(sp ha)</i>			
	<i>(sp ha)</i>	<i>(ha)</i>	<i>(sp ha)</i>	<i>(ha)</i>	<i>(sp ha)</i>	<i>(ha)</i>	<i>(sp ha)</i>	<i>(ha)</i>	<i>(sp ha)</i>	<i>(ha)</i>				
Strawberries: not protected	14.41	4.36	7.24	3.57	3.32	1.45	1.83	1.83			26.80	7.06	7.06	
Strawberries: protected	843.79	70.86	113.73	57.25	253.52	71.08	0.23	0.23	24.03	24.03	1,235.30	80.82	80.82	
Strawberries: semi-protected	414.64	28.65	6.30	5.96	90.79	20.28	1.72	1.72	13.56	4.69	527.01	61.29	80.52	
Raspberries: not protected	5.05	2.22	1.22	1.22	0.71	0.71					6.98	4.15	4.95	
Raspberries: protected	14.02	10.31	50.36	10.07	17.76	10.23			0.65	0.16	82.79	15.26	15.26	
Raspberries: semi-protected	3.85	1.13	0.13	0.13	3.86	1.13			5.63	1.00	13.47	3.40	4.21	
Blackcurrants: not protected	252.15	83.89	50.82	50.82	145.54	72.53					448.51	113.12	113.12	
Other crops: not protected	7.88	3.53	2.74	2.74	5.70	3.64			1.40	1.40	17.72	11.31	15.40	
other crop; protected & semi-protected	17.08	4.00	4.34	3.88	20.12	4.33	0.00	0.00	13.78	4.00	55.33	11.79	12.16	
Total	1,572.86	208.96	236.87	135.63	541.33	185.40	3.78	3.78	59.05	35.28	2,413.90	308.20	333.50	

Table 5: The total quantities (kilograms) of each pesticide type used on soft fruit crops in Ireland 2014.

<i>Crop</i>	Pesticide type					Total weight applied (kg)
	Fungicides	Herbicides	Insecticides	Molluscicides	Biological controls	
Strawberries: not protected	7.17	6.16	0.58	0.17		14.08
Strawberries: protected	440.90	68.20	21.65	0.05		530.79
Strawberries: semi-protected	149.28	5.18	14.95	0.34		169.76
Raspberries: not protected	3.33	0.23	0.08			3.63
Raspberries: protected	4.85	55.59	5.07			65.51
Raspberries: semi-protected	1.42	0.13	0.44			1.99
Blackcurrants: not protected	103.85	25.10	9.16			138.11
Other crops: not protected	3.41	1.27	1.14			5.82
Other crops: protected & semi-protected	10.83	2.54	1.83	0.00	0.00	15.19
<i>All crops</i>	725.03	164.40	54.89	0.55	0.00	944.88

Table 6: Estimated area (spray-hectares) of soft fruit crops treated with pesticide formulations in Ireland, 2014.

