

**PESTICIDE USAGE IN SCOTLAND**

***ARABLE CROPS 2002  
(Revision 2)***

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### Reason for Report Revision 1 (2009)

This report has been reissued to correct inaccuracies in active ingredient application area data that were overestimated in the original report.

This issue only affects a limited number of active ingredients in relation to active ingredient application area. All formulation data and active ingredient weight data are unaffected. The amended tables are:

- Table 23 – Cereal fungicide active ingredients
- Table 24 – Cereal herbicide and growth regulator active ingredients
- Table 26 – Oilseed rape molluscicide active ingredients
- Table 27 – Oilseed rape fungicide active ingredients
- Table 28 – Oilseed rape herbicide active ingredients
- Table 31 – Potato fungicide active ingredients
- Table 34 – Set aside molluscicide active ingredients
- Table 36 – Set aside herbicide active ingredients
- Table 37 – Principal active ingredients
- Tables 39-42 – Comparisons with previous years

Text relating to the data contained in these tables has also been revised.

### Reason for Report Revision 2 (2014)

This report has been revised to correct inaccuracies in Table 43 which shows the sampled area in each region and size group.

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This report presents information from a survey of pesticide usage on arable crops in Scotland during the 2001/2002 growing season. The data have been raised to give estimates of national pesticide usage.

Compared with the previous survey in 2000, the total area of arable crops, excluding land for set aside, declined by 2% to 511,466 hectares. There were decreases in all the main crops surveyed except spring barley, spring oats and potatoes grown for ware.

When measured by area of active ingredients, overall insecticide usage declined by 5% compared with 2000, slightly more than the fall in the total area of crops grown. As recorded in previous surveys, their usage, compared with fungicides and herbicides, was low. Pyrethroids were again the most popular insecticide type. The carbamate pirimicarb, used predominantly on potatoes, remained the principal insecticide and in 2002 was applied to over 54,000 hectares.

There was an 18% increase in molluscicide use. Metaldehyde, applied to almost 34,500 hectares, remained the most widely used molluscicide.

Fungicide usage, as measured by total area of active ingredients, increased by 6%. Fenpropimorph, applied to around 340,000 hectares, predominantly to cereals, remained the most commonly used fungicide.

When measured by area of active ingredients, herbicide usage increased by 2%. Mecoprop-P, applied to over 213,000 hectares, solely to cereals, remained the principal herbicide.

## ● ***INTRODUCTION***

This is the eleventh survey of pesticide usage on arable crops in Scotland, the previous surveys being in 1974, 1977, 1982, 1987, 1988, 1990, 1992, 1994, 1996, 1998 and 2000<sup>1-11</sup>, (survey report 74 covered potatoes only) and is part of a continuing program of post registration surveillance of pesticides. The survey covered cereals, oilseeds, potatoes, peas, beans and set aside land.

The methodology employed was broadly similar to that described in previous surveys except for minor differences which are detailed in the 'Method'.

## ● ***DEFINITIONS AND NOTES***

Basic area is the planted area of crop which was treated with a given pesticide or pesticide group, irrespective of the number of times it was applied to that area. Basic areas are not presented anywhere in the report, but their values are used to calculate the percentage of crop treated with a given pesticide or pesticide group.

Area treated (or hectares treated) is the basic area of a crop treated with a given pesticide multiplied by the number of treatments that area received. These terms are synonymous with "spray area" and "spray hectare" which have appeared in previous reports. The new terms are believed to more appropriate where pelleted or granular treatments are applied.

In this report the term 'formulation(s)' is used to describe the pesticide active ingredient or mixture of active ingredients in a product(s).

The reasons for the uses of pesticides reported in the text are those given by growers and may sometimes be inappropriate.

It should be borne in mind that some of the herbicides may not have been applied directly to the crop itself but either as land preparation treatments prior to sowing/planting the crop, to control weeds at the field margins or to destroy the crop. In addition, some pesticides may have been applied to failed crops prior to being resown with a different crop, and their usage may appear to be inappropriate.

Usage of sulphur on oilseed rape has been recorded as though it were a pesticide. However, the predominant reason for its use is as a nutrient rather than to control disease.

Due to rounding, there may be slight differences in totals both within and between tables.

Data from the 2000 survey are provided for comparison purposes in some of the tables, although it should be borne in mind that there may be minor differences in the range of crops surveyed, together with changes in areas of each of the crops grown.



Using the June 2001 Agricultural Census<sup>12</sup> a sample was drawn representing the whole of Scotland and was selected from holdings growing any of the combinable crops and/or potatoes.

As in previous surveys of this type, the country was divided into 11 land-use regions<sup>13</sup> (Fig 1). Holdings were stratified by land-use region and by size group (based on the total area of arable crops grown, excluding set aside land). Sampling fractions within both regions and size groups were based on the areas of the relevant crops grown rather than number of holdings, so that smaller size groups would not dominate the sample. Slight adjustments were made to the numbers of holdings sampled in each of the size groups to improve the precision of the component of estimates from the smaller size groups.

The survey period was from the end of the 2001 harvest to the end of the 2002 harvest. As well as recording treatments applied directly to the crop, data were also collected on land preparation treatments prior to sowing/planting the crop.

With a few exceptions, each grower was visited by a surveyor, following an introductory letter and telephone call. A small number of growers in remote areas had to be interviewed by telephone, again by prior arrangement. When necessary, data were also collected from consultant agronomists, contractors and seed merchants. In all, information was obtained from 324 holdings. Details of the numbers of holdings visited and their distribution are given in Table 2 and the areas of crops surveyed are shown in Table 43.

For all crops, sample data were raised to give estimates of national pesticide usage using raising factors (Table 45). These were based on the areas growing arable crops in the 2002 Agricultural Census<sup>14</sup> within regions and size groups (Table 44). Adjustments (Table 46) were made for each crop, including those grown on set aside land, within each region by applying the raising factors (Table 45) to the sample area of each crop grown and comparing this with the area from the 2002 Agricultural Census. A second adjustment was made for crops where no holdings were sampled in one or more regions (Table 47). In Tables 39, 40 and 42 only, estimates of pesticide usage were further adjusted to take into account those pesticide treatments which were known to have been applied, but where the details were unspecified.

The area of winter barley grown in 2002 was 61,234 hectares, marginally less than that recorded in 2000.

### ● *Seed treatments (Table 5)*

Ninety-six percent of the crop area was treated with a seed treatment, compared with 93% in 2000. As in the previous two surveys, the formulation comprising tebuconazole/triazoxide was the most widely used, and had been applied to 65% of winter barley seed. As in 2000, guazatine, in formulation with imazalil (12%), or alone (1%), was also popular.

### ● *Insecticides and molluscicides (Tables 6, 22)*

The proportion of the crop area receiving an insecticide was 29%, similar to that recorded in the previous survey.

As in all surveys since 1990, cypermethrin was the most widely used insecticide, applied to 6,698 hectares, predominantly for aphid control to prevent transmission of barley yellow dwarf virus (BYDV). Usage of esfenvalerate increased compared with 2000, and in the present survey was applied to 4,324 hectares.

Only 4% of the area of the crop was treated with molluscicides, similar to that recorded in 2000. Metaldehyde remained the most popular molluscicide.

### ● *Fungicides (Tables 7, 23)*

Ninety-six percent of the crop area was treated with fungicides, slightly less than the 99% recorded in 2000. The main specified reason for fungicide use in 2002 was for the control of rhynchosporium.

As in many recent surveys, fenpropimorph was the most popular fungicide, and was applied to 70,416 hectares accounting for 20% of the total area of fungicide active ingredients. Flusilazole (13%), epoxiconazole and cyprodinil (each 10%) were also widely used.

### ● *Herbicides and growth regulators (Tables 8, 24)*

The proportion of the crop area treated with herbicides was 97%, similar to usage in 2000, and again, the main specified reason provided was for the control of annual broad-leaved weeds.

Herbicide usage was similar to that recorded in the previous two surveys. Isoproturon, applied to 43,652 hectares, accounting for 23% of the total herbicide active ingredients, and diflufenican, applied to 26,716 hectares (14%), remained the most popular herbicides. Pendimethalin, mecoprop-P, and glyphosate were also widely used.

Growth regulator usage was similar to that recorded in the previous survey, and in 2002, 85% of the crop area was treated. Chlormequat remained the most popular growth regulator, and was applied to a total of 57,462 hectares.

The area of spring barley grown in 2002 was 263,914 hectares, a 4% increase compared with the previous survey.

● ***Seed treatments (Table 5)***

In 2002, 93% of the seed was treated, compared with 96% in the previous survey. As in the previous two surveys, the formulation comprising tebuconazole/triazoxide was the most widely used, and had been applied to 62% of spring barley seed. Also popular was guazatine, applied as a single active ingredient to 15%, and in formulation with imazalil to 2%.

● ***Insecticides and molluscicides (Tables 6, 22)***

Only 2% of the crop area was treated with an insecticide, compared with 6% in the previous survey.

As in the previous three surveys, chlorpyrifos was the most popular insecticide, and in 2002, was applied to 5,898 hectares for leatherjacket control.

No molluscicides were recorded on spring barley crops in 2002. Small areas had been treated with thiodicarb and metaldehyde in the previous survey.

● ***Fungicides (Tables 7, 23)***

The proportion of the crop area treated with fungicide was 90%, slightly greater than the 85% recorded in the previous survey. Control of mildew and rhynchosporium were the most commonly given reasons for the use of fungicides.

Fenpropimorph remained the principal fungicide on spring barley, and in 2002, was applied to 198,055 hectares and accounted for 23% of all fungicide active ingredients. Flusilazole and epoxiconazole were also popular. Usage of the strobilurin, trifloxystrobin, has declined compared with the previous survey.

● ***Herbicides and growth regulators (Tables 8, 24)***

As in previous surveys, nearly all (97%) of the crop area was treated with herbicides. Metsulfuron-methyl was the principal herbicide, and in 2002, was applied to 160,253 hectares, accounting for 19% of all herbicide active ingredients. Thifensulfuron-methyl and mecoprop-P (both 17%) were also popular. In 2000, the combined usage of mecoprop-P and mecoprop had been the most widely used herbicides, but in 2002, no mecoprop had been recorded.

In the present survey, 10% of the crop was treated with growth regulators, compared with 7% in 2000. Chlormequat, applied to 21,283 hectares, replaced 2-chloroethylphosphonic acid as the most popular growth regulator.

## WINTER WHEAT

Compared with the previous survey, the area of winter wheat grown in 2002 had fallen by 11% to 96,350 hectares.

### ● *Seed treatments (Table 5)*

Ninety-six percent of the seed was treated with a pesticide, similar to usage recorded in 2000. The formulation comprising bitertanol/fuberidazole, applied to 35% of winter wheat seed replaced guazatine, both alone (25%) and in formulation with triticonazole (5%), as the main seed treatment.

### ● *Insecticides and molluscicides (Tables 6, 22)*

The proportion of the crop area treated with insecticides was 36%, slightly higher than the 27% recorded in 2000. Most treatments were again mainly for the control of aphids to prevent transmission of BYDV.

Similar to the results of the previous three surveys, cypermethrin was the principal insecticide, and in 2002, was applied to 12,408 hectares. Esfenvalerate, lambda-cyhalothrin, and pirimicarb were also popular.

Twenty-six percent of the crop area was treated with molluscicides, slightly more than the 19% recorded in 2000. Metaldehyde, applied to 16,996 hectares and methiocarb to 9,177 hectares, were the most widely used molluscicides. Usage of thiodicarb, which had been the most popular in the previous survey, declined in 2002.

### ● *Fungicides (Tables 7, 23)*

As in the previous surveys, fungicides were applied to the entire crop. In 2002, septoria and mildew were the two most commonly stated reasons for usage of fungicides.

Epoxiconazole was again the most widely used fungicide and was applied to 97,793 hectares, accounting for 13% of the total area of fungicide active ingredients. Fenpropimorph, azoxystrobin, tebuconazole and kresoxim-methyl were also popular.

### ● *Herbicides and growth regulators (Tables 8, 24)*

Ninety-seven percent of the crop area was treated with a herbicide, similar to that recorded in 2000. As in previous surveys, the control of annual broad-leaved weeds was the main reason given for herbicide use.

Isoproturon continued to be the principal herbicide, and in 2002 was applied to 64,892 hectares, accounting for 21% of the total area of herbicide active ingredients. Diflufenican and mecoprop-P were also widely used.

The proportion of the crop treated with growth regulators was also 97%, the same as that in the 2000 survey. Chlormequat was again the main growth regulator used, and in 2002 was applied to 135,098 hectares.

## ● ***SPRING WHEAT***

This crop is not recorded separately in the Agricultural Census, but it was estimated that 842 hectares were grown in Scotland in 2002, compared with 1,076 hectares in the previous survey. Estimates of pesticide usage are presented in Tables 5-8 and 21-24.

## ● ***WINTER OATS***

The area of winter oats grown in 2002 was 5,430 hectares, a 19% decline compared with 2000.

### ● ***Seed treatments (Table 5)***

The proportion of the seed treated with a pesticide was 88%, slightly less than the 95% recorded in 2000. Guazatine was by far the most commonly used seed treatment and had been applied to 63% of the area sown.

### ● ***Insecticides and molluscicides (Tables 6, 22)***

The area of the crop treated with insecticides was 28%, considerably more than the 4% recorded in 2000.

Only two insecticides were encountered in 2002, cypermethrin, applied to 1,295 hectares and esfenvalerate, to 216 hectares both for aphid control. Chlorpyrifos, which had been the only insecticide recorded in the previous survey, was not encountered in 2002.

Only 9% of the crop area was treated with a molluscicide, thiodicarb. None had been recorded in 2000.

### ● ***Fungicides (Tables 7, 23)***

Eighty percent of the crop area was treated with fungicides, compared with 73% in 2000.

As in previous surveys, fenpropimorph was the most widely used fungicide, and was applied to 4,031 hectares, accounting for 27% of the total area of fungicide active ingredients. Quinoxifen, epoxiconazole and kresoxim-methyl were also popular.

### ● ***Herbicides and growth regulators (Tables 8, 24)***

In the present survey, the entire crop received a herbicide treatment, slightly more than the 95% recorded in 2000.

Metsulfuron-methyl, applied to 3,098 hectares, replaced mecoprop-P (2,266 hectares) as the principal herbicide.

The proportion of the crop area treated with growth regulators was 88%, less than the 95% recorded in 2000. Trinexapac-ethyl remained the most widely used growth regulator, and in 2002, was applied to 3,294 hectares. Chlormequat, applied to 2,915 hectares, was also popular.

The area of the crop grown in 2002 was 16,477 hectares, an 8% increase on that grown in 2000.

### ● ***Seed treatments (Table 5)***

The proportion of the seed treated with a pesticide in 2002 was 92%, slightly higher than the 83% reported in the previous survey. Guazatine, applied to 29% of the seed, replaced the formulation comprising bitertanol/fuberidazole (26%) as the most popular seed treatment.

### ● ***Insecticides and molluscicides (Tables 6, 22)***

Similar to usage recorded in the previous survey, only a small proportion of the crop area, 5%, was treated with insecticides in 2002.

Only three insecticides were encountered in 2002: zeta-cypermethrin, chlorpyrifos and lambda-cyhalothrin. Pirimicarb, which had been the most popular insecticide in 2000, was not recorded in the present survey.

As in the previous surveys, no molluscicide usage was recorded.

### ● ***Fungicides (Tables 7, 23)***

The proportion of the crop area treated with fungicides was 68%, slightly less than in the previous survey. Mildew control was again the main specified reason provided for use of fungicides.

Fenpropimorph remained the principal fungicide, applied to 8,235 hectares, and accounting for 26% of the total area of fungicide active ingredients. Quinoxifen, epoxiconazole and kresoxim-methyl were also widely used.

### ● ***Herbicides and growth regulators (Tables 8, 24)***

In the present survey, 85% of the crop area was treated with a herbicide, compared with 76% in 2000.

As in the previous survey, mecoprop-P and metsulfuron-methyl were the most widely used herbicides and were applied to 7,577 and 7,307 hectares respectively.

Around half the area of the crop was treated with growth regulators, similar to that recorded in the previous survey. Chlormequat, applied to 7,349 hectares, remained the most widely used growth regulator.

Compared with 2000, the area grown fell by 6% to 26,433 hectares.

● ***Seed treatments (Table 9)***

In 2000, it was estimated that all seed had been treated (although there was no information available on 15% of the seed), compared with 98% in the previous survey. Iprodione, applied to almost half the seed, remained the most commonly used treatment. Thiram, applied to 38% of seed was also popular.

● ***Insecticides and molluscicides (Tables 10, 26)***

The proportion of the crop area treated with insecticides was 67%, higher than the 48% recorded in 2000. Aphids replaced pollen beetle as the principal specified reason for use of insecticides.

Lambda-cyhalothrin, applied to 6,849 hectares, replaced alpha-cypermethrin (4,891 hectares) as the most widely used insecticide. Cypermethrin, applied to 5,293 hectares was also popular.

Thirty-four percent of the crop was treated with a molluscicide, similar to usage recorded in 2000. As in the previous surveys, metaldehyde and methiocarb were the most widely used molluscicides.

● ***Fungicides (Tables 11, 27)***

As in 2000, nearly all the crop area was treated with fungicides, and again, light leaf spot control was the main specified reason given for use of fungicides.

Carbendazim remained the principal fungicide, and in 2002 was applied to 29,231 hectares. Usage of vinclozolin, on 16,123 hectares of winter oilseed rape, increased compared with the previous survey.

● ***Herbicides and growth regulators (Tables 12, 28)***

Overall, usage was similar to that recorded in the previous survey with nearly all (98%) of the crop area being treated with a herbicide.

Metazachlor remained the most popular herbicide and was applied to 19,566 hectares. Glyphosate, (7,742 hectares), used solely for desiccation pre-harvest was also widely used.

Only 36 hectares were treated with a growth regulator, chlormequat, in 2002. This shows a considerable decrease compared with 2000, when 17% of the crop area had been treated.

## ● **SPRING OILSEED RAPE**

The area grown in 2002 was only 4,469 hectares, slightly more than half that recorded in the previous survey.

### ● ***Seed treatments (Table 9)***

As in 2000, it was estimated that all seed had been treated, although there was a significant proportion, 41%, where there was no information available. Thiram, applied to 57% of the seed, remained the most popular treatment.

### ● ***Insecticides and molluscicides (Tables 10, 26)***

The proportion of the crop area treated with insecticides was 80%, considerably higher than the 38% recorded in 2000. The control of pollen beetle was again the main specified reason for use of insecticides.

As in the previous survey, cypermethrin and alpha-cypermethrin were the most widely used insecticides and were applied to 1,447 and 1,326 hectares respectively.

Ten percent of the crop area was treated with the molluscicide, thiodicarb. In the previous survey, only very small areas had been treated with metaldehyde.

### ● ***Fungicides (Tables 11, 27)***

Fifty-seven percent of the crop area was treated with fungicides, slightly higher than the 40% recorded in 2000.

Metconazole, applied to 1,338 hectares, replaced sulphur as the most widely used fungicide.

### ● ***Herbicides and growth regulators (Tables 12, 28)***

Only 41% of the crop area received a herbicide in 2002, considerably less than the 83% recorded in the previous survey.

Glyphosate, predominantly for desiccation pre-harvest, and applied to 1,185 hectares, replaced metazachlor as the most widely used herbicide.

As in the previous two surveys, no growth regulators were recorded.



Compared with the previous survey, the area grown showed a small fall of 3% to 13,787 hectares.

● ***Seed treatments (Table 13)***

The proportion of the seed treated with pre-planting fungicides was 91%, an increase in use compared with 79% recorded in 2000.

The formulation comprising imazalil/pencycuron, applied to 49% of the seed, replaced imazalil alone (26%) as the commonly used treatment. Pencycuron alone was also widely used (25%).

● ***Insecticides and molluscicides (Tables 14, 30)***

The proportion of the crop area treated with insecticides was 91%, similar to that recorded in the previous survey. Pirimicarb remained the principal insecticide and was applied to a total 34,531 hectares. Deltamethrin, to 21,390 hectares, and lambda-cyhalothrin were also popular.

Thirty percent of the crop area was treated with molluscicides, compared with only 13% in 2000. Methiocarb and metaldehyde were the only molluscicides recorded. Thiodicarb, which had been the most commonly used molluscicide in the previous survey, was not encountered on this crop in 2002.

● ***Fungicides (Tables 15, 31)***

As in the two previous surveys, the entire crop received one or more fungicides.

Mancozeb, applied to 65,168 hectares and accounting for 36% of the total area of fungicide active ingredients, remained the main fungicide used on seed potatoes, followed by cymoxanil, to 44,389 hectares (25%). Usage of fluazinam, applied to only 14,087 hectares, declined compared with the previous survey when it had been the most popular formulation employed.

● ***Herbicides and growth regulators (Tables 16, 32)***

The proportion of the crop area treated with herbicides was 95%, similar to that recorded in 2000.

Paraquat and linuron remained the most commonly used herbicides for general weed control, and were applied to 13,058 and 9,632 hectares respectively. Diquat, applied to 9,011 hectares was also widely use, both as a herbicide and as a pre-harvest desiccant. As in previous surveys, sulphuric acid was the most commonly used desiccant, applied to 21,945 hectares.

As in previous surveys, no growth regulators were recorded.

## ● **EARLY POTATOES**

The area of the crop grown in 2002 was 951 hectares, compared with 767 hectares in the previous survey. Pesticide usage data are presented in all the relevant tables.

## ● **WARE POTATOES**

The area of the crop grown in 2002 was 15,465 hectares, a 6% increase compared with 2000.

### ● **Seed treatments (Table 13)**

In 2002, 85% of the seed was treated with pre-planting fungicides, compared with 79% in the previous survey.

As in previous surveys, the formulation comprising imazalil/pencycuron was the main treatment used on ware potatoes, and in 2002, was applied to 46% of the seed. Both pencycuron and imazalil alone were also widely used and were applied to 33% and 15% of the seed respectively.

### ● **Insecticides and molluscicides (Tables 14, 30)**

Just over half the crop area was treated with insecticides, similar to usage in 2000.

As in the previous two surveys, pirimicarb applied to 13,842 hectares, and lambda-cyhalothrin, to 10,706 hectares, were the most popular insecticides.

Forty-four percent of the crop area was treated with molluscicides, slightly more than in 2000. Methiocarb, applied to 9,139 hectares, replaced thiodicarb (7,762 hectares) as the most popular molluscicide.

### ● **Fungicides (Tables 15, 31)**

As in recent surveys, nearly all the crop area (98%) was treated with fungicides.

Mancozeb, applied to 79,792 hectares, and cymoxanil, to 66,747 hectares, were the main fungicides used. Usage of fluazinam, applied to 17,947 hectares, declined compared with the area treated in 2000.

### ● **Herbicides and growth regulators (Tables 16, 32)**

As in the previous survey, nearly all (97%) the crop area received a herbicide.

Paraquat, applied to 15,064 hectares, and linuron, to 10,259 hectares, remained the most popular herbicides for general weed control. Sulphuric acid was again the principal desiccant, applied to 24,566 hectares, whilst diquat, applied to 15,639 hectares, used both as a herbicide and as a desiccant was also widely used.

The growth regulator, maleic hydrazide, was applied to 1,333 hectares, similar to usage in 2000.

The areas of these crops are recorded in the Agricultural Census, but the areas grown are considered too small to warrant inclusion of data in the tables. Estimates of pesticide usage of all the active ingredients applied are used to calculate the Survey's principal active ingredients (Tables 37 & 38).

Pesticides recorded for each crop are provided below.

● ***Peas for combining***

The area grown in 2002 was only 1,451 hectares, a drop of 11% compared with the previous survey.

Seed treatments : cymoxanil/fludioxonil/metalaxyl-M, thiram.  
 Fungicides : azoxystrobin, sulphur.  
 Herbicides : diquat, pendimethalin, terbuthylazine/terbutryn.

● ***Field beans***

Compared with 2000, the area almost doubled to 2,116 hectares.

Insecticides : cypermethrin, lambda-cyhalothrin, pirimicarb.  
 Fungicides : chlorothalonil, chlorothalonil/metalaxyl, mancozeb/metalaxyl-M, sulphur, tebuconazole.  
 Herbicides : cyanazine, cycloxydim, diquat, glyphosate, MCPA/MCPB, paraquat, simazine, terbuthylazine/terbutryn.

● ***Triticale***

The area grown in 2002 was 1,265 hectares, an 18% decline compared with 2000.

Seed treatments : bitertanol/fuberidazole, guazatine.  
 Fungicides : epoxiconazole.  
 Herbicides : mecoprop-P, metsulfuron-methyl, thifensulfuron-methyl/tribenuron-methyl.  
 Growth regulators: : 2-chloroethylphosphonic acid/mepiquat chloride, chlormequat.

● ***Linseed***

Only 861 hectares were grown in 2002, less than a third of that recorded in the previous survey.

No pesticides were encountered in 2002.

## ● **SET ASIDE LAND**

The total area of land classed as set aside in 2002 was 85,580 hectares, a 10% increase compared with the previous survey.

### ● ***Natural regeneration (Tables 17-20, 33-36)***

The estimated area of this category of set aside land in 2002 was 47,129 hectares, a 35% increase compared with the previous survey.

Small areas (100 hectares) were treated with the molluscicide methiocarb.

Only 24% of the total area was treated with a herbicide, compared with 36% in 2000. Glyphosate remained by far the most commonly used herbicide. The only other herbicide encountered was MCPA, applied to only a small area.

### ● ***Grass (Tables 17-20, 33-36)***

The area of grass was 32,122 hectares, slightly less than in 2000.

Only 5% of the crop area was treated with herbicides, compared with 8% in the previous survey. As in the previous three surveys, MCPA was the most popular herbicide, accounting for 14% of the total area of herbicide active ingredients. This figure is lower than that recorded in recent surveys as a wider range of herbicides was encountered in 2002.

### ● ***Industrial oilseed rape (Tables 17-20, 33-36)***

The estimated area grown in 2002 was 4,031 hectares, slightly less than in the previous survey.

The crop area treated with insecticides was 56%, slightly less than in 2000. Lambda-cyhalothrin, applied to 957 hectares, was the main insecticide used. Deltamethrin, which had been the most popular insecticide in 2000, was not encountered in the present survey.

Only 62% of the crop area was treated with fungicides, compared with 89% in 2000. As in the previous three surveys, carbendazim was the most popular fungicide, and accounted for 28% of the total area of fungicide active ingredients.

Seventy-eight percent of the crop area was treated with herbicides, compared with the entire crop in 2000. Glyphosate, applied to 2,795 hectares as a pre-harvest desiccant, and metazachlor, to 1,482 hectares remained the most popular herbicides.

### ● ***Other crops (Tables 17-20, 33-36)***

The area of this grouping of set aside land in 2002 was 2,297 hectares, slightly less than in the previous survey. It was estimated that cover crops made up the greater part of this category, with only a small area, 53 hectares, as woodland.

No pesticides of any sort were encountered on these other crops. In 2000, small areas had been treated with the herbicide glyphosate.

● ***Cereals (Table 39)***

The total area of cereals grown fell only slightly compared with 2000, to 445,512 hectares.

Both the total area treated with all pesticide active ingredients and their weights applied were very similar to those recorded in the previous survey.

Compared with usage in 2000, the total area treated with insecticides declined by only 6%, but their weight almost halved, due mainly to the significant decrease in use of organophosphates which are applied at relatively high dosage rates. Pyrethroids remained the most widely used insecticide type, and again, cypermethrin was the most widely used insecticide. Use of pirimicarb, the only carbamate encountered, more than doubled when compared with the previous survey. The area treated with molluscicides increased by 11%. Metaldehyde remained the most popular molluscicide.

The area treated with fungicide active ingredients remained roughly similar to that recorded in 2002, although the weight applied increased by 15%. This trend was due mainly to the increased use of sulphur, particularly on spring barley, which is applied at relatively high dosage rates. As in all recent surveys, fenpropimorph was again the most popular fungicide.

When measured by the area of active ingredients, herbicide usage remained at similar levels recorded in 2000, but the weights applied fell by 10%. This was due mainly to the decline in use of glyphosate and the absence of mecoprop, both of which are applied at relatively high dosage rates. As in the previous survey, mecoprop-P and metsulfuron-methyl were the most commonly used herbicides. Total growth regulator usage was similar to that recorded in 2000. Chlormequat remained the most popular growth regulator.

● ***Oilseed rape (Table 40)***

Compared with 2000, the total area of oilseed rape declined by 15% to 30,902 hectares, less than half the hectareage in 1998.

Insecticide usage increased by around 39% when measured by both the area treated with active ingredients and by weight applied, a significant increase when the reduction in area grown is taken into account. For both winter and spring varieties, the proportion of the crop areas treated with insecticides increased. Lambda-cyhalothrin replaced alpha-cypermethrin as the most popular insecticide. The area treated with molluscicides increased marginally, although the weight applied fell by 13%, due mainly to lower dosage rates of metaldehyde which remained the main molluscicide.

When measured by the area of total area of active ingredients, fungicide usage fell by 7%, signifying a slight increase, when the decrease in area grown is taken into account. The total weight of fungicides applied fell by 20%, and this discrepancy can be explained by the relative decrease in use of sulphur which is applied at high dosage rates. Carbendazim remained the most popular fungicide.

Herbicide usage fell roughly in line with the decline in area grown, the area of active ingredients by 7% and their weight by 19%. Metazachlor remained the most commonly used herbicide.

In the present survey, the growth regulator chlormequat was applied to only very small areas, but had been used on over 5,000 hectares in 2000.

● **Potatoes (Table 41)**

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In 2002, the area of all potatoes grown was 30,203 hectares, a small increase compared with the previous survey.

The total area treated with all pesticide active ingredients increased by 22% and their weight applied by 14%, compared with 2000. Since the previous survey, there have been significant increases in all the pesticide groups except insecticides.

Insecticide usage fell by 10% when measured by the area of active ingredients and 27% by their weights applied. The greater decline in use of organophosphates which are applied at higher dosage rates than the other insecticide types explains this trend. Overall, the carbamate pirimicarb remained the most popular insecticide.

Usage of molluscicides rose by 30%. Methiocarb replaced thiodicarb as the most widely used molluscicide.

Compared with the previous survey, the total area of fungicide active ingredients increased by 36%, and their weight by slightly less, 28%. The increase is due mainly to the increased frequency of fungicide applications. Mancozeb remained the most popular fungicide.

The total weight of herbicide active ingredients increased by 18%, and their weight by 14%, compared with usage recorded in the previous survey. These statistics remain the same when the figures for the desiccant, sulphuric acid, are discounted. The increase in usage can be explained by the greater frequency of herbicide treatments. As in previous surveys, sulphuric acid was the most widely used active ingredient, and paraquat remained the most popular herbicide for weed control.

Growth regulator usage remained slight and was roughly similar to that in 2000.

● **Set aside (Table 42)**

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The total area of all set aside land in 2002 was 85,580 hectares, a 10% increase compared with the previous survey.

As in previous surveys, total pesticide usage was insignificant compared with the arable crops. Usage of seed treatments, insecticides and fungicides was confined to industrial oilseed rape.

Insecticide usage, when measured by the area of active ingredients declined by 25%. Lambda-cyhalothrin replaced deltamethrin as the most commonly applied insecticide.

Molluscicide usage in 2002 was less than a quarter of that recorded in the previous survey when measured by the area of active ingredients. Metaldehyde replaced thiodicarb as the most popular molluscicide.

Although fungicide usage in 2002 was less than half that recorded in the previous survey when measured by the area of active ingredients, the weights applied remained the same, due mainly to the increased use of sulphur which is applied at relatively high dosage rates. Carbendazim remained the most widely used fungicide.

When measured by the area of active ingredients, herbicide usage fell by 24% compared with 2000. There were reductions in usage in all the set aside categories, natural regeneration, industrial oilseed rape and grass. As in the previous surveys, glyphosate remained by far the most widely used herbicide.