Pesticide type & formulation	Crop									All crops
	Strawberries: not protected	Strawberries: protected	Strawberries: semi protected	Raspberry: not protected	Raspberry: protected	Raspberry: semi protected	Blackcurrant not protected	Other: not protected	Other Protected & semi-protected	
<i>Fungicides</i>										
Azoxystrobin	0.21	97.99	29.18	0.48	4.71	1.58		0.40	1.41	135.97
Boscalid/pyraclostrobin	1.47	74.88	44.04			0.42	80.74		2.48	204.04
Bupirimate	0.11	25.91	40.93					2.70	0.10	69.75
Cyprodinil/fludioxonil	1.63	50.36	20.53	1.53	4.60	0.64	80.73	1.40	1.32	162.75
Dimethomorph	0.34	22.61	12.49							35.45
Epoxiconazole		5.08	24.97			0.28			0.13	30.47
Epoxiconazole/ fenpropimorph/ kresoxim-methyl			10.08						0.04	10.13
Fenhexamid	3.13	116.33	41.41	1.64	0.29	0.13	1.43	1.50	0.08	165.95
Fenpropimorph									6.75	6.75
Iprodione	3.34	77.48	33.67	1.40	0.06			0.48	0.13	116.57
Kresoxim-methyl		46.89	2.64				81.21			130.75
Mepanipyrim	0.69	49.20	22.20							72.09
Myclobutanil	2.61	171.29	84.94		4.32		3.22		0.10	266.48
Pyrimethanil	0.21	5.91	25.59		0.03	0.79	4.83	1.40	4.51	43.28
Quinoxifen	0.66	52.93	21.03							74.62
Sulphur		46.92	0.92							47.84
Total	14.41	843.79	414.64	5.05	14.02	3.85	252.15	7.88	17.08	1,572.86
All fungicides	14.41	843.79	414.64	5.05	14.02	3.85	252.15	7.88	17.08	1572.86
<i>Herbicides</i>										
Diquat	0.92	0.62	1.03				3.84			6.41
Flazasulfuron							18.01			18.01
Fluazifop-P-butyl	0.06			1.22			0.06			1.33
Glufosinate-ammonium	0.76	113.06	5.27		30.21	0.13		2.68	4.34	156.46
Glyphosate	1.83	0.05					25.54	0.06		27.49
Napropamide	1.83									1.83
Pendimethalin	1.83				10.07		3.36			15.27
Propyzamide					10.07					10.07
All herbicides	7.24	113.73	6.30	1.22	50.36	0.13	50.82	2.74	4.34	236.87

Table 6 (cont.): Estimated area (spray-hectares) of soft fruit crops treated with pesticide formulations in Ireland, 2014.

Pesticide type & formulation	Crop									All crops
	Strawberries: not protected	Strawberries: protected	Strawberries: semi protected	Raspberry: not protected	Raspberry: protected	Raspberry: semi protected	Blackcurrant not protected	Other: not protected	Other Protected & semi-protected	
<i>Insecticides</i>										
Abamectin		77.29	10.56			1.30			0.04	89.20
Bifenazate		48.89	1.72							50.61
Chlorpyrifos		9.70	5.31	0.23	8.63	0.13		0.90		24.90
Deltamethrin		1.10								1.10
Etoxazole		1.20	0.51							1.71
Lambda-cyhalothrin							72.06			72.06
Pirimicarb	1.87	7.32	31.50		0.06	0.42	1.43	1.19	0.67	44.47
Pymetrozine			2.14							2.14
Pyrethrins	0.69	0.43	2.90	0.48	0.27			1.30	10.29	16.36
Spinosad	0.76	104.80	20.70							126.26
Tebufenpyrad			1.43		4.32	0.51		0.40		6.65
Thiacloprid		2.78	14.03		4.49	1.50	72.06	1.91	9.12	105.87
All Insecticides	3.32	253.52	90.79	0.71	17.76	3.86	145.54	5.70	20.12	541.33
<i>Molluscicides</i>										
Metaldehyde		0.23	1.72							1.95
Methiocarb	1.83									1.83
All molluscicides	1.83	0.23	1.72	0.00	0.00	0.00	0.00	0.00	0.00	3.78
<i>Biological controls</i>										
Bacillus subtilis		24.03	13.56		0.65	5.63		1.40	13.78	59.05
All biological controls	0.00	24.03	13.56	0.00	0.65	5.63	0.00	1.40	13.78	59.05
All pesticides	26.80	1235.29	527.01	6.98	82.79	13.47	448.51	17.72	55.33	2413.90

Table 7: Estimated quantities (kilograms) of pesticide formulations used on soft fruit crops in Ireland, 2014.