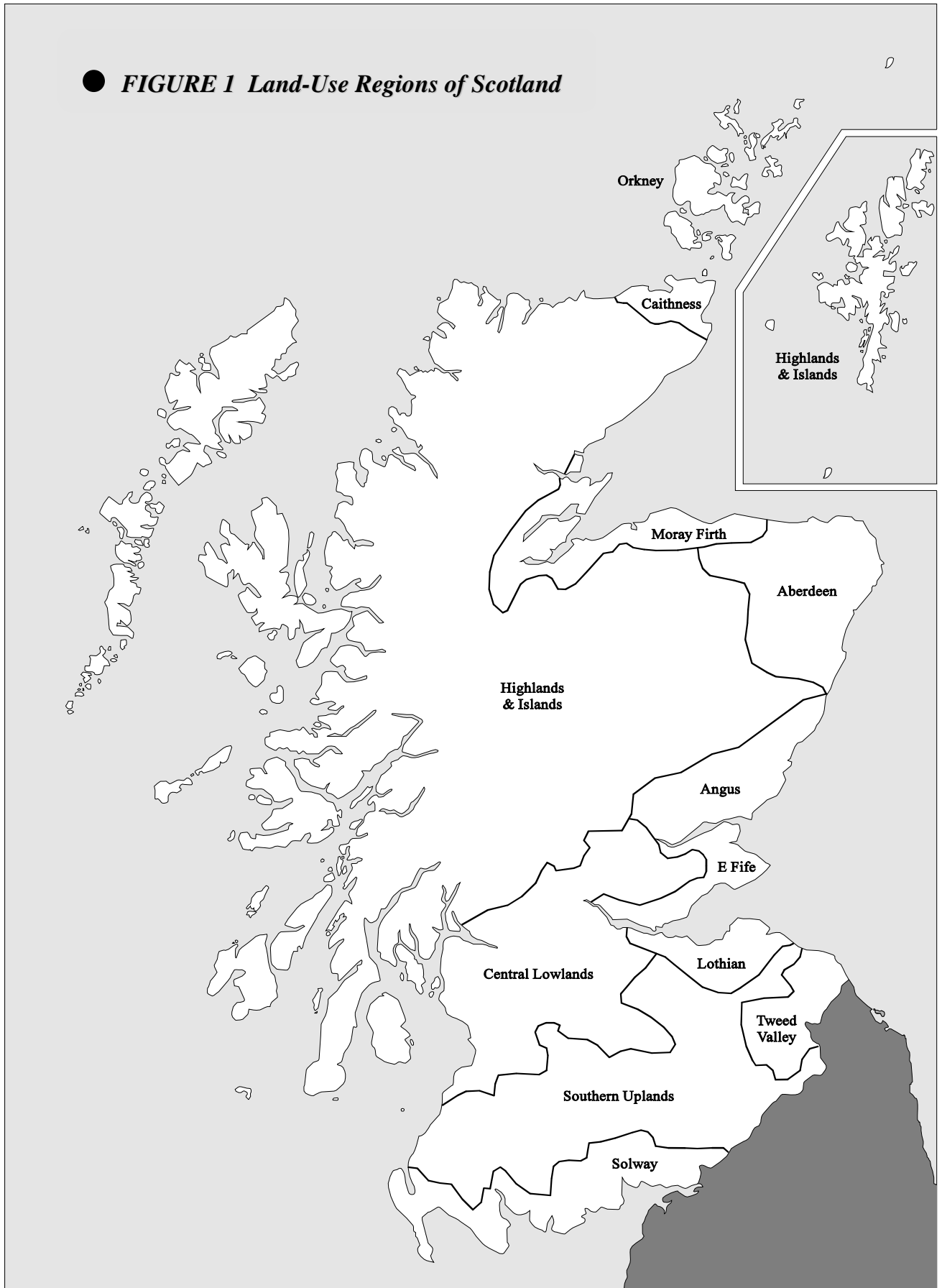
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## ● **ACKNOWLEDGEMENTS**

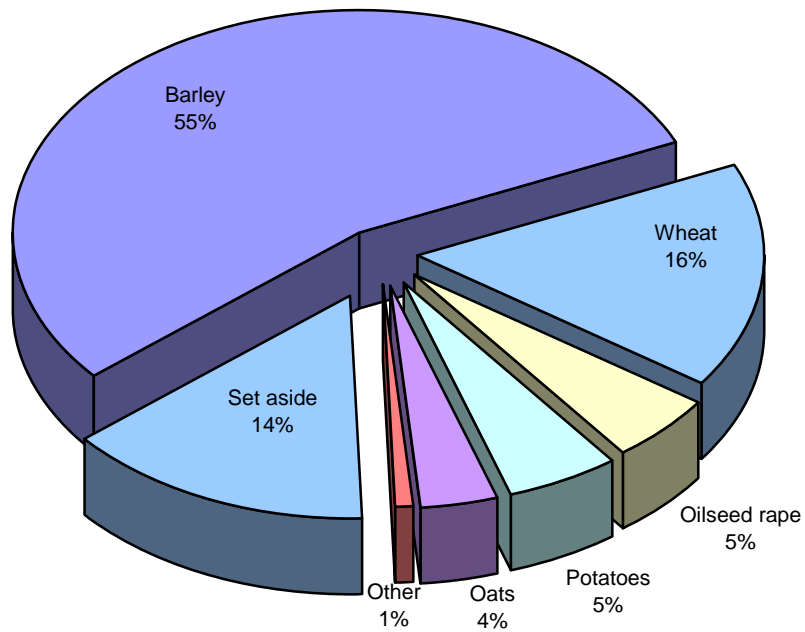
The authors wish to thank all the farmers, agronomists, contractors and seed merchants who provided the information for this report. Thanks are also given to Mr C Bierley who collected some of the data and to Dr C J Griffiths for providing editorial assistance. In addition, the authors are particularly grateful for support from Mr D Garthwaite and colleagues at Central Science Laboratory, York, from Information Technology Section, SASA, and to Mr A Roberts of Biomathematics & Statistics Scotland.

● **FIGURE 1 Land-Use Regions of Scotland**

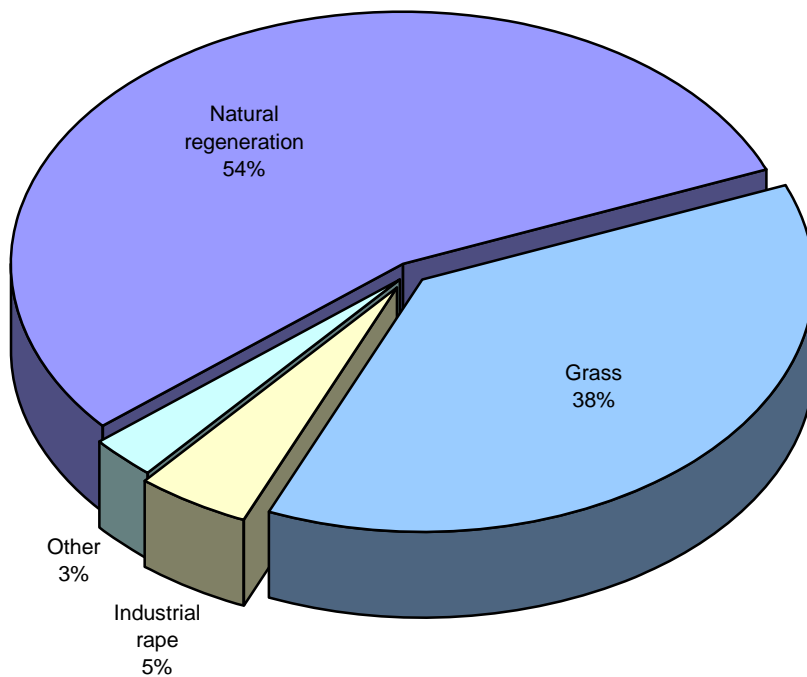




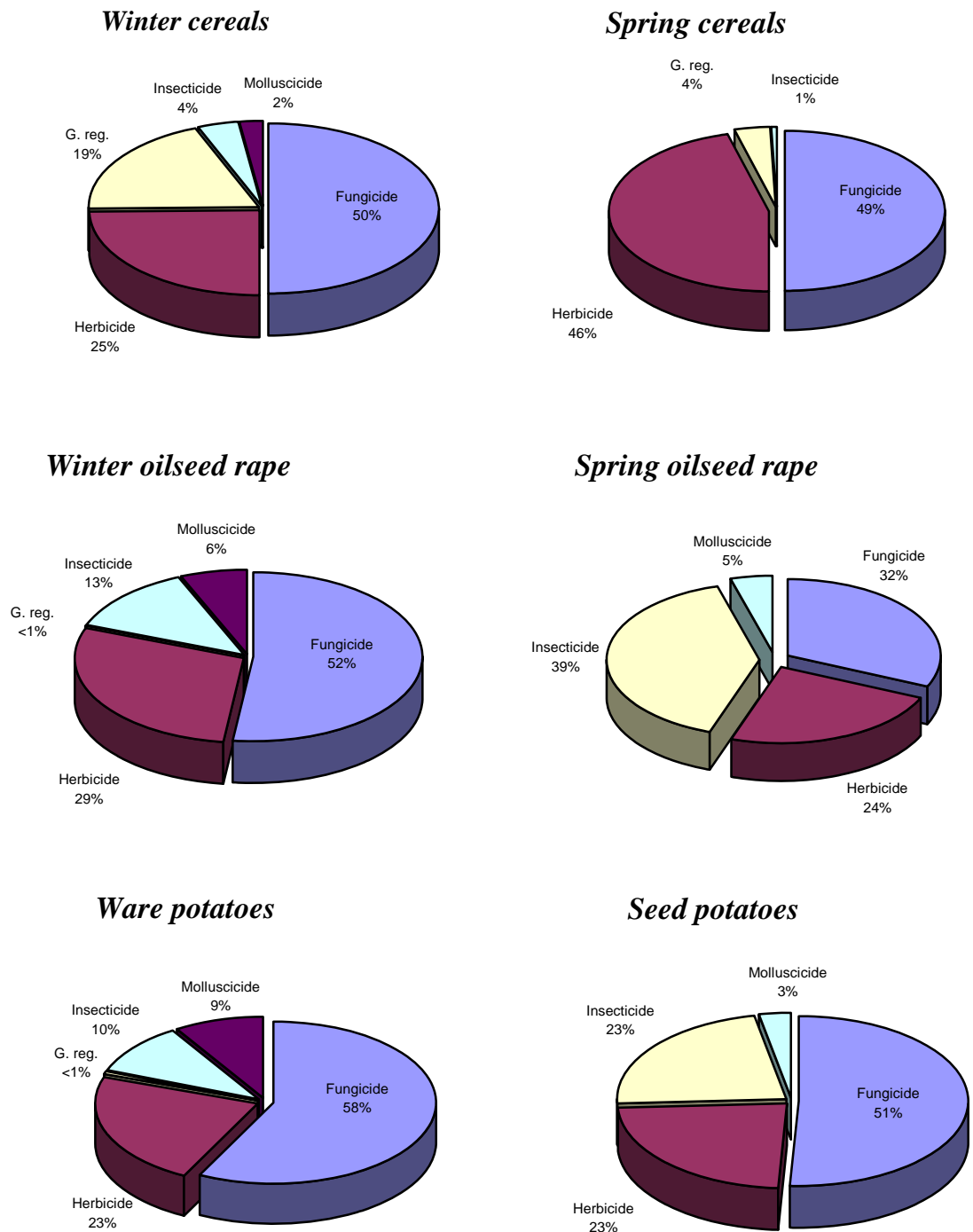
● **FIGURE 2** *Percentage areas of arable crops grown*



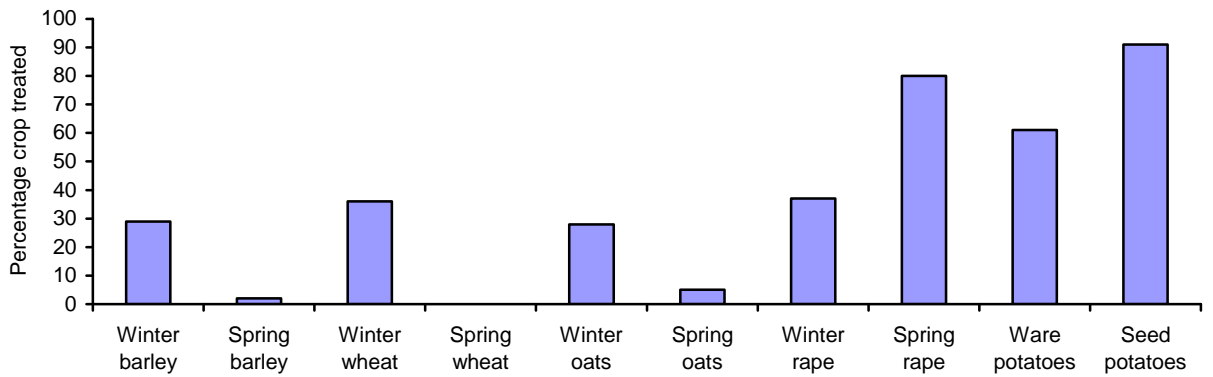
● **FIGURE 3** *Estimated percentage areas of set aside grown*



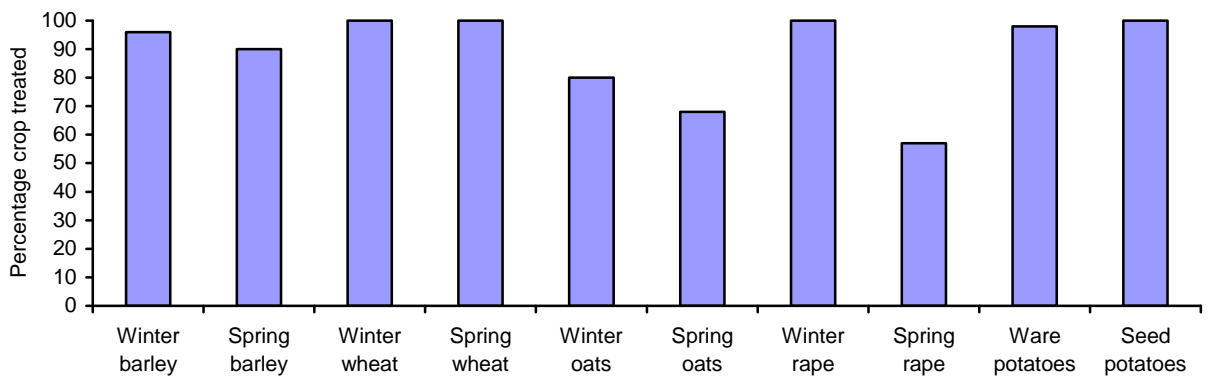
● **FIGURE 4** *Distribution of pesticide types on crops*



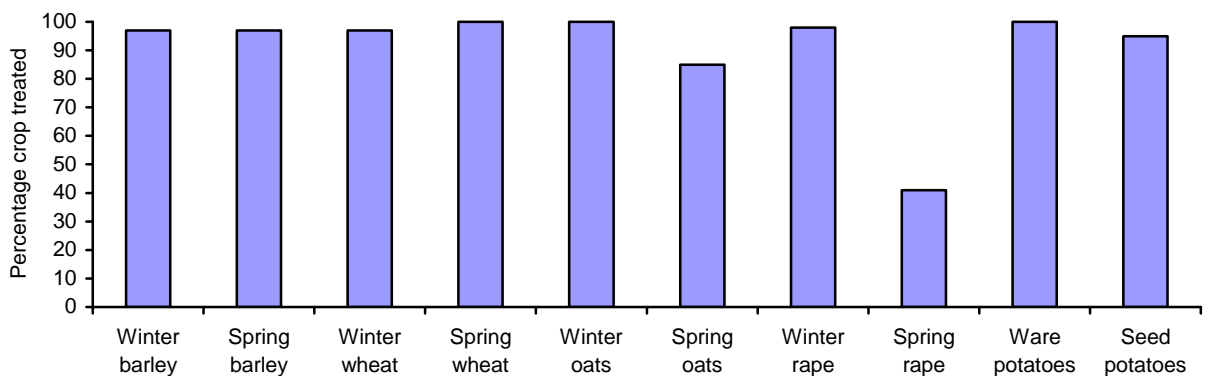
● **FIGURE 5 Percentage of crops treated with insecticide**



● **FIGURE 6 Percentage of crops treated with fungicide**



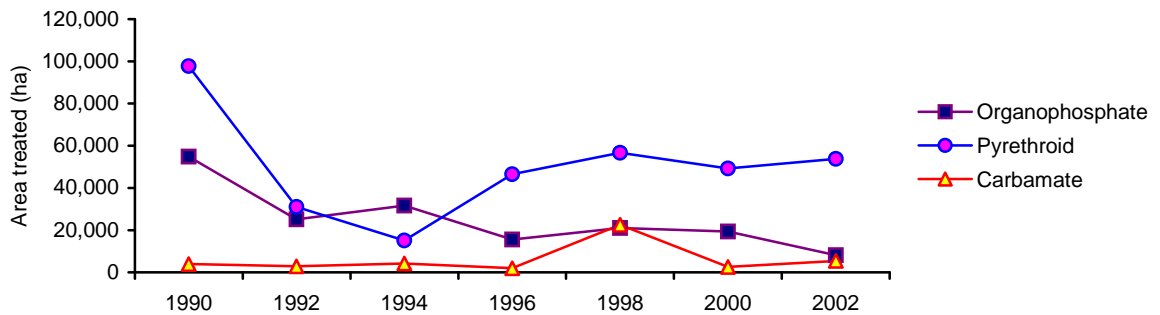
● **FIGURE 7 Percentage of crops treated with herbicide**



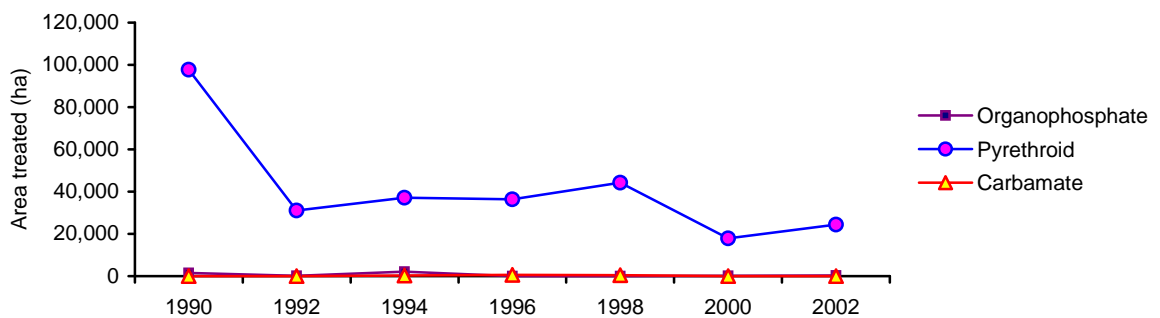
● **FIGURE 8 Trends in main insecticide types 1990 - 2002**

Area treated with active ingredients

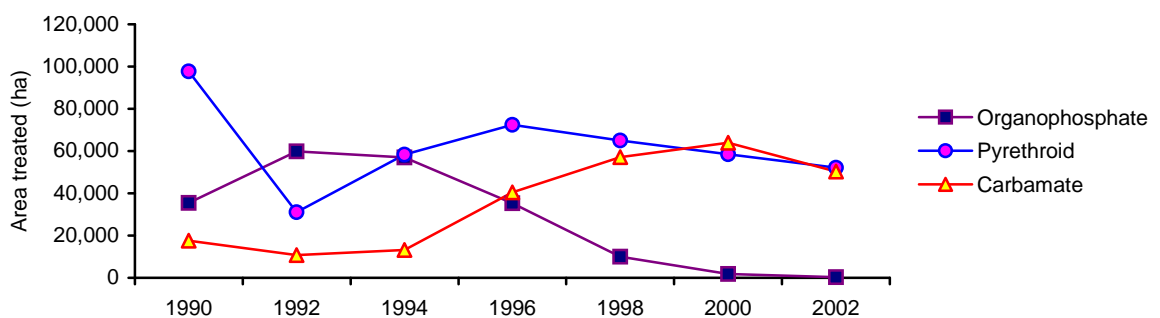
**Cereals**



**Oilseed rape**



**Potatoes**



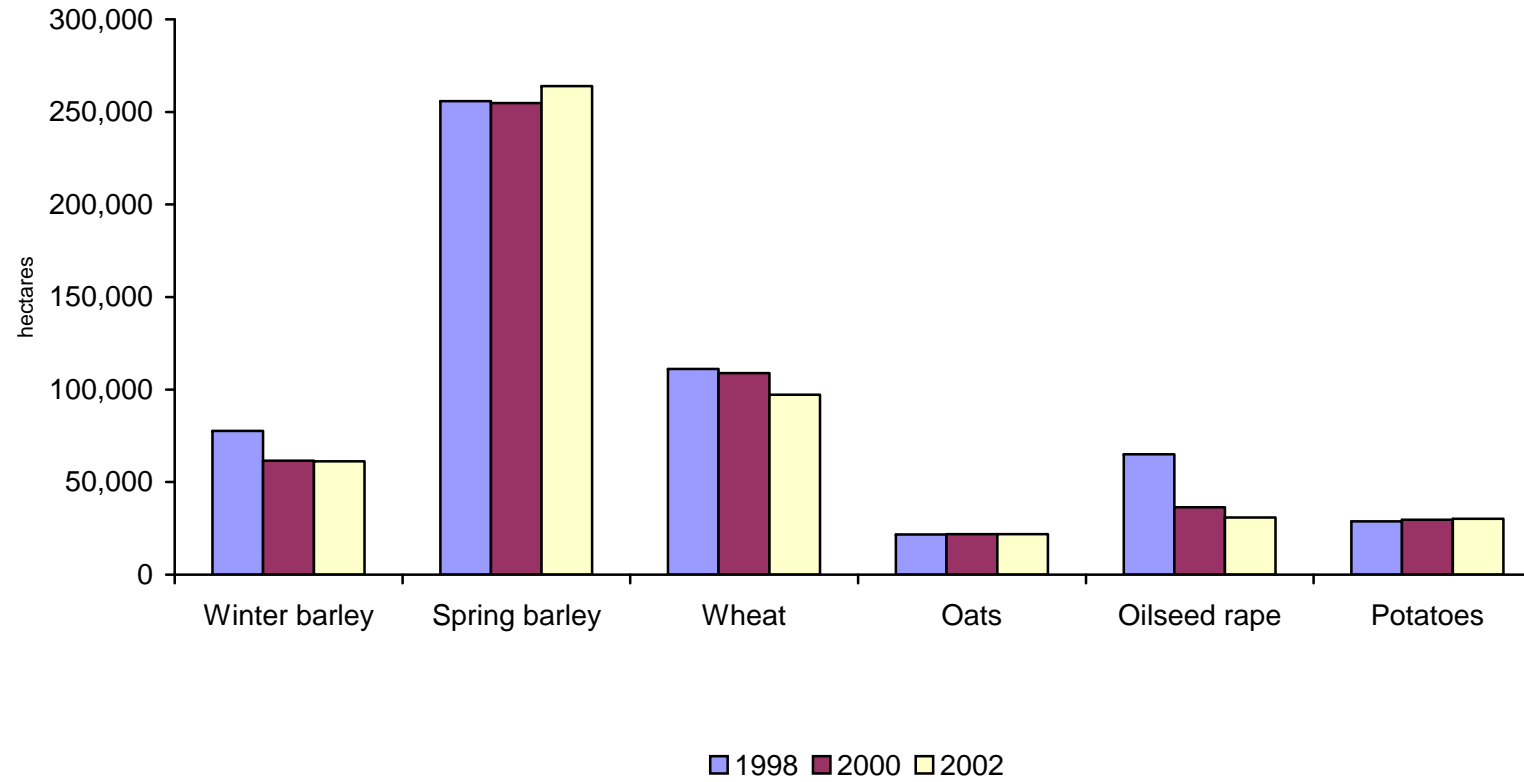


● **TABLE 1 Regional distribution of arable crops in 2002 (hectares)**

	<i>Highlands &amp; Islands and Caithness &amp; Orkney</i>	<i>Moray Firth</i>	<i>Aberdeen</i>	<i>Angus</i>	<i>East Fife</i>	<i>Lothian</i>	<i>Central Lowlands</i>	<i>Tweed Valley</i>	<i>S. Uplands &amp; Solway</i>	<i>Scotland 2002</i>	<i>Scotland 2000</i>	<i>% change</i>
Winter barley	586	3,135	19,025	10,855	5,797	3,596	5,878	7,377	4,986	<b>61,234</b>	61,677	-1
Spring barley	12,813	35,527	69,548	45,660	15,485	17,037	33,342	20,369	14,134	<b>263,914</b>	254,718	4
Wheat	125	5,474	7,183	20,255	13,521	17,274	8,934	21,252	3,173	<b>97,192</b>	108,852	-11
Winter oats	111	500	493	597	549	142	1,484	1,249	305	<b>5,430</b>	6,717	-19
Spring oats	2,276	2,644	3,563	2,759	841	288	1,884	1,819	403	<b>16,477</b>	15,210	8
Triticale	0	*	*	*	*	*	*	*	*	<b>1,265</b>	1,544	-18
Winter oilseed rape	0	1,390	7,997	6,919	2,734	2,111	1,411	3,603	267	<b>26,433</b>	28,174	-6
Spring oilseed rape	142	507	1,285	734	346	201	551	667	37	<b>4,469</b>	8,230	-46
Seed potatoes	275	1,380	2,441	6,707	759	194	1,344	597	90	<b>13,787</b>	14,276	-3
Early potatoes	25	104	48	89	98	63	363	24	139	<b>951</b>	767	24
Ware potatoes	354	612	883	5,996	2,145	1,918	1,707	1,574	276	<b>15,465</b>	14,648	6
Combine peas	38	145	65	412	86	224	205	222	55	<b>1,451</b>	1,640	-11
Field beans	0	*	*	*	*	*	*	*	*	<b>2,116</b>	1,138	86
Linseed	*	*	*	*	*	*	*	*	*	<b>861</b>	2,543	-66
Set aside	2,587	11,501	21,398	14,273	6,368	6,283	10,330	9,392	3,448	<b>85,580</b>	77,678	10

To prevent disclosure of information about individual holdings, entries relating to fewer than 5 holdings have been replaced by a \*

● **FIGURE 9** Areas (hectares) of arable crops grown 1998 - 2002



● **TABLE 2** *Distribution of sample*

<i>Size (ha)</i>	<i>Highlands &amp; Islands and Caithness &amp; Orkney</i>	<i>Moray Firth</i>	<i>Aberdeen</i>	<i>Angus</i>	<i>East Fife</i>	<i>Lothian</i>	<i>Central Lowlands</i>	<i>Tweed Valley</i>	<i>S. Uplands &amp; Solway</i>	<i>Scotland 2002</i>
0.1 – 19.9	15	6	16	5	1	2	12	3	8	<b>68</b>
20 – 49.9	3	10	21	10	4	2	11	4	7	<b>72</b>
50 – 99.9	2	6	20	12	6	3	10	6	4	<b>69</b>
100 – 149.9	0	5	10	10	4	6	6	8	0	<b>49</b>
150 +	0	7	14	11	7	9	5	11	2	<b>66</b>
<i>All sizes</i>	<b>20</b>	<b>34</b>	<b>81</b>	<b>48</b>	<b>22</b>	<b>22</b>	<b>44</b>	<b>32</b>	<b>21</b>	<b>324</b>

● **TABLE 3 Proportion (%) of each crop treated with pesticides (cereals)**

	<i>Winter barley</i>	<i>Spring barley</i>	<i>Winter wheat</i>	<i>Spring wheat</i>	<i>Winter oats</i>	<i>Spring oats</i>	<i>Triticale</i>
Insecticides	29	2	36	0	28	5	0
Molluscicides	4	0	26	0	9	0	0
Fungicides	96	90	100	100	80	68	23
Herbicides	97	97	97	100	100	85	25
Growth regulators	85	10	97	82	88	49	62
Any pesticide	100	97	100	100	100	85	64

● **TABLE 4 Proportion (%) of each crop treated with pesticides (other crops)**

	<i>Winter oilseed rape</i>	<i>Spring oilseed rape</i>	<i>Seed potatoes</i>	<i>Early potatoes</i>	<i>Ware potatoes</i>	<i>Combine peas</i>	<i>Field beans</i>	<i>Set aside</i>
Insecticides	67	80	91	0	56	0	46	3
Molluscicides	34	10	30	80	44	0	0	1
Fungicides	100	57	100	100	98	12	73	3
Herbicides	98	41	95	100	97	28	97	19
Growth regulators	+	0	0	0	9	0	0	0
Any pesticide	100	88	100	100	98	28	97	21

‘+’ = <0.5%







● **TABLE 5 Cereal seed treatment formulations**

Area (ha) and percentage of crop treated

<i>Seed treatments</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Bitertanol/fuberidazole	0	0	547	0	33,913	35	304	36	555	10	4,254	26	<b>39,572</b>	40,704
Bitertanol/fuberidazole/imidacloprid	0	0	0	0	1,793	2	0	0	0	0	0	0	<b>1,793</b>	0
Carboxin/thiram	2,827	5	7,177	3	5,679	6	0	0	59	1	808	5	<b>16,550</b>	9,427
Ethirimol/flutriafol/thiabendazole	755	1	775	0	0	0	0	0	0	0	0	0	<b>1,531</b>	10,182
Fludioxonil	2,765	5	10,434	4	10,119	11	0	0	480	9	3,250	20	<b>27,048</b>	18,002
Fluquinconazole/prochloraz	0	0	0	0	5,556	6	0	0	0	0	0	0	<b>5,556</b>	0
Fuberidazole/triadimenol	167	0	6,677	3	2,475	3	0	0	0	0	931	6	<b>10,249</b>	12,143
Guazatine	7,254	12	39,202	15	23,688	25	382	45	3,448	63	4,756	29	<b>78,729</b>	59,386
Guazatine/imazalil	335	1	4,679	2	0	0	0	0	0	0	0	0	<b>5,014</b>	49,737
Guazatine/triticonazole	0	0	0	0	5,219	5	156	19	0	0	0	0	<b>5,375</b>	0
Imazalil	0	0	446	0	0	0	0	0	0	0	0	0	<b>446</b>	0
Imazalil/triticonazole	2,827	5	2,124	1	0	0	0	0	0	0	0	0	<b>4,950</b>	0
Tebuconazole/triazoxide	39,639	65	164,604	62	0	0	0	0	0	0	0	0	<b>204,243</b>	189,262
Tefluthrin	0	0	0	0	1,114	1	0	0	0	0	0	0	<b>1,114</b>	1,064
Unspecified seed treatment	0	0	1,353	1	1,563	2	0	0	240	4	733	4	<b>3,889</b>	1,486
No seed treatment information	2,413	4	8,183	3	2,630	3	0	0	0	0	450	3	<b>13,675</b>	7,990
No seed treatment	2,251	4	17,724	7	3,718	4	0	0	648	12	1,297	8	<b>25,638</b>	23,044
Area grown	61,234	96	263,914	93	96,350	96	842	100	5,430	88	16,477	92	<b>445,512</b>	448,718

\* includes triticales

● **TABLE 6 Cereals insecticide and molluscicide formulations**

Area treated (ha) and percentage of crop treated

<i>Insecticides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
Alpha-cypermethrin	1,542	3	0	0	3,757	3	0	0	0	0	0	0	<b>5,299</b>	313
Chlorpyrifos	0	0	5,898	2	1,486	2	0	0	0	0	197	1	<b>7,581</b>	15,949
Cypermethrin	6,698	11	78	+	12,408	13	0	0	1,295	24	0	0	<b>20,478</b>	24,633
Deltamethrin	2,841	5	0	0	2,283	2	0	0	0	0	0	0	<b>5,123</b>	6,234
Dimethoate	0	0	0	0	549	1	0	0	0	0	0	0	<b>549</b>	2,598
Esfenvalerate	4,324	7	0	0	7,272	8	0	0	216	4	0	0	<b>11,812</b>	5,621
Lambda-cyhalothrin	813	0	0	0	5,933	6	0	0	0	0	187	1	<b>6,932</b>	10,485
Pirimicarb	0	0	0	0	5,430	6	0	0	0	0	0	0	<b>5,430</b>	1,834
Zeta-cypermethrin	1,885	3	174	+	1,627	2	0	0	0	0	479	3	<b>4,164</b>	1,244
<b>All insecticides</b>	<b>18,101</b>	<b>29</b>	<b>6,150</b>	<b>2</b>	<b>40,744</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>1,511</b>	<b>28</b>	<b>863</b>	<b>5</b>	<b>67,368</b>	<b>70,549</b>
<b>Molluscicides</b>														
Metaldehyde	1,984	3	0	0	16,996	15	0	0	0	0	0	0	<b>18,980</b>	13,323
Methiocarb	0	0	0	0	9,177	8	0	0	0	0	0	0	<b>9,177</b>	6,212
Thiodicarb	284	+	0	0	6,324	5	0	0	500	9	0	0	<b>7,108</b>	12,174
<b>All molluscicides</b>	<b>2,268</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>32,497</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>500</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>35,265</b>	<b>31,709</b>
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	448,723

\*' includes triticale '+' = < 0.5%





● **TABLE 7 Cereals fungicide formulations**

Area treated (ha) and percentage of crop treated

<i>Fungicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
Azoxystrobin	8,016	12	31,469	11	55,162	47	538	64	791	5	231	1	<b>96,206</b>	154,856
Azoxystrobin/fenpropimorph	9,323	12	21,534	8	8,164	7	0	0	0	0	0	0	<b>39,021</b>	18,434
Bromuconazole	1,632	3	4,266	2	2,198	2	0	0	0	0	0	0	<b>8,096</b>	1,694
Carbendazim	1,546	3	2,800	1	606	1	0	0	0	0	0	0	<b>4,952</b>	10,010
Carbendazim/flusilazole	5,554	8	14,947	5	311	+	0	0	0	0	0	0	<b>20,812</b>	36,165
Carbendazim/mancozeb	0	0	0	0	523	1	0	0	0	0	0	0	<b>523</b>	462
Carbendazim/maneb	0	0	0	0	999	1	0	0	0	0	0	0	<b>999</b>	3,187
Carbendazim/prochloraz	0	0	1,034	+	0	0	0	0	0	0	0	0	<b>1,034</b>	800
Carbendazim/propiconazole	0	0	0	0	481	+	0	0	0	0	0	0	<b>481</b>	1,640
Chlorothalonil	930	2	2,438	1	11,126	12	0	0	0	0	0	0	<b>14,495</b>	27,704
Chlorothalonil/cyproconazole	0	0	1,415	1	6,677	6	0	0	0	0	0	0	<b>8,092</b>	0
Chlorothalonil/flutriafol	0	0	0	0	786	1	0	0	0	0	0	0	<b>786</b>	0
Chlorothalonil/mancozeb	0	0	0	0	730	1	0	0	0	0	0	0	<b>730</b>	0
Cyproconazole	0	0	0	0	1,763	2	0	0	229	4	215	1	<b>2,207</b>	13,984
Cyproconazole/cyprodinil	11,350	18	9,747	4	10,519	11	0	0	0	0	467	3	<b>32,083</b>	34,606
Cyproconazole/prochloraz	0	0	0	0	2,194	2	0	0	0	0	0	0	<b>2,194</b>	10,303
Cyproconazole/propiconazole	0	0	0	0	3,714	4	0	0	0	0	0	0	<b>3,714</b>	7,451
Cyproconazole/trifloxystrobin	0	0	10,486	4	3,658	4	0	0	0	0	0	0	<b>14,144</b>	0
Cyprodinil	23,682	29	48,861	18	22,092	21	0	0	0	0	0	0	<b>94,635</b>	118,108

\*' includes triticale '+' = < 0.5%

Cont...