Pesticide type & formulation	Crop									All crops
	Strawberries: not protected	Strawberries: protected	Strawberries: semi protected	Raspberry: not protected	Raspberry: protected	Raspberry: semi protected	Blackcurrant not protected	Other: not protected	Other Protected & semi-protected	
Fungicides										
Azoxystrobin	0.05	24.91	7.37	0.12	1.19	0.40		0.10	0.35	34.49
Boscalid/pyraclostrobin	0.57	25.67	17.60			0.12	40.45		1.23	85.64
Bupirimate	0.03	6.46	10.41					0.95	0.04	17.88
Cyprodinil/fludioxonil	0.50	16.68	7.61	1.05	2.88	0.40	50.45	0.56	0.81	80.95
Dimethomorph	0.46	33.92	8.02							42.40
Epoxiconazole		0.83	3.27			0.04			0.02	4.16
Epoxiconazole/fenpropimorph/kresoxim-methyl			4.03						0.02	4.05
Fenhexamid	2.18	58.76	23.90	1.11	0.14	0.10	0.72	0.75	0.04	87.69
Fenpropimorph									4.62	4.62
Iprodione	2.50	32.12	22.11	1.05	0.02			0.09	0.10	57.99
Kresoxim-methyl		7.08	0.44				8.14			15.66
Mepanipyrim	0.25	20.40	9.54							30.19
Myclobutanil	0.35	15.92	7.91		0.60		0.23		0.01	25.02
Pyrimethanil	0.17	4.70	16.98		0.03	0.37	3.86	0.96	3.60	30.68
Quinoxifen	0.11	6.90	2.73							9.74
Sulphur		186.55	7.33							193.88
All fungicides	7.17	440.90	149.28	3.33	4.85	1.42	103.85	3.41	10.83	725.03
Herbicides										
Diquat	0.13	0.33	0.19				0.77			1.42
Flazasulfuron							0.68			0.68
Fluazifop-P-butyl	0.01			0.23			0.01			0.25
Glufosinate-ammonium	0.76	67.84	5.00		30.21	0.13		1.25	2.54	107.72
Glyphosate	2.64	0.02					19.88	0.02		22.57
Napropamide	1.16									1.16
Pendimethalin	1.47				13.29		3.77			18.53
Propyzamide					12.09					12.09
All herbicides	6.16	68.20	5.18	0.23	55.59	0.13	25.10	1.27	2.54	164.40

Table 7 (cont.): Estimated quantities (kilograms) of pesticide formulations used on soft fruit crops in Ireland, 2014.

Pesticide type & formulation	Crop									All crops
	Strawberries: not protected	Strawberries: protected	Strawberries: semi protected	Raspberry: not protected	Raspberry: protected	Raspberry: semi protected	Blackcurrant not protected	Other: not protected	Other Protected & semi-protected	
<i>Insecticides</i>										
Abamectin		0.71	0.10			0.01			0.00	0.82
Bifenazate		4.72	0.20							4.92
Chlorpyrifos		4.66	2.88	0.05	4.14	0.09		0.65		12.47
Deltamethrin		0.01								0.01
Etoxazole		0.09	0.03							0.12
Lambda-cyhalothrin							0.32			0.32
Pirimicarb	0.49	3.36	7.79		0.02	0.12	0.20	0.17	0.19	12.32
Pymetrozine			0.43							0.43
Pyrethrins	0.04	0.02	0.15	0.03	0.02			0.07	0.57	0.89
Spinosad	0.06	7.57	1.55							9.17
Tebufenpyrad			0.11		0.32	0.04		0.03		0.50
Thiacloprid		0.52	1.74		0.57	0.18	8.65	0.23	1.07	12.95
All Insecticides	0.58	21.65	14.95	0.08	5.07	0.44	9.16	1.14	1.83	54.89
<i>Molluscicides</i>										
Metaldehyde		0.05	0.34							0.39
Methiocarb	0.17									0.17
All molluscicides	0.17	0.05	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.55
<i>Biological controls</i>										
Bacillus subtilis										
All biological control										
All pesticides	14.08	530.79	169.76	3.63	65.51	1.99	138.11	5.82	15.19	944.88

Table 8: The twenty active ingredients most extensively used on soft fruit crops in Ireland in 2014, ranked by area treated (spray-hectares).

No.	Active ingredient	Treated area (sp ha)
1	Myclobutanil	266.48
2	Pyraclostrobin	204.04
3	Boscalid	204.04
4	Fenhexamid	165.94
5	Cyprodinil	162.75
6	Fludioxonil	162.75
7	Glufosinate-ammonium	156.46
8	Kresoxim-methyl	140.87
9	Azoxystrobin	135.96
10	Spinosad	126.26
11	Iprodione	116.57
12	Thiacloprid	105.87
13	Abamectin	89.20
14	Quinoxifen	74.62
15	Mepanipyrim	72.08
16	Lambda-cyhalothrin	72.06
17	Bupirimate	69.74
18	Bacillus subtilis	59.05
19	Bifenazate	50.61
20	Sulphur	47.84

Table 9: The twenty active ingredients most extensively used on soft fruit crops in Ireland in 2014, ranked by weight (kilograms).