● **TABLE 7 Cereals fungicide formulations continued**

Area treated (ha) and percentage of crop treated

<i>Fungicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
Difenoconazole	0	0	0	0	606	1	0	0	0	0	0	0	<b>606</b>	3,722
Epoxiconazole	7,417	10	9,817	4	36,452	33	939	93	341	6	273	1	<b>55,536</b>	66,308
Epoxiconazole/fenpropimorph	10,396	15	16,265	6	9,535	9	0	0	652	6	470	3	<b>37,317</b>	14,835
Epoxiconazole/fenpropimorph/ kresoxim-methyl	16,043	20	20,357	7	10,665	10	151	18	734	14	1,425	9	<b>49,374</b>	75,590
Epoxiconazole/kresoxim-methyl	1,424	2	24,281	8	16,980	17	0	0	822	11	2,875	12	<b>46,382</b>	81,245
Epoxiconazole/kresoxim-methyl/ pyraclostrobin	0	0	0	0	14,060	9	0	0	0	0	0	0	<b>14,060</b>	0
Epoxiconazole/pyraclostrobin	85	+	1,540	1	10,416	11	0	0	0	0	0	0	<b>12,040</b>	0
Famoxadone/flusilazole	16,893	22	26,700	9	24,236	22	0	0	0	0	0	0	<b>67,828</b>	0
Fenbuconazole/propiconazole	0	0	0	0	2,390	2	0	0	0	0	0	0	<b>2,390</b>	1,653
Fenpropidin	0	0	0	0	10,283	8	0	0	264	5	0	0	<b>10,547</b>	12,330
Fenpropidin/fenpropimorph	622	1	0	0	0	0	0	0	0	0	124	1	<b>746</b>	35,741
Fenpropidin/tebuconazole	0	0	0	0	10,664	8	0	0	0	0	0	0	<b>10,664</b>	0
Fenpropimorph	14,935	19	69,632	23	16,215	14	0	0	2,622	40	4,722	25	<b>108,125</b>	89,767
Fenpropimorph/flusilazole	17,703	28	56,552	19	951	1	0	0	0	0	171	1	<b>75,377</b>	38,589
Fenpropimorph/kresoxim-methyl	7,102	9	24,523	9	16,070	11	0	0	652	6	579	4	<b>48,926</b>	30,863
Fenpropimorph/prochloraz	0	0	0	0	999	1	0	0	0	0	0	0	<b>999</b>	14,233
Fenpropimorph/propiconazole	279	+	1,051	+	0	0	0	0	0	0	0	0	<b>1,330</b>	9,555
Fenpropimorph/quinoxifen	475	1	9,041	3	1,946	2	0	0	240	4	771	5	<b>12,474</b>	9,051
Fluquinconazole	0	0	0	0	11,982	12	0	0	264	5	0	0	<b>12,245</b>	7,908
Fluquinconazole/prochloraz	0	0	0	0	5,467	5	0	0	0	0	0	0	<b>5,467</b>	6,651
Flusilazole	6,974	10	26,800	10	329	+	0	0	0	0	744	5	<b>34,848</b>	84,809

\*' includes triticale '+' = < 0.5%

Cont...





● **TABLE 7 Cereals fungicide formulations continued**

Area treated (ha) and percentage of crop treated

<i>Fungicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
Mancozeb	151	+	926	+	907	1	0	0	0	0	0	0	<b>1,984</b>	3,521
Maneb	0	0	0	0	1,710	2	0	0	0	0	0	0	<b>1,710</b>	11,766
Metconazole	2,347	4	7,216	2	18,648	18	0	0	0	0	0	0	<b>28,211</b>	22,468
Picoxystrobin	16,747	20	27,783	10	3,968	4	0	0	229	4	278	1	<b>49,005</b>	0
Prochloraz	0	0	658	+	3,358	3	0	0	0	0	0	0	<b>4,016</b>	2,235
Prochloraz/propiconazole	3,907	6	8,131	3	3,086	3	0	0	0	0	0	0	<b>15,123</b>	13,743
Prochloraz/tebuconazole	0	0	0	0	5,601	5	0	0	0	0	0	0	<b>5,601</b>	0
Propiconazole	507	1	192	+	237	+	0	0	500	9	0	0	<b>1,437</b>	10,067
Propiconazole/tebuconazole	0	0	0	0	8,210	5	0	0	0	0	0	0	<b>8,210</b>	2,703
Pyraclostrobin	4,840	8	23,302	7	31,177	21	0	0	0	0	35	+	<b>59,354</b>	0
Quinoxifen	0	0	16,506	6	19,425	16	0	0	2,518	37	5,095	28	<b>43,544</b>	35,651
Spiroxamine	13,197	16	29,111	10	15,651	14	0	0	0	0	288	1	<b>58,247</b>	42,511
Spiroxamine/tebuconazole	0	0	2,238	1	596	1	0	0	0	0	0	0	<b>2,835</b>	429
Sulphur	7,227	11	16,570	6	16,386	14	0	0	0	0	2,741	15	<b>42,924</b>	28,916
Tebuconazole	0	0	1,095	+	19,238	20	538	64	0	0	0	0	<b>20,871</b>	40,450
Tebuconazole/triadimenol	0	0	0	0	16,318	16	0	0	264	5	0	0	<b>16,581</b>	20,997
Tetraconazole	0	0	126	+	1,470	1	0	0	487	4	1,334	4	<b>3,416</b>	6,729
Tridemorph	0	0	658	+	0	0	0	0	0	0	0	0	<b>658</b>	1,528
Trifloxystrobin	24,566	36	29,965	11	21,196	18	401	30	0	0	0	0	<b>76,128</b>	132,837
Unspecified fungicides	0	0	1,117	+	0	0	0	0	0	0	0	0	<b>1,117</b>	0
<b>All fungicides</b>	<b>235,872</b>	<b>96</b>	<b>601,146</b>	<b>90</b>	<b>519,129</b>	<b>100</b>	<b>2,567</b>	<b>100</b>	<b>11,605</b>	<b>80</b>	<b>22,837</b>	<b>68</b>	<b>1,393,453</b>	<b>1,416,961</b>
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	448,723

\*' includes triticale '+' = < 0.5%

● **TABLE 8 Cereals herbicide and growth regulator formulations**

Area treated (ha) and percentage of crop treated

<i>Herbicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
2,4-DB/benazolin/MCPA	0	0	8,434	3	0	0	0	0	0	0	388	2	<b>8,822</b>	6,545
2,4-DB/linuron/MCPA	0	0	2,036	1	0	0	0	0	0	0	0	0	<b>2,036</b>	2,333
Amidosulfuron/ iodosulfuron-methyl-sodium	0	0	4,990	2	0	0	0	0	0	0	0	0	<b>4,990</b>	0
Benazolin/bromoxynil/ioxynil	0	0	10,323	4	3,381	4	156	19	0	0	329	2	<b>14,188</b>	5,863
Bentazone/MCPA/MCPB	0	0	1,391	1	0	0	0	0	0	0	0	0	<b>1,391</b>	5,461
Bromoxynil	0	0	591	+	0	0	0	0	0	0	0	0	<b>591</b>	4,893
Bromoxynil/diflufenican/ioxynil	0	0	1,923	1	0	0	0	0	0	0	0	0	<b>1,923</b>	5,794
Bromoxynil/fluroxypyr/ioxynil	0	0	2,234	1	0	0	0	0	0	0	0	0	<b>2,234</b>	0
Bromoxynil/ioxynil	1,527	2	39,917	15	1,921	2	0	0	326	6	3,172	19	<b>46,863</b>	31,449
Bromoxynil/ioxynil/mecoprop-P	0	0	116	+	0	0	0	0	0	0	0	0	<b>116</b>	10,364
Bromoxynil/ioxynil/triasulfuron	0	0	3,574	1	0	0	0	0	0	0	0	0	<b>3,574</b>	11,489
Carfentrazone-ethyl/ flupyrsulfuron-methyl	0	0	0	0	0	0	0	0	1,185	22	0	0	<b>1,185</b>	1,290
Carfentrazone-ethyl/ metsulfuron-methyl	0	0	0	0	0	0	0	0	0	0	71	+	<b>71</b>	1,554
Carfentrazone-ethyl/ thifensulfuron-methyl	310	1	2,509	1	0	0	0	0	0	0	0	0	<b>2,819</b>	226
Clodinafop-propargyl	0	0	0	0	2,834	3	0	0	0	0	0	0	<b>2,834</b>	1,597
Cyanazine/pendimethalin	151	+	0	0	453	+	0	0	0	0	0	0	<b>604</b>	3,245

\*' includes triticale '+' = < 0.5%

Cont...



● **TABLE 8 Cereals herbicide and growth regulator formulations continued**

Area treated (ha) and percentage of crop treated

<i>Herbicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
Dicamba/MCPA/mecoprop-P	0	0	4,658	2	0	0	0	0	0	0	693	4	<b>5,351</b>	3,663
Dicamba/mecoprop-P	1,169	2	27,368	10	2,256	2	279	33	59	1	1,713	10	<b>32,844</b>	20,864
Dichlorprop-P	0	0	1,779	1	0	0	0	0	0	0	0	0	<b>1,779</b>	0
Dichlorprop-P/MCPA/mecoprop-P	0	0	793	+	0	0	0	0	0	0	0	0	<b>793</b>	0
Diclofop-methyl/fenoxaprop-P-ethyl	0	0	611	+	390	+	0	0	0	0	0	0	<b>1,001</b>	2,872
Diflufenican/flurtamone	1,266	2	0	0	1,247	1	0	0	0	0	0	0	<b>2,513</b>	2,581
Diflufenican/flurtamone/isoproturon	5,137	8	0	0	5,304	6	0	0	0	0	0	0	<b>10,441</b>	4,748
Diflufenican/isoproturon	17,907	29	0	0	25,616	27	0	0	0	0	0	0	<b>43,524</b>	51,568
Diflufenican/terbuthylazine	1,387	2	0	0	2,259	2	0	0	0	0	0	0	<b>3,647</b>	19,193
Diflufenican/trifluralin	3,912	6	9	0	5,822	6	0	0	0	0	0	0	<b>9,743</b>	4,332
Fenoxaprop-P-ethyl	0	0	0	0	7,068	7	0	0	0	0	0	0	<b>7,068</b>	4,269
Flamprop-M-isopropyl	0	0	147	+	0	0	0	0	0	0	197	1	<b>344</b>	2,437
Florasulam	223	+	0	0	30	+	0	0	0	0	0	0	<b>253</b>	1,526
Florasulam/fluroxypyr	110	+	0	0	0	0	0	0	0	0	0	0	<b>110</b>	0
Flufenacet/pendimethalin	304	+	0	0	251	+	0	0	0	0	0	0	<b>555</b>	0
Flupyr-sulfuron-methyl	0	0	0	0	2,103	2	0	0	0	0	0	0	<b>2,103</b>	616
Flupyr-sulfuron-methyl/ thifensulfuron-methyl	0	0	0	0	503	1	0	0	0	0	0	0	<b>503</b>	687
Fluroxypyr	6,091	6	4,424	2	4,133	4	156	19	229	4	24	+	<b>15,057</b>	11,227
Glyphosate	15,336	25	38,035	14	12,438	12	25	3	0	0	1,346	8	<b>67,180</b>	82,761
Isoproturon	27,758	45	1,118	+	45,269	47	0	0	264	5	0	0	<b>74,409</b>	70,795
Isoproturon/pendimethalin	2,631	4	0	0	3,407	4	0	0	0	0	0	0	<b>6,038</b>	18,951
Isoproturon/simazine	0	0	0	0	1,802	1	0	0	0	0	0	0	<b>1,802</b>	0

\*' includes triticale '+' = < 0.5%

Cont...

● **TABLE 8 Cereals herbicide and growth regulator formulations continued**

Area treated (ha) and percentage of crop treated

<i>Herbicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
MCPA	464	1	19,378	7	0	0	0	0	0	0	1,197	7	<b>21,040</b>	26,040
MCPA/MCPB	0	0	1,311	+	0	0	0	0	0	0	0	0	<b>1,311</b>	327
MCPB	0	0	66	+	0	0	0	0	0	0	0	0	<b>66</b>	726
Mecoprop-P	15,436	25	112,436	43	37,733	38	382	45	2,207	32	5,317	32	<b>173,824</b>	191,554
Metsulfuron-methyl	6,247	10	43,058	14	7,528	8	538	64	2,317	43	6,367	39	<b>66,352</b>	84,741
Metsulfuron-methyl/ thifensulfuron-methyl	5,622	9	109,242	41	20,836	22	279	33	326	6	711	4	<b>137,017</b>	108,354
Metsulfuron-methyl/ tribenuron-methyl	0	0	7,952	3	165	+	0	0	455	8	159	1	<b>8,730</b>	0
Pendimethalin	3,775	6	0	0	5,807	6	0	0	0	0	0	0	<b>9,582</b>	15,091
Pendimethalin/picolinafen	11,399	19	0	0	11,822	12	0	0	0	0	0	0	<b>23,221</b>	0
Pendimethalin/simazine	347	1	0	0	1,474	2	0	0	264	5	0	0	<b>2,085</b>	4,353
Propoxycarbazone-sodium	0	0	0	0	0	0	25	3	0	0	0	0	<b>25</b>	0
Sulfosulfuron	0	0	0	0	800	1	0	0	0	0	0	0	<b>800</b>	0
Terbutryn	0	0	0	0	0	0	0	0	667	12	0	0	<b>667</b>	0
Thifensulfuron-methyl/ tribenuron-methyl	895	1	35,882	14	4,202	4	0	0	0	0	93	1	<b>41,088</b>	34,450
Tralkoxydim	3,126	5	33,952	13	433	+	0	0	0	0	0	0	<b>37,510</b>	38,422
Tribenuron-methyl	5,415	9	23,138	9	6,701	7	0	0	734	14	3,671	22	<b>39,658</b>	23,249
Trifluralin	2,243	4	0	0	3,844	4	0	0	0	0	0	0	<b>6,087</b>	9,774
Unspecified herbicides	0	0	587	+	373	+	0	0	0	0	0	0	<b>960</b>	2,936
<b>All herbicides</b>	<b>140,189</b>	<b>97</b>	<b>543,984</b>	<b>97</b>	<b>230,205</b>	<b>97</b>	<b>1,839</b>	<b>100</b>	<b>9,032</b>	<b>100</b>	<b>25,448</b>	<b>85</b>	<b>951,323</b>	<b>964,635</b>

\*' includes triticale '+' = < 0.5%

Cont...







● **TABLE 8 Cereals herbicide and growth regulator formulations continued**

Area treated (ha) and percentage of crop treated

<i>Growth regulators</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)		
2-chloroethylphosphonic acid	9,294	15	5,888	2	3,603	4	0	0	0	0	0	0	<b>18,785</b>	26,912
2-chloroethylphosphonic acid/ chlormequat	9,448	15	4,762	2	17,380	16	0	0	0	0	302	2	<b>31,893</b>	31,152
2-chloroethylphosphonic acid/ chlormequat/mepiquat chloride	202	+	1,618	1	2,181	2	0	0	0	0	0	0	<b>4,001</b>	2,763
2-chloroethylphosphonic acid/ mepiquat chloride	7,288	12	2,292	1	5,471	6	0	0	0	0	0	0	<b>15,051</b>	20,994
Chlormequat	48,409	69	14,903	5	83,448	74	784	82	2,914	54	7,047	43	<b>157,505</b>	154,003
Chlormequat/imazaquin	0	0	0	0	36,542	27	0	0	0	0	0	0	<b>36,542</b>	30,064
Trinexapac-ethyl	24,814	41	5,864	2	38,918	37	0	0	3,294	56	1,683	9	<b>74,573</b>	79,980
<b>All growth regulators</b>	<b>99,455</b>	<b>85</b>	<b>35,327</b>	<b>10</b>	<b>187,543</b>	<b>97</b>	<b>784</b>	<b>82</b>	<b>6,208</b>	<b>88</b>	<b>9,032</b>	<b>29</b>	<b>338,350</b>	<b>346,039</b>
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	448,723

\*' includes triticale '+' = < 0.5%

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● **TABLE 9 Oilseed rape seed treatment formulations**

Area (ha) and percentage of crop treated

<i>Seed treatments</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed rape</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Beta-cyfluthrin/imidacloprid	3,679	14	0	0	<b>3,679</b>	0
Fenpropimorph/gamma-HCH/thiram	536	2	0	0	<b>536</b>	7,203
Guazatine/triticonazole*	0	0	15	+	<b>15</b>	0
Iprodione	12,791	48	424	9	<b>13,215</b>	10,400
Methiocarb	508	2	46	1	<b>554</b>	0
Thiram	10,074	38	2,527	57	<b>12,601</b>	8,955
Unspecified seed treatment	478	2	573	13	<b>1,051</b>	12,559
No seed treatment information	3,959	15	1,829	41	<b>5,788</b>	2,042
Area grown	26,433	100	4,469	100	<b>30,902</b>	36,401

‘+’ = < 0.5%

‘\*’ – applied to a failed winter wheat crop, reseeded with spring oilseed rape.





● **TABLE 10 Oilseed insecticide and molluscicide formulations**

Area treated (ha) formulations and percentage of crop treated

<i>Insecticides</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed rape</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Alpha-cypermethrin	4,891	19	1,326	30	<b>6,217</b>	7,872
Cypermethrin	5,293	18	1,447	32	<b>6,739</b>	3,944
Deltamethrin	1,288	5	461	10	<b>1,749</b>	1,281
Dimethoate	305	1	0	0	<b>305</b>	0
Lambda-cyhalothrin	6,849	22	573	13	<b>7,422</b>	4,363
Nicotine	468	2	0	0	<b>468</b>	0
Zeta-cypermethrin	2,100	8	234	5	<b>2,334</b>	479
<b>All insecticides</b>	<b>21,193</b>	<b>37</b>	<b>4,041</b>	<b>80</b>	<b>25,234</b>	<b>18,099</b>
<b>Molluscicides</b>						
Metaldehyde	6,397	22	0	0	<b>6,397</b>	5,091
Methiocarb	3,495	11	0	0	<b>3,495</b>	3,912
Thiodicarb	711	3	461	10	<b>1,172</b>	2,597
<b>All molluscicides</b>	<b>10,602</b>	<b>34</b>	<b>461</b>	<b>10</b>	<b>11,063</b>	<b>11,600</b>
Area grown	26,433		4,469		30,902	36,401

● **TABLE 11 Oilseed rape fungicide formulations**

Area treated (ha) and percentage of crop treated

<i>Fungicides</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed rape</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Carbendazim	11,017	42	461	10	<b>11,478</b>	8,618
Carbendazim/flusilazole	8,956	25	0	0	<b>8,956</b>	12,088
Carbendazim/iprodione	410	2	0	0	<b>410</b>	1,068
Carbendazim/prochloraz	1,232	5	0	0	<b>1,232</b>	2,961
Carbendazim/tebuconazole	778	2	0	0	<b>778</b>	353
Carbendazim/vinclozolin	7,642	29	0	0	<b>7,642</b>	5,862
Chlorothalonil	772	3	0	0	<b>772</b>	0
Cyproconazole/trifloxystrobin	467	2	0	0	<b>467</b>	0
Difenoconazole	2,280	6	173	4	<b>2,453</b>	337
Fenpropimorph	467	2	0	0	<b>467</b>	0
Flusilazole	4,628	15	0	0	<b>4,628</b>	7,614
Iprodione	355	1	0	0	<b>355</b>	93
Iprodione/thiophanate-methyl	2,729	10	0	0	<b>2,729</b>	5,264
Metconazole	14,185	36	1,338	30	<b>15,523</b>	7,300
Prochloraz/propiconazole	455	2	0	0	<b>455</b>	0
Prochloraz/tebuconazole	728	2	0	0	<b>728</b>	0
Propiconazole	154	1	0	0	<b>154</b>	0
Sulphur	5,760	17	765	17	<b>6,525</b>	10,216
Tebuconazole	14,432	44	0	0	<b>14,432</b>	23,709
Vinclozolin	8,628	33	461	10	<b>9,089</b>	7,334
<b>All fungicides</b>	<b>86,075</b>	<b>100</b>	<b>3,197</b>	<b>57</b>	<b>89,272</b>	<b>93,002</b>
Area grown	26,433		4,469		<b>30,902</b>	36,401





● **TABLE 12 Oilseed rape herbicide and growth regulator formulations**

Area treated (ha) and percentage of crop treated

<i>Herbicides</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed rape</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Benazolin	300	1	0	0	<b>300</b>	1,769
Benazolin/clopyralid	4,635	16	173	4	<b>4,807</b>	2,183
Clopyralid	594	2	0	0	<b>594</b>	731
Cyanazine	647	2	0	0	<b>647</b>	46
Diquat	1,001	4	0	0	<b>1,001</b>	3,236
Glyphosate	7,742	29	1,185	25	<b>8,927</b>	10,242
Metazachlor	17,912	67	0	0	<b>17,912</b>	24,032
Metazachlor/quinmerac	2,017	8	461	10	<b>2,478</b>	1,256
Propaquizafop	5,288	20	348	8	<b>5,636</b>	3,378
Propyzamide	5,969	23	0	0	<b>5,969</b>	4,999
Quizalofop-P-ethyl	163	1	0	0	<b>163</b>	892
Trifluralin	1,398	5	209	5	<b>1,607</b>	4,315
<b>All herbicides</b>	<b>47,665</b>	<b>98</b>	<b>2,376</b>	<b>41</b>	<b>50,041</b>	<b>60,698</b>
<b>Growth regulators</b>						
Chlormequat	36	+	0	0	<b>36</b>	5,147
<b>All growth regulators</b>	<b>36</b>	<b>+</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>5,147</b>
Area grown	26,433		4,469		<b>30,902</b>	36,401

'+' = < 0,5%

● **TABLE 13 Potato seed treatment formulations**

Area (ha) and percentage of crop treated

<i>Seed treatments</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Imazalil	3,607	26	2,321	15	0	0	<b>5,928</b>	9,212
Imazalil/pencycuron	6,738	49	7,174	46	0	0	<b>13,912</b>	8,975
Imazalil/thiabendazole	611	4	0	0	0	0	<b>611</b>	196
Pencycuron	3,438	25	5,156	33	0	0	<b>8,594</b>	7,001
Thiabendazole	178	1	0	0	0	0	<b>178</b>	0
Unspecified seed treatment	0	0	0	0	765	80	<b>765</b>	0
Area grown	13,787	91	15,465	85	951	80	<b>30,203</b>	29,689





● **TABLE 14 Potato insecticide and molluscicide formulations**

Area treated (ha) and percentage of crop treated

<i>Insecticides</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Aldicarb	0	0	1,944	13	0	0	<b>1,944</b>	2,414
Cypermethrin	3,717	8	0	0	0	0	<b>3,717</b>	7,594
Deltamethrin/pirimicarb	21,390	56	5,474	25	0	0	<b>26,865</b>	13,574
Dimethoate	376	3	0	0	0	0	<b>376</b>	1,181
Lambda-cyhalothrin	4,399	22	10,059	21	0	0	<b>14,458</b>	14,203
Lambda-cyhalothrin/pirimicarb	6,313	38	647	4	0	0	<b>6,960</b>	17,304
Pirimicarb	6,828	33	7,721	16	0	0	<b>14,549</b>	30,596
Pymetrozine	6,689	32	2,619	12	0	0	<b>9,307</b>	1,193
Zeta-cypermethrin	187	1	0	0	0	0	<b>187</b>	0
<b>All insecticides</b>	<b>49,898</b>	<b>91</b>	<b>28,464</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>78,362</b>	<b>94,157</b>
<b>Molluscicides</b>								
Metaldehyde	2,175	14	6,491	21	0	0	<b>8,666</b>	7,939
Methiocarb	4,214	9	9,139	29	765	80	<b>14,118</b>	5,400
Thiodicarb	0	0	7,762	15	0	0	<b>7,762</b>	10,234
<b>All molluscicides</b>	<b>6,389</b>	<b>30</b>	<b>23,392</b>	<b>44</b>	<b>765</b>	<b>80</b>	<b>30,546</b>	<b>23,573</b>
Area grown	13787		15465		951		<b>30,203</b>	29,689

● **TABLE 15 Potato fungicide formulations**

Area treated (ha) and percentage of crop treated

<i>Fungicides</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Benalaxyl/mancozeb	9,407	47	10,908	40	0	0	<b>20,315</b>	18,521
Bordeaux mixture	424	2	0	0	0	0	<b>424</b>	2,560
Chlorothalonil	375	3	0	0	0	0	<b>375</b>	912
Chlorothalonil/cymoxanil	284	1	680	4	0	0	<b>964</b>	1,240
Chlorothalonil/ propamocarb hydrochloride	1,124	7	5,384	14	0	0	<b>6,508</b>	1,435
Cyazofamid	4,233	31	5,487	24	0	0	<b>9,720</b>	0
Cymoxanil	310	2	9,508	28	0	0	<b>9,818</b>	0
Cymoxanil/famoxadone	546	4	6,732	22	0	0	<b>7,278</b>	0
Cymoxanil/mancozeb	35,721	76	41,730	78	0	0	<b>77,452</b>	41,750
Cymoxanil/mancozeb/oxadixyl	7,528	27	8,096	32	0	0	<b>15,624</b>	16,668
Dimethomorph/mancozeb	1,796	8	9,616	26	0	0	<b>11,412</b>	13,597
Fentin acetate/maneb	0	0	820	5	0	0	<b>820</b>	2,547
Fentin hydroxide	20,467	62	17,158	63	88	7	<b>37,712</b>	14,674
Fluazinam	14,087	38	17,947	53	765	80	<b>32,799</b>	46,146
Mancozeb	6,664	40	2,417	9	0	0	<b>9,081</b>	13,995
Mancozeb/metalaxyl	66	+	0	0	0	0	<b>66</b>	1,659
Mancozeb/metalaxyl-M	1,483	5	5,595	25	2,190	100	<b>9,267</b>	7,721
Mancozeb/ofurace	1,560	6	0	0	0	0	<b>1,560</b>	2,612
Mancozeb/zoxamide	5,087	34	5,530	20	0	0	<b>10,617</b>	0
Maneb	0	0	3	+	0	0	<b>3</b>	1,895
Sulphur	0	0	6,800	10	0	0	<b>6,800</b>	7,888
<b>All fungicides</b>	<b>111,162</b>	<b>100</b>	<b>154,413</b>	<b>98</b>	<b>3,042</b>	<b>100</b>	<b>268,617</b>	<b>202,153</b>
Area grown	13,787		15,465		951		<b>30,203</b>	29,689

‘+’ = < 0.5%







● **TABLE 16 Potato herbicide and growth regulator formulations**

Area treated (ha) and percentage of crop treated

<i>Herbicides</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Carfentrazone-ethyl	469	3	0	0	0	0	<b>469</b>	0
Diquat	3,822	16	3,865	17	802	82	<b>8,489</b>	3,782
Diquat/paraquat	5,189	38	11,773	76	765	80	<b>17,727</b>	13,746
Glufosinate-ammonium	0	0	475	3	0	0	<b>475</b>	196
Linuron	9,632	70	10,259	66	0	0	<b>19,892</b>	19,426
Metribuzin	1,827	13	2,810	18	765	80	<b>5,402</b>	3,414
Paraquat	7,869	57	3,291	21	186	20	<b>11,346</b>	12,750
Rimsulfuron	0	0	850	5	0	0	<b>850</b>	1,322
Sulphuric acid	21945	82	24566	83	0	0	<b>46,511</b>	39,421
Terbutylazine/terbutryn	0	0	1,809	12	0	0	<b>1,809</b>	1,047
Terbutryn/trietazine	0	0	103	1	0	0	<b>103</b>	956
<b>All herbicides</b>	<b>50,753</b>	<b>95</b>	<b>59,802</b>	<b>97</b>	<b>2,518</b>	<b>100</b>	<b>113,073</b>	<b>96,478</b>
<b>Growth regulators</b>								
Maleic hydrazide	0	0	1,333	9	0	0	<b>1,333</b>	1,110
<b>All growth regulators</b>	<b>0</b>	<b>0</b>	<b>1,333</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>1,333</b>	<b>1,110</b>
Area grown	13,787		15,465		951		<b>30,203</b>	29,689

● **TABLE 17 Set aside seed treatment formulations**

Area (ha) and percentage of crop treated

<i>Seed treatments</i>	<i>Set aside oilseed rape</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Fenpropimorph/gamma-HCH/thiram	366	9	0	0	0	0	<b>366</b>	1,151
Iprodione	1,094	27	0	0	0	0	<b>1,094</b>	1,935
Thiram	1,756	44	0	0	0	0	<b>1,756</b>	1,682
No seed treatment information	685	17	234	1	286	13	<b>1,205</b>	39
Unspecified seed treatment	746	19	0	0	0	0	<b>746</b>	731
Area grown	4,031		32,122		2,244		<b>*38,397</b>	77,665

\* – excluding natural regeneration and woodland





● **TABLE 18 Set aside insecticide and molluscicide formulations**

Area treated (ha) and percentage of crop treated

<i><b>Insecticides</b></i>	<i>Set aside oilseed rape</i>		<i>Set aside regeneration</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Alpha-cypermethrin	369	9	0	0	0	0	0	0	<b>369</b>	616
Cypermethrin	418	10	0	0	0	0	0	0	<b>418</b>	198
Lambda-cyhalothrin	957	24	0	0	0	0	0	0	<b>957</b>	390
Zeta-cypermethrin	500	12	0	0	0	0	0	0	<b>500</b>	272
<i><b>All insecticides</b></i>	<b>2,244</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,244</b>	<b>2,999</b>
<i><b>Molluscicides</b></i>										
Metaldehyde	366	9	0	0	0	0	0	0	<b>366</b>	181
Methiocarb	0	0	100	+	0	0	0	0	<b>100</b>	59
<i><b>All molluscicides</b></i>	<b>366</b>	<b>9</b>	<b>100</b>	<b>+</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>466</b>	<b>2,007</b>
Area grown	4031		47129		32122		2244		<b>*85,526</b>	77,665

'+' = < 0.5%

'\*' – excluding woodland

● **TABLE 19 Set aside fungicide formulations**

Area treated (ha) and percentage of crop treated

<i>Fungicides</i>	<i>Set aside oilseed rape</i>		<i>Set aside regeneration</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
Carbendazim	1,066	18	0	0	0	0	0	0	<b>1,066</b>	1,508
Carbendazim/flusilazole	356	9	0	0	0	0	0	0	<b>356</b>	1,982
Carbendazim/tebuconazole	363	9	0	0	0	0	0	0	<b>363</b>	0
Flusilazole	302	7	0	0	0	0	0	0	<b>302</b>	909
Metconazole	994	20	0	0	0	0	0	0	<b>994</b>	1,168
Prochloraz/tebuconazole	233	6	0	0	0	0	0	0	<b>233</b>	0
Sulphur	1,473	31	0	0	0	0	0	0	<b>1,473</b>	1,453
Vinclozolin	584	14	0	0	0	0	0	0	<b>584</b>	1,481
<b>All fungicides</b>	<b>5,370</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,370</b>	<b>12,552</b>
Area grown	4,031		47,129		32,122		2,244		<b>*85,526</b>	77,665

\* - excluding woodland





● **TABLE 20 Set aside herbicide formulations**

Area treated (ha) percentage of crop treated

<i>Herbicides</i>	<i>Set aside oilseed rape</i>		<i>Set aside regeneration</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>2000</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(ha)
2,4-D	0	0	0	0	286	1	0	0	<b>286</b>	0
2,4-DB/benazolin/MCPA	0	0	0	0	243	1	0	0	<b>243</b>	634
2,4-DB/linuron/MCPA	0	0	0	0	161	1	0	0	<b>161</b>	0
Benazolin/clopyralid	233	6	0	0	0	0	0	0	<b>233</b>	242
Bromoxynil/fluroxypyr/ioxynil	0	0	0	0	166	1	0	0	<b>166</b>	0
Bromoxynil/ioxynil	0	0	0	0	236	1	0	0	<b>236</b>	0
Fluroxypyr	0	0	0	0	236	1	0	0	<b>236</b>	60
Glyphosate	2,795	56	12,612	26	371	1	0	0	<b>15,777</b>	16,246
MCPA	0	0	238	1	0	0	0	0	<b>238</b>	1,384
MCPA/MCPB	0	0	0	0	169	1	0	0	<b>169</b>	0
Mecoprop-P	0	0	0	0	298	1	0	0	<b>298</b>	20
Metazachlor	1,482	31	0	0	0	0	0	0	<b>1,482</b>	2,357
Propyzamide	200	5	0	0	0	0	0	0	<b>200</b>	977
Trifluralin	653	16	0	0	0	0	0	0	<b>653</b>	425
Unspecified herbicides	0	0	0	0	286	1	0	0	<b>286</b>	193
<b>All herbicides</b>	<b>5,362</b>	<b>78</b>	<b>12,850</b>	<b>24</b>	<b>2,451</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>20,663</b>	<b>26,184</b>
Area grown	4,031		47,129		32,122		2,244		<b>*85,526</b>	77,665

\* - excluding woodland

● **TABLE 21 Cereals seed treatment active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

Seed treatments	Winter barley		Spring barley		Winter wheat		Spring wheat		Winter oats		Spring oats		*All cereals	*All cereals
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Bitertanol	0	0	547	+	35,706	37	304	36	555	10	4,254	26	<b>41,398</b>	4,881
Carboxin	2,827	5	7,177	3	5,679	6	0	0	59	1	808	5	<b>16,550</b>	2,008
Ethirimol	755	1	775	+	0	0	0	0	0	0	0	0	<b>1,531</b>	602
Fludioxonil	2,765	5	10,434	4	10,119	11	0	0	480	9	3,250	20	<b>27,048</b>	283
Fluquinconazole	0	0	0	0	5,556	6	0	0	0	0	0	0	<b>5,556</b>	824
Flutriafol	755	755	775	+	0	0	0	0	0	0	0	0	<b>1,531</b>	45
Fuberidazole	167	+	7,224	3	38,180	40	304	36	555	10	5,185	31	<b>51,647</b>	391
Guazatine	7,589	12	43,881	17	28,907	30	538	64	3,448	63	4,756	29	<b>89,414</b>	11,798
Imazalil	3,162	5	7,248	3	0	0	0	0	0	0	0	0	<b>10,410</b>	110
Imidacloprid	0	0	0	0	1,793	2	0	0	0	0	0	0	<b>1,793</b>	122
Prochloraz	0	0	0	0	5,556	6	0	0	0	0	0	0	<b>5,556</b>	154
Tebuconazole	39,639	65	164,604	62	0	0	0	0	0	0	0	0	<b>204,243</b>	1,268
Tefluthrin	0	0	0	0	1,114	1	0	0	0	0	0	0	<b>1,114</b>	48
Thiabendazole	755	1	775	+	0	0	0	0	0	0	0	0	<b>1,531</b>	15
Thiram	2,827	5	7,177	3	5,679	6	0	0	59	1	808	5	<b>16,550</b>	2,008
Triadimenol	167	+	6,677	3	2,475	3	0	0	0	0	931	6	<b>10,249</b>	766
Triazoxide	39,639	65	164,604	62	0	0	0	0	0	0	0	0	<b>204,243</b>	1,268
Triticonazole	2,827	5	2,124	1	5,219	5	156	19	0	0	0	0	<b>10,325</b>	108
Unspecified seed treatment	0	0	1,353	1	1,563	2	0	0	240	4	733	4	<b>3,889</b>	0
No seed treatment information	2,413	4	8,183	3	2,630	3	0	0	0	0	450	3	<b>13,676</b>	0
Area grown	61,234	96	263,914	93	96,350	96	842	100	5,430	88	16,477	92	<b>445,512</b>	