No.	Active ingredient	Quantity (kgs)
1	Sulphur	193.88
2	Glufosinate-ammonium	107.72
3	Fenhexamid	87.69
4	Boscalid	68.46
5	Iprodione	58.00
6	Cyprodinil	48.57
7	Dimethomorph	42.40
8	Azoxystrobin	34.48
9	Fludioxonil	32.38
10	Pyrimethanil	30.69
11	Mepanipyrim	30.18
12	Myclobutanil	25.03
13	Glyphosate	22.57
14	Pendimethalin	18.53
15	Bupirimate	17.88
16	Pyraclostrobin	17.17
17	Kresoxim-methyl	16.93
18	Thiacloprid	12.94
19	Pirimicarb	12.32
20	Propyzamide	12.09

Table 10: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for non-protected strawberries, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Strawberries:	Fungicides			
Not protected	Azoxystrobin	0.05	0.21	0.11
	Boscalid	0.46	1.47	1.37
	Bupirimate	0.03	0.11	0.11
	Cyprodinil	0.30	1.63	0.87
	Dimethomorph	0.46	0.34	0.34
	Fenhexamid	2.18	3.13	2.03
	Fludioxonil	0.20	1.63	0.87
	Iprodione	2.51	3.34	1.08
	Mepanipyrim	0.25	0.69	0.34
	Myclobutanil	0.35	2.61	0.87
	Pyraclostrobin	0.11	1.47	1.37
	Pyrimethanil	0.17	0.21	0.11
	Quinoxyfen	0.11	0.66	0.45
	Herbicides			
	Diquat	0.13	0.92	0.92
	Fluazifop-P-butyl	0.01	0.06	0.06
	Glufosinate-ammonium	0.76	0.76	0.76
	Glyphosate	2.64	1.83	1.83
	Napropamide	1.16	1.83	0.92
	Pendimethalin	1.47	1.83	0.92
	Insecticides			
	Pirimicarb	0.49	1.87	1.11
	Pyrethrins	0.04	0.69	0.34
	Spinosad	0.06	0.76	0.76
	Molluscicides			
	Methiocarb	0.17	1.83	1.83

Table 11: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for protected strawberries, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Strawberries:	Fungicides			
Protected	Azoxystrobin	24.90	97.98	27.12
	Boscalid	20.52	74.88	36.23
	Bupirimate	6.46	25.91	12.18
	Cyprodinil	10.01	50.36	26.30
	Dimethomorph	33.92	22.61	22.61
	Epoxiconazole	0.83	5.08	4.46
	Fenhexamid	58.76	116.33	35.15
	Fludioxonil	6.68	50.36	26.30
	Iprodione	32.12	77.48	28.53
	Kresoxim-methyl	7.08	46.89	24.09
	Mepanipyrim	20.40	49.20	26.29
	Myclobutanil	15.92	171.30	36.76
	Pyraclostrobin	5.15	74.88	36.23
	Pyrimethanil	4.71	5.90	4.00
	Quinoxifen	6.90	52.93	27.23
	Sulphur	186.55	46.92	23.35
	Herbicides			
	Diquat	0.34	0.62	0.62
	Glufosinate-ammonium	67.84	113.06	56.53
	Glyphosate	0.03	0.05	0.05
	Insecticides			
	Abamectin	0.71	77.29	31.23
	Bifenazate	4.72	48.90	25.66
	Chlorpyrifos	4.66	9.70	9.70
	Deltamethrin	0.01	1.10	1.10
	Etoxazole	0.09	1.20	1.20
	Pirimicarb	3.36	7.33	2.77
	Pyrethrins	0.02	0.43	0.43
	Spinosad	7.57	104.80	29.49
	Thiacloprid	0.52	2.77	1.44
	Molluscicides			
	Metaldehyde	0.05	0.23	0.23
	Biological Control			
	Bacillus subtilis	.	24.03	23.65

Table 12: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for semi-protected strawberries, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Starwberries:	Fungicides			
Semi-protected	Azoxystrobin	7.37	29.18	16.72
	Boscalid	14.07	44.04	23.37
	Bupirimate	10.41	40.93	15.67
	Cyprodinil	4.57	20.54	11.92
	Dimethomorph	8.02	12.49	7.14
	Epoxiconazole	4.52	35.07	3.84
	Fenhexamid	23.90	41.41	21.01
	Fenpropimorph	1.51	10.09	2.28
	Fludioxonil	3.04	20.54	11.92
	Iprodione	22.11	33.67	19.06
	Kresoxim-methyl	1.70	12.73	4.72
	Mepanipyrim	9.54	22.19	14.75
	Myclobutanil	7.92	84.94	23.93
	Pyraclostrobin	3.52	44.04	23.37
	Pyrimethanil	16.99	25.60	10.61
	Quinoxyfen	2.74	21.03	16.45
	Sulphur	7.33	0.92	0.23
	Herbicides			
	Diquat	0.19	1.03	1.03
	Glufosinate-ammonium	5.00	5.27	4.93
	Insecticides			
	Abamectin	0.10	10.57	7.70
	Bifenazate	0.20	1.72	1.04
	Chlorpyrifos	2.88	5.31	5.31
	Etoxazole	0.03	0.51	0.51
	Pirimicarb	7.79	31.50	14.86
	Pymetrozine	0.43	2.14	2.14
	Pyrethrins	0.15	2.90	2.90
	Spinosad	1.54	20.70	14.85
	Tebufenpyrad	0.11	1.43	1.43
	Thiacloprid	1.74	14.03	7.61
	Molluscicides			
	Metaldehyde	0.34	1.72	1.72
	Biological Control			
	Bacillus subtilis	.	13.56	4.69

Table 13: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for non-protected raspberries, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Raspberries: Not protected	Fungicides			
	Azoxystrobin	0.12	0.48	0.48
	Cyprodinil	0.63	1.53	0.77
	Fenhexamid	1.11	1.65	0.71
	Fludioxonil	0.42	1.53	0.77
	Iprodione	1.05	1.40	0.79
	Herbicides			
	Fluazifop-P-butyl	0.23	1.22	1.22
	Insecticides			
	Chlorpyrifos	0.05	0.23	0.23
	Pyrethrins	0.03	0.48	0.48

Table 14: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for protected raspberries, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Raspberries: Protected	Fungicides			
	Azoxystrobin	1.19	4.71	4.48
	Cyprodinil	1.73	4.60	4.49
	Fenhexamid	0.14	0.29	0.16
	Fludioxonil	1.15	4.60	4.49
	Iprodione	0.02	0.06	0.06
	Myclobutanil	0.60	4.32	4.32
	Pyrimethanil	0.03	0.03	0.03
	Herbicides			
	Glufosinate-ammonium	30.21	30.21	10.07
	Pendimethalin	13.29	10.07	10.07
	Propyzamide	12.09	10.07	10.07
	Insecticides			
	Chlorpyrifos	4.14	8.63	4.32
	Pirimicarb	0.02	0.06	0.06
	Pyrethrins	0.02	0.27	0.16
	Tebufenpyrad	0.32	4.32	4.32
	Thiacloprid	0.57	4.49	4.35
	Biological Control			
	Bacillus subtilis	.	0.65	0.16

Table 15: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for semi-protected raspberries, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Raspberries:	Fungicides			
Semi-protected	Azoxystrobin	0.40	1.58	0.79
	Boscalid	0.10	0.42	0.21
	Cyprodinil	0.24	0.64	0.64
	Epoxiconazole	0.04	0.28	0.28
	Fenhexamid	0.10	0.13	0.13
	Fludioxonil	0.16	0.64	0.64
	Pyraclostrobin	0.03	0.42	0.21
	Pyrimethanil	0.37	0.79	0.79
	Herbicides			
	Glufosinate-ammonium	0.13	0.13	0.13
	Insecticides			
	Abamectin	0.01	1.30	0.79
	Chlorpyrifos	0.09	0.13	0.13
	Pirimicarb	0.12	0.42	0.21
	Tebufenpyrad	0.04	0.51	0.51
	Thiacloprid	0.18	1.50	1.00
	Biological Control			
	Bacillus subtilis	.	5.63	1.00