\*\* includes triticale '+' = < 0.5%





● **TABLE 22 Cereals insecticide and molluscicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Insecticides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>*All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
<b><i>Pyrethroids</i></b>														
Alpha-cypermethrin	1,542	3	0	0	3,757	3	0	0	0	0	0	0	<b>5,299</b>	80
Cypermethrin	6,698	11	78	+	12,408	13	0	0	1,295	24	0	0	<b>20,478</b>	487
Deltamethrin	2,841	5	0	0	2,283	2	0	0	0	0	0	0	<b>5,123</b>	22
Esfenvalerate	4,324	7	0	0	7,272	8	0	0	216	4	0	0	<b>11,812</b>	40
Lambda-cyhalothrin	813	1	0	0	5,933	6	0	0	0	0	187	1	<b>6,932</b>	34
Zeta-cypermethrin	1,885	3	174	+	1,627	2	0	0	0	0	479	3	<b>4,164</b>	46
<b><i>All pyrethroids</i></b>	<b>18,101</b>	<b>0</b>	<b>252</b>	<b>0</b>	<b>33,280</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,511</b>	<b>0</b>	<b>665</b>	<b>0</b>	<b>53,809</b>	<b>709</b>
<b><i>Carbamates</i></b>														
Pirimicarb	0	0	0	0	5,430	6	0	0	0	0	0	0	<b>5,430</b>	504
<b><i>All carbamates</i></b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,430</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,430</b>	<b>504</b>
<b><i>Organophosphates</i></b>														
Chlorpyrifos	0	0	5,898	2	1,486	2	0	0	0	0	197	1	<b>7,581</b>	4,896
Dimethoate	0	0	0	0	549	0	0	0	0	0	0	0	<b>549</b>	373
<b><i>All organophosphates</i></b>	<b>0</b>	<b>0</b>	<b>5,898</b>	<b>0</b>	<b>2,034</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>197</b>	<b>0</b>	<b>8,130</b>	<b>5,269</b>
<b><i>All insecticides</i></b>	<b>18,101</b>	<b>29</b>	<b>6,150</b>	<b>2</b>	<b>40,744</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>1,511</b>	<b>28</b>	<b>863</b>	<b>5</b>	<b>67,368</b>	6,482
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	

\*\* includes triticale '+' = < 0.5%

Cont...

● **TABLE 22 Cereals insecticide and molluscicide active ingredients continued**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Molluscicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>* All cereals</i>	<i>* All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Metaldehyde	1,984	3	0	0	16,996	14	0	0	0	0	0	0	<b>18,980</b>	6,351
Methiocarb	0	0	0	0	9,177	8	0	0	0	0	0	0	<b>9,177</b>	1,062
Thiodicarb	284	+	0	0	6,324	5	0	0	500	9	0	0	<b>7,108</b>	779
<b><i>All molluscicides</i></b>	<b>2,268</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>32,497</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>500</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>35,265</b>	<b>8,192</b>
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	

\* \* includes triticale '+' = < 0.5%







● **TABLE 23 Cereals fungicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Fungicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>*All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Azoxystrobin	16,937	23	53,003	19	62,976	54	538	64	791	5	231	1	<b>134,475</b>	12,610
Bromuconazole	1,632	3	4,266	2	2,198	2	0	0	0	0	0	0	<b>8,096</b>	1,211
Carbendazim	6,657	9	18,780	6	2,920	3	0	0	0	0	0	0	<b>28,356</b>	1,998
Chlorothalonil	930	2	3,853	1	19,320	18	0	0	0	0	0	0	<b>24,103</b>	9,914
Cyproconazole	11,350	18	21,648	8	28,524	23	0	0	229	4	682	4	<b>62,433</b>	2,098
Cyprodinil	35,033	45	58,608	22	32,611	32	0	0	0	0	467	3	<b>126,718</b>	34,620
Difenoconazole	0	0	0	0	606	1	0	0	0	0	0	0	<b>606</b>	23
Epoxiconazole	34,615	45	72,260	24	97,793	67	1,090	100	2,548	30	5,042	24	<b>213,645</b>	10,819
Famoxadone	16,893	22	26,700	9	24,236	22	0	0	0	0	0	0	<b>67,828</b>	3,687
Fenbuconazole	0	0	0	0	2,390	2	0	0	0	0	0	0	<b>2,390</b>	116
Fenpropidin	622	1	0	0	20,947	17	0	0	264	5	124	1	<b>21,957</b>	2,944
Fenpropimorph	70,416	76	198,055	57	56,899	40	151	18	4,031	60	8,235	45	<b>337,787</b>	64,916
Fluquinconazole	0	0	0	0	17,449	17	0	0	264	5	0	0	<b>17,712</b>	946
Flusilazole	46,527	55	124,743	38	25,827	23	0	0	0	0	915	6	<b>198,012</b>	14,151
Flutriafol	0	0	0	0	786	1	0	0	0	0	0	0	<b>786</b>	53
Kresoxim-methyl	24,569	31	69,161	23	57,775	43	151	18	2,207	30	4,879	24	<b>158,741</b>	8,529
Mancozeb	151	+	926	+	2,160	2	0	0	0	0	0	0	<b>3,237</b>	1,671
Maneb	0	0	0	0	2,708	3	0	0	0	0	0	0	<b>2,708</b>	1,523

\*' includes triticale '+' = < 0.5%

Cont...

● **TABLE 23 Cereals fungicide active ingredients continued**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Fungicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>*All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Metconazole	2,347	4	7,216	2	18,648	18	0	0	0	0	0	0	<b>28,211</b>	794
Picoxystrobin	16,747	20	27,783	10	3,968	4	0	0	229	4	278	1	<b>49,005</b>	5,448
Prochloraz	3,907	6	9,823	4	20,704	18	0	0	0	0	0	0	<b>34,434</b>	6,428
Propiconazole	4,693	7	9,374	3	18,118	13	0	0	500	9	0	0	<b>32,685</b>	1,699
Pyraclostrobin	4,925	8	24,842	8	55,653	41	0	0	0	0	35	+	<b>85,455</b>	6,783
Quinoxifen	475	1	25,546	9	21,372	17	0	0	2,758	42	5,866	33	<b>56,018</b>	2,736
Spiroxamine	13,197	16	31,349	11	16,247	14	0	0	0	0	288	1	<b>61,082</b>	11,510
Sulphur	7,227	11	16,570	6	16,386	14	0	0	0	0	2,741	15	<b>42,924</b>	127,512
Tebuconazole	0	0	3,333	1	60,628	52	538	64	264	5	0	0	<b>64,762</b>	4,888
Tetraconazole	0	0	126	+	1,470	1	0	0	487	4	1,334	4	<b>3,416</b>	182
Triadimenol	0	0	0	0	16,318	16	0	0	264	5	0	0	<b>16,581</b>	667
Tridemorph	0	0	658	+	0	0	0	0	0	0	0	0	<b>658</b>	62
Trifloxystrobin	24,566	36	40,451	15	24,854	21	401	30	0	0	0	0	<b>90,442</b>	8,712
Unspecified fungicide	0	0	1,117	+	0	0	0	0	0	0	0	0	<b>1,117</b>	0
<b>All fungicides</b>	<b>344,416</b>	<b>96</b>	<b>850,190</b>	<b>90</b>	<b>732,489</b>	<b>100</b>	<b>2,869</b>	<b>100</b>	<b>14,833</b>	<b>80</b>	<b>31,117</b>	<b>68</b>	<b>1,976,211</b>	<b>349,249</b>
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	

\*+ includes triticale '+' = < 0.5%



● **TABLE 24 Cereals herbicide and growth regulator active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Herbicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>*All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
2,4-DB	0	0	10,471	4	0	0	0	0	0	0	388	2	<b>10,858</b>	12,612
Amidosulfuron	0	0	4,990	2	0	0	0	0	0	0	0	0	<b>4,990</b>	81
Benazolin	0	0	18,757	7	3,381	4	156	19	0	0	717	4	<b>23,010</b>	1,934
Bentazone	0	0	1,391	1	0	0	0	0	0	0	0	0	<b>1,391</b>	1,346
Bromoxynil	1,527	2	58,678	22	5,302	6	156	19	326	6	3,501	21	<b>69,489</b>	8,607
Carfentrazone-ethyl	310	1	2,509	1	0	0	0	0	1,185	22	71	+	<b>4,075</b>	47
Clodinafop-propargyl	0	0	0	0	2,834	3	0	0	0	0	0	0	<b>2,834</b>	53
Cyanazine	151	+	0	0	453	+	0	0	0	0	0	0	<b>604</b>	113
Dicamba	1,169	2	32,026	12	2,256	2	279	33	59	1	2,407	15	<b>38,196</b>	1,683
Dichlorprop-P	0	0	2,572	1	0	0	0	0	0	0	0	0	<b>2,572</b>	1,580
Diclofop-methyl	0	0	611	+	390	+	0	0	0	0	0	0	<b>1,001</b>	351
Diflufenican	26,716	44	1,932	1	38,986	40	0	0	0	0	0	0	<b>67,634</b>	3,393
Fenoxaprop-P-ethyl	0	0	611	+	7,458	8	0	0	0	0	0	0	<b>8,070</b>	327
Flamprop-M-isopropyl	0	0	147	+	0	0	0	0	0	0	197	1	<b>344</b>	207
Florasulam	333	+	0	0	30	+	0	0	0	0	0	0	<b>363</b>	1
Flufenacet	304	+	0	0	251	+	0	0	0	0	0	0	<b>555</b>	81
Flupyr-sulfuron-methyl	0	0	0	0	2,606	3	0	0	1,185	22	0	0	<b>3,791</b>	22
Fluroxypyr	6,201	6	6,659	3	4,133	4	156	19	229	4	24	+	<b>17,402</b>	1,389
Flurtamone	6,402	10	0	0	6,551	7	0	0	0	0	0	0	<b>12,953</b>	1,374

\*' includes triticale '+' = < 0.5%

Cont...

● **TABLE 24 Cereals herbicide and growth regulator active ingredients continued**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Herbicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>*All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Glyphosate	15,336	25	38,036	14	12,438	12	25	3	0	0	1,346	8	<b>67,181</b>	51,871
Iodosulfuron-methyl-sodium	0	0	4,990	2	0	0	0	0	0	0	0	0	<b>4,990</b>	8
Ioxynil	1,527	2	58,087	22	5,302	6	156	19	326	6	3,501	21	<b>68,898</b>	7,351
Isoproturon	43,652	69	1,118	+	64,892	66	0	0	264	5	0	0	<b>109,925</b>	95,418
Linuron	0	0	2,036	1	0	0	0	0	0	0	0	0	<b>2,036</b>	204
MCPA	464	1	30,689	12	0	0	0	0	0	0	2,008	12	<b>33,161</b>	22,513
MCPB	0	0	2,768	1	0	0	0	0	0	0	0	0	<b>2,768</b>	2,565
Mecoprop-P	16,605	27	145,371	55	39,990	39	661	78	2,266	33	7,577	42	<b>212,783</b>	109,557
Metsulfuron-methyl	11,869	19	160,253	60	28,530	29	817	97	3,098	57	7,307	44	<b>212,170</b>	668
Pendimethalin	18,607	30	0	0	23,122	24	0	0	264	5	0	0	<b>41,992</b>	28,224
Picolinafen	11,399	19	0	0	11,822	12	0	0	0	0	0	0	<b>23,221</b>	762
Propoxycarbazone-sodium	0	0	0	0	0	0	25	3	0	0	0	0	<b>25</b>	1
Simazine	347	1	0	0	3,276	3	0	0	264	5	0	0	<b>3,887</b>	579
Sulfosulfuron	0	0	0	0	800	1	0	0	0	0	0	0	<b>800</b>	6

‘\*’ includes triticale ‘+’ = &lt; 0.5%

Cont...





● **TABLE 24 Cereals herbicide and growth regulator active ingredients continued**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Herbicides</i>	<i>Winter barley</i>		<i>Spring barley</i>		<i>Winter wheat</i>		<i>Spring wheat</i>		<i>Winter oats</i>		<i>Spring oats</i>		<i>*All cereals</i>	<i>*All cereals</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Terbutylazine	1,387	2	0	0	2,259	2	0	0	0	0	0	0	<b>3,647</b>	379
Terbutryn	0	0	0	0	0	0	0	0	667	12	0	0	<b>667</b>	983
Thifensulfuron-methyl	6,827	11	147,634	56	25,542	27	279	33	326	6	804	5	<b>181,428</b>	3,860
Tralkoxydim	3,126	5	33,952	13	433	+	0	0	0	0	0	0	<b>37,510</b>	6,524
Triasulfuron	0	0	3,574	1	0	0	0	0	0	0	0	0	<b>3,574</b>	16
Tribenuron-methyl	6,310	10	66,972	25	11,068	11	0	0	1,188	22	3,922	24	<b>89,476</b>	682
Trifluralin	6,155	10	9	+	9,665	10	0	0	0	0	0	0	<b>15,830</b>	9,800
Unspecified herbicides	0	0	587	+	373	+	0	0	0	0	0	0	<b>960</b>	0
<b>All herbicides</b>	<b>186,725</b>	<b>97</b>	<b>837,429</b>	<b>97</b>	<b>314,140</b>	<b>97</b>	<b>2,708</b>	<b>100</b>	<b>11,647</b>	<b>100</b>	<b>33,770</b>	<b>85</b>	<b>1,387,061</b>	<b>37,5875</b>
<b>Growth regulators</b>														
2-chloroethylphosphonic acid	26,030	43	14,560	6	28,635	28	0	0	0	0	302	<b>2</b>	<b>70,019</b>	11,177
Chlormequat	57,462	68	21,283	6	135,098	94	784	82	2,915	54	7,349	<b>45</b>	<b>225,486</b>	166,932
Imazaquin	0	0	0	0	36,542	27	0	0	0	0	0	<b>0</b>	<b>36,542</b>	33
Mepiquat chloride	7,489	12	3,910	1	7,652	8	0	0	0	0	0	<b>0</b>	<b>19,542</b>	4,772
Trinexapac-ethyl	24,814	41	5,864	2	38,918	37	0	0	3,294	56	1,683	<b>9</b>	<b>74,572</b>	3,103
<b>All growth regulators</b>	<b>115,795</b>	<b>85</b>	<b>45,618</b>	<b>10</b>	<b>246,845</b>	<b>97</b>	<b>784</b>	<b>82</b>	<b>6,209</b>	<b>88</b>	<b>9,334</b>	<b>49</b>	<b>426,160</b>	<b>186,017</b>
Area grown	61,234		263,914		96,350		842		5,430		16,477		<b>445,512</b>	

\*' includes triticale '+' = < 0.5%

● **TABLE 25 Oilseed rape seed treatment active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Seed treatments</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed</i>	<i>All oilseed</i>
	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Beta-cyfluthrin	3,679	14	0	0	<b>3,679</b>	39
Fenpropimorph	536	2	0	0	<b>536</b>	2
Gamma-HCH	536	2	0	0	<b>536</b>	30
Guazatine*	0	0	15	+	<b>15</b>	+
Imidacloprid	3,679	14	0	0	<b>3,679</b>	39
Iprodione	12,791	48	424	9	<b>13,215</b>	153
Methiocarb	508	2	46	1	<b>554</b>	131
Thiram	10,610	40	2,527	57	<b>13,137</b>	210
Triticonazole*	0	0	15	+	<b>15</b>	+
Unspecified seed treatment	478	2	573	13	<b>1,051</b>	0
No seed treatment information	3,959	15	1,829	41	<b>5,788</b>	0
Area grown	26,433		4,469		<b>30,902</b>	

‘+’ = < 0.5% and < 0.5kg

‘\*’ – applied to a failed winter wheat crop, reseeded with spring oilseed rape.