Table 16: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for non-protected blackcurrants, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active
		Active Ingredient	Active Ingredient	Ingredient
		Total	Total	Total
Blackcurrants: Not Protected	Fungicides			
	Boscalid	32.33	80.74	79.12
	Cyprodinil	30.27	80.73	79.12
	Fenhexamid	0.71	1.43	0.48
	Fludioxonil	20.18	80.73	79.12
	Kresoxim-methyl	8.14	81.21	79.12
	Myclobutanil	0.23	3.22	3.22
	Pyraclostrobin	8.11	80.74	79.12
	Pyrimethanil	3.86	4.83	3.22
	Herbicides			
	Diquat	0.77	3.84	3.84
	Flazasulfuron	0.68	18.01	18.01
	Fluazifop-P-butyl	0.01	0.06	0.06
	Glyphosate	19.88	25.54	25.54
	Pendimethalin	3.77	3.36	3.36
	Insecticides			
	Lambda-cyhalothrin	0.32	72.06	72.06
	Pirimicarb	0.20	1.43	0.48
	Thiacloprid	8.65	72.06	72.06

Table 17: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for non-protected other soft fruit crops, 2014.

Crop	Active Substance	Quantity (kg) of Active Ingredient	Spray area (spha) of Active Ingredient	Basic area (ha) of Active Ingredient
		Total	Total	Total
Other crops:	Fungicides			
Not protected	Azoxystrobin	0.10	0.40	0.40
	Bupirimate	0.95	2.70	0.90
	Cyprodinil	0.34	1.40	1.40
	Fenhexamid	0.75	1.50	0.75
	Fludioxonil	0.23	1.40	1.40
	Iprodione	0.09	0.48	0.48
	Pyrimethanil	0.96	1.40	1.40
	Herbicides			
	Glufosinate-ammonium	1.25	2.68	2.68
	Glyphosate	0.02	0.06	0.06
	Insecticides			
	Chlorpyrifos	0.65	0.90	0.90
	Pirimicarb	0.17	1.19	0.89
	Pyrethrins	0.07	1.30	0.85
	Tebufenpyrad	0.03	0.40	0.40
	Thiacloprid	0.23	1.91	1.51
	Biological Control			
	Bacillus subtilis	.	1.40	1.40

Table 18: Estimated quantity (kg), spray area (spha) and basic area (ha) of active substance for protected & semi protected other soft fruit crops, 2014.

Crop	Active Substance	Quantity (kg) of	Spray area (spha) of	Basic area (ha) of Active	
		Active Ingredient	Active Ingredient	Ingredient	
		Total	Total	Total	
Other crops:	Fungicides				
Semi protected & protected	Azoxystrobin	0.35	1.42	0.66	
	Boscalid	0.98	2.48	2.28	
	Bupirimate	0.04	0.10	0.10	
	Cyprodinil	0.49	1.32	0.68	
	Epoxiconazole	0.02	0.18	0.04	
	Fenhexamid	0.04	0.08	0.08	
	Fenpropimorph	4.62	6.80	2.33	
	Fludioxonil	0.33	1.32	0.68	
	Iprodione	0.10	0.13	0.04	
	Kresoxim-methyl	0.01	0.04	0.04	
	Myclobutanil	0.01	0.10	0.10	
	Pyraclostrobin	0.25	2.48	2.28	
	Pyrimethanil	3.60	4.51	2.33	
		Herbicides			
		Glufosinate-ammonium	2.54	4.34	4.04
	Insecticides				
	Abamectin	0.00	0.04	0.04	
	Pirimicarb	0.19	0.67	0.33	
	Pyrethrins	0.57	10.30	2.90	
	Thiacloprid	1.07	9.11	3.20	
	Biological Control				
	Bacillus subtilis	.	13.78	2.95	

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