● **TABLE 26 Oilseed rape insecticide and molluscicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Insecticides</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed</i>	<i>All oilseed</i>
	(ha)	(%)	(ha)	(%)	(ha)	(kg)
<b><i>Pyrethroids</i></b>						
Alpha-cypermethrin	4,891	19	1,326	30	<b>6,217</b>	98
Cypermethrin	5,293	18	1,447	32	<b>6,739</b>	163
Deltamethrin	1,288	5	461	10	<b>1,749</b>	12
Lambda-cyhalothrin	6,849	22	573	13	<b>7,422</b>	42
Zeta-cypermethrin	2,100	8	234	5	<b>2,334</b>	23
<b><i>All pyrethroids</i></b>	<b>20,420</b>		<b>4,041</b>		<b>24,461</b>	<b>338</b>
<b><i>Organophosphates</i></b>						
Dimethoate	305	1	0	0	<b>305</b>	76
<b><i>All organophosphates</i></b>	<b>305</b>		<b>0</b>		<b>305</b>	<b>76</b>
<b><i>Other</i></b>						
Nicotine	468	2	0	0	<b>468</b>	44
<b><i>All other</i></b>	<b>468</b>		<b>0</b>		<b>468</b>	<b>44</b>
<b><i>All insecticides</i></b>	<b>21,193</b>	<b>67</b>	<b>4,041</b>	<b>80</b>	<b>25,234</b>	<b>458</b>
<b><i>Molluscicides</i></b>						
Metaldehyde	6,397	22	0	0	<b>6,397</b>	1,969
Methiocarb	3,495	11	0	0	<b>3,495</b>	319
Thiodicarb	711	3	461	10	<b>1,172</b>	131
<b><i>All molluscicides</i></b>	<b>10,602</b>	<b>34</b>	<b>461</b>	<b>10</b>	<b>11,063</b>	<b>2,419</b>
Area grown	26,433		4,469		<b>30,902</b>	

● **TABLE 27 Oilseed rape fungicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Fungicides</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed</i>	<i>All oilseed</i>
	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Carbendazim	29,231	83	461	10	<b>29,692</b>	5,701
Chlorothalonil	772	3	0	0	<b>772</b>	518
Cyproconazole	467	2	0	0	<b>467</b>	18
Difenoconazole	2,280	6	173	4	<b>2,453</b>	194
Fenpropimorph	467	2	0	0	<b>467</b>	133
Flusilazole	13,584	40	0	0	<b>13,584</b>	1,469
Iprodione	3,494	13	0	0	<b>3,494</b>	1,209
Metconazole	14,185	36	1,338	30	<b>15,523</b>	530
Prochloraz	2,415	9	0	0	<b>2,415</b>	498
Propiconazole	609	2	0	0	<b>609</b>	22
Sulphur	5,760	17	765	17	<b>6,525</b>	22,950
Tebuconazole	15,937	48	0	0	<b>15,937</b>	2,117
Thiophanate-methyl	2,729	10	0	0	<b>2,729</b>	936
Trifloxystrobin	467	2	0	0	<b>467</b>	43
Vinclozolin	16,123	61	461	10	<b>16,583</b>	5,459
<b>All fungicides</b>	<b>108,521</b>	<b>100</b>	<b>3,197</b>	<b>57</b>	<b>111,718</b>	<b>41,797</b>
Area grown	26,433		4,469		<b>30,902</b>	







● **TABLE 28 Oilseed rape herbicide and growth regulator active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Herbicides</i>	<i>Winter oilseed rape</i>		<i>Spring oilseed rape</i>		<i>All oilseed</i>	<i>All oilseed</i>
	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Benazolin	4,934	17	173	4	<b>5,107</b>	929
Clopyralid	5,195	18	173	4	<b>5,368</b>	216
Cyanazine	647	2	0	0	<b>647</b>	324
Diquat	1,001	4	0	0	<b>1,001</b>	575
Glyphosate	7,742	29	1,185	25	<b>8,927</b>	10,450
Metazachlor	19,566	73	461	10	<b>20,027</b>	12,698
Propaquizafop	5,288	20	348	8	<b>5,636</b>	242
Propyzamide	5,969	23			<b>5,969</b>	2,821
Quinmerac	2,017	8	461	10	<b>2,478</b>	558
Quizalofop-P-ethyl	163	1			<b>163</b>	4
Trifluralin	1,398	5	209	5	<b>1,607</b>	1,401
<b>All herbicides</b>	<b>53,920</b>	<b>98</b>	<b>3,009</b>	<b>41</b>	<b>56,930</b>	<b>30,218</b>
<b>Growth regulators</b>						
Chlormequat	36	+	0	0	<b>36</b>	51
<b>All growth regulators</b>	<b>36</b>	<b>+</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>51</b>
Area grown	26,433		4,469		<b>30,902</b>	

'+' = < 0.5%

● **TABLE 29 Potato seed treatment active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Seed treatments</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>All potatoes</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Imazalil	10,955	79	9,040	58	0	0	<b>19,995</b>	740
Pencycuron	10,176	74	12,330	80	0	0	<b>22,506</b>	15,329
Thiabendazole	789	6	0	0	0	0	<b>789</b>	109
Unspecified seed treatment	0	0	0	0	765	80	<b>765</b>	0
Area grown	13,787		15,465		951		<b>30,203</b>	





● **TABLE 30 Potato insecticide, molluscicide and nematicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i><b>Insecticides</b></i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>All potatoes</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
<i><b>Pyrethroids</b></i>								
Cypermethrin	3,717	8	0	0	0	0	<b>3,717</b>	96
Deltamethrin	21,390	56	5,474	25	0	0	<b>26,865</b>	151
Lambda-cyhalothrin	10,712	51	10,706	25	0	0	<b>21,418</b>	137
Zeta-cypermethrin	187	1	0	0	0	0	<b>187</b>	2
<i><b>All pyrethroids</b></i>	<b>36,006</b>	<b>0</b>	<b>16,180</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52,186</b>	<b>0</b>
<i><b>Carbamates</b></i>								
Aldicarb	0	0	1,944	13	0	0	<b>1,944</b>	2,506
Pirimicarb	34,531	85	13,842	40	0	0	<b>48,373</b>	4,554
<i><b>All carbamates</b></i>	<b>34,531</b>	<b>0</b>	<b>15,786</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50,317</b>	<b>0</b>
<i><b>Organophosphates</b></i>								
Dimethoate	376	3	0	0	0	0	<b>376</b>	30
<i><b>All organophosphates</b></i>	<b>376</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>376</b>	<b>0</b>
<i><b>Other</b></i>								
Pymetrozine	6,689	32	2,619	12	0	0	<b>9,307</b>	753
<i><b>All other</b></i>	<b>6,689</b>	<b>0</b>	<b>2,619</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9,307</b>	<b>0</b>
<i><b>All insecticides</b></i>	<b>77,601</b>	<b>91</b>	<b>34,586</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>112,187</b>	<b>8,229</b>
<i><b>Molluscicides</b></i>								
Metaldehyde	2,175	14	6,491	21	0	0	<b>8,666</b>	2,903
Methiocarb	4,214	19	9,139	29	765	80	<b>14,118</b>	1,432
Thiodicarb	0	0	7,762	15	0	0	<b>7,762</b>	1,041
<i><b>All molluscicides</b></i>	<b>6,389</b>	<b>30</b>	<b>23,392</b>	<b>44</b>	<b>765</b>	<b>80</b>	<b>30,547</b>	<b>5,376</b>
Area grown	13787		15465		951		<b>30,203</b>	

● **TABLE 31 Potato fungicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Fungicides</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>All potatoes</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Benalaxyl	9,407	47	10,908	40	0	0	<b>20,315</b>	2,916
Bordeaux mixture	424	2	0	0	0	0	<b>424</b>	381
Chlorothalonil	1,783	10	6,064	18	0	0	<b>7,848</b>	6,474
Cyazofamid	4,233	31	5,487	24	0	0	<b>9,720</b>	778
Cymoxanil	44,389	88	66,747	91	0	0	<b>111,136</b>	9,918
Dimethomorph	1,796	8	9,616	26	0	0	<b>11,412</b>	1,660
Famoxadone	546	4	6,732	22	0	0	<b>7,278</b>	1,120
Fentin acetate	0	0	820	5	0	0	<b>820</b>	236
Fentin hydroxide	20,467	62	17,158	63	88	7	<b>37,712</b>	7,134
Fluazinam	14,087	38	17,947	53	765	80	<b>32,799</b>	4,640
Mancozeb	65,168	91	79,792	96	2,190	100	<b>147,149</b>	194,854
Maneb	0	0	824	5	0	0	<b>824</b>	74
Metalaxyl	66	+	0	0	0	0	<b>66</b>	9
Metalaxyl-M	1,483	5	5,595	25	2,190	100	<b>9,267</b>	670
Ofurace	1,560	6	0	0	0	0	<b>1,560</b>	181
Oxadixyl	7,528	27	8,096	32	0	0	<b>15,624</b>	3,027
Propamocarb hydrochloride	1,124	7	5,384	14	0	0	<b>6,508</b>	5,373
Sulphur	0	0	6,800	10	0	0	<b>6,800</b>	25,976
Zoxamide	5,087	34	5,530	20	0	0	<b>10,617</b>	1,383
<b>All fungicides</b>	<b>179,148</b>	<b>100</b>	<b>253,501</b>	<b>98</b>	<b>5,232</b>	<b>100</b>	<b>437,881</b>	<b>266,805</b>
Area grown	13,787		15,465		951		<b>30,203</b>	

‘+’ = < 0.5%





● **TABLE 32 Potato herbicide and growth regulator active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Herbicides</i>	<i>Seed potatoes</i>		<i>Ware potatoes</i>		<i>Early potatoes</i>		<i>All potatoes</i>	<i>All potatoes</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Carfentrazone-ethyl	469	3	0	0	0	0	<b>469</b>	28
Diquat	9,011	53	15,639	80	1,567	82	<b>26,216</b>	7,441
Glufosinate-ammonium	0	0	475	3	0	0	<b>475</b>	214
Linuron	9,632	70	10,259	66	0	0	<b>19,892</b>	18,952
Metribuzin	1,827	13	2,810	18	765	80	<b>5,402</b>	2,917
Paraquat	13,058	95	15,064	97	951	100	<b>29,073</b>	10,766
Rimsulfuron	0	0	850	5	0	0	<b>850</b>	10
Sulphuric acid	21,945	82	24,566	83	0	0	<b>46,511</b>	6,319,919
Terbuthylazine	0	0	1,809	12	0	0	<b>1,809</b>	777
Terbutryn	0	0	1,912	12	0	0	<b>1,912</b>	1,876
Trietazine	0	0	103	1	0	0	<b>103</b>	64
<b>All herbicides</b>	<b>55,942</b>	<b>95</b>	<b>73,487</b>	<b>97</b>	<b>3,283</b>	<b>100</b>	<b>132,712</b>	<b>6,362,964</b>
<b>Growth regulators</b>								
Maleic hydrazide	0	0	1,333	9	0	0	<b>1,333</b>	4,000
<b>All growth regulators</b>	<b>0</b>	<b>0</b>	<b>1,333</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>1,333</b>	<b>4,000</b>
<i>Area grown</i>	13,787		15,465		951		<b>30,203</b>	

● **TABLE 33 Set aside seed treatment active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Seed treatments</i>	<i>Set aside oilseed rape</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>All set aside</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Fenpropimorph	366	9	0	0	0	0	<b>366</b>	2
Gamma-HCH	366	9	0	0	0	0	<b>366</b>	22
Iprodione	1,094	27	0	0	0	0	<b>1,094</b>	15
Thiram	2,122	53	0	0	0	0	<b>2,122</b>	31
Unspecified seed treatment	746	19	0	0	0	0	<b>746</b>	0
No seed treatment information	685	17	0	0	0	0	<b>685</b>	0
Area grown	4,031		32,122		2,244		<b>*38,397</b>	

\*\* – excluding natural regeneration and woodland





● **TABLE 34 Set aside insecticide and molluscicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i><b>Insecticides</b></i>	<i>Set aside oilseed rape</i>		<i>Set aside regeneration</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>All set aside</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
<i><b>Pyrethroids</b></i>										
Alpha-cypermethrin	369	9	0	0	0	0	0	0	<b>369</b>	5
Cypermethrin	418	10	0	0	0	0	0	0	<b>418</b>	10
Lambda-cyhalothrin	957	24	0	0	0	0	0	0	<b>957</b>	6
Zeta-cypermethrin	500	12	0	0	0	0	0	0	<b>500</b>	5
<i><b>All pyrethroids</b></i>	<b>2,244</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>2,244</b>	<b>26</b>
<i><b>All insecticides</b></i>	<b>2,244</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,244</b>	<b>26</b>
<i><b>Molluscicides</b></i>										
Metaldehyde	366	9	0	0	0	0	0	0	<b>366</b>	253
Methiocarb	0	0	100	+	0	0	0	0	<b>100</b>	14
<i><b>All molluscicides</b></i>	<b>366</b>	<b>9</b>	<b>100</b>	<b>+</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>466</b>	<b>267</b>
Area grown	4,031		47,129		32,122		2,244		<b>*85,526</b>	

'+' = < 0.5%

'\*' – excluding woodland

● **TABLE 35 Set aside fungicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Fungicides</i>	<i>Set aside oilseed rape</i>		<i>Set aside regeneration</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>All set aside</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
Carbendazim	1,784	23	0	0	0	0	0	0	<b>1,784</b>	519
Flusilazole	658	16	0	0	0	0	0	0	<b>658</b>	75
Metconazole	994	20	0	0	0	0	0	0	<b>994</b>	33
Prochloraz	233	6	0	0	0	0	0	0	<b>233</b>	40
Sulphur	1,473	31	0	0	0	0	0	0	<b>1,473</b>	5,797
Tebuconazole	596	9	0	0	0	0	0	0	<b>596</b>	67
Vinclozolin	584	14	0	0	0	0	0	0	<b>584</b>	131
<b>All fungicides</b>	<b>6,322</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,322</b>	<b>6,667</b>
Area grown	4,031		47,129		32,122		2,244		<b>*85,526</b>	

\* - excluding woodland





● **TABLE 36 Set aside herbicide active ingredients**

Area treated (ha), percentage of crop treated, and weights (kg) of active ingredients for all crops

<i>Herbicides</i>	<i>Set aside oilseed rape</i>		<i>Set aside regeneration</i>		<i>Set aside grass</i>		<i>Set aside cover crop</i>		<i>All set aside*</i>	<i>All set aside</i>
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(kg)
2,4-D	0	0	0	0	286	1	0	0	<b>286</b>	300
2,4-DB	0	0	0	0	404	1	0	0	<b>404</b>	552
Benazolin	233	6	0	0	243	1	0	0	<b>476</b>	74
Bromoxynil	0	0	0	0	402	1	0	0	<b>402</b>	41
Clopyralid	233	6	0	0	0	0	0	0	<b>233</b>	5
Fluroxypyr	0	0	0	0	402	1	0	0	<b>402</b>	41
Glyphosate	2,795	56	11,792	24	371	1	0	0	<b>14,587</b>	16,693
Ioxynil	0	0	0	0	402	1	0	0	<b>402</b>	41
Linuron	0	0	0	0	161	1	0	0	<b>161</b>	20
MCPA	0	0	238	1	573	2	0	0	<b>811</b>	208
MCPB	0	0	0	0	169	1	0	0	<b>169</b>	177
Mecoprop-P	0	0	0	0	298	1	0	0	<b>298</b>	188
Metazachlor	1,482	31	0	0	0	0	0	0	<b>1,482</b>	963
Propyzamide	200	5	0	0	0	0	0	0	<b>200</b>	150
Trifluralin	653	16	0	0	0	0	0	0	<b>653</b>	482
Unspecified herbicides	0	0	0	0	286	1	0	0	<b>286</b>	0
<b>All herbicides</b>	<b>5,595</b>	<b>78</b>	<b>12,030</b>	<b>24</b>	<b>3,994</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>21,620</b>	<b>19,935</b>
Area grown	4,031		47,129		32,122		2,244		<b>*85,526</b>	

\* - excluding woodland

● **TABLE 37 Principal active ingredients**

Area (area treated × 1000) treated with the 50 most used active ingredients, including seed treatments, on all crops surveyed

	<i>Ai</i>	<i>Type</i>	2002	200
1	Fenpropimorph	F/S	339	336
2	Tebuconazole	F/S	286	282
3	Chlormequat	G	226	222
4	Epoxiconazole	F	214	236
5	Mecoprop-P	H	213	227
6	Flusilazole	F	212	181
7	Metsulfuron-methyl	H	212	194
8	Triazoxide	S	204	192
9	Thifensulfuron-methyl	H	181	144
10	Kresoxim-methyl	F	159	188
11	Mancozeb	F	151	117
12	Azoxystrobin	F	135	173
13	Cyprodinil	F	127	152
14	Cymoxanil	F	111	60
15	Isoproturon	H	110	121
16	Glyphosate	H	92	110
17	Trifloxystrobin	F	91	133
18	Tribenuron-methyl	H	89	58
19	Guazatine	S	89	109
20	Pyraclostrobin	F	85	0
21	Famoxadone	F	75	0
22	Trinexapac-ethyl	G	75	80
23	2-chloroethylphosphonic acid	G	70	81
24	Bromoxynil	H	70	69
25	Ioxynil	H	69	65
26	Diflufenican	H	68	88
27	Cyproconazole	F	63	68
28	Spiroxamine	F	61	43
29	Carbendazim	F	60	89
30	Sulphur	F	58	49
31	Quinoxifen	F	56	46
32	Pirimicarb	I	54	64
33	Fuberidazole	S	52	54
34	Picoxystrobin	F	49	0
35	Sulphuric acid	H	47	40
36	Metconazole	F	45	31
37	Pendimethalin	H	43	43
38	Prochloraz	F	43	56
39	Bitertanol	S	41	44
40	Dicamba	H	38	32
41	Fentin hydroxide	F	38	15
42	Tralkoxydim	H	38	38
43	Lambda-cyhalothrin	I	37	48
44	Imazaquin	G	37	30
45	Metaldehyde	M	34	27
46	MCPA	H	34	44
47	Chlorothalonil	F	34	34
48	Deltamethrin	I	34	29
49	Propiconazole	F	33	53
50	Fluazinam	F	33	46

● **TABLE 38 Principal active ingredients**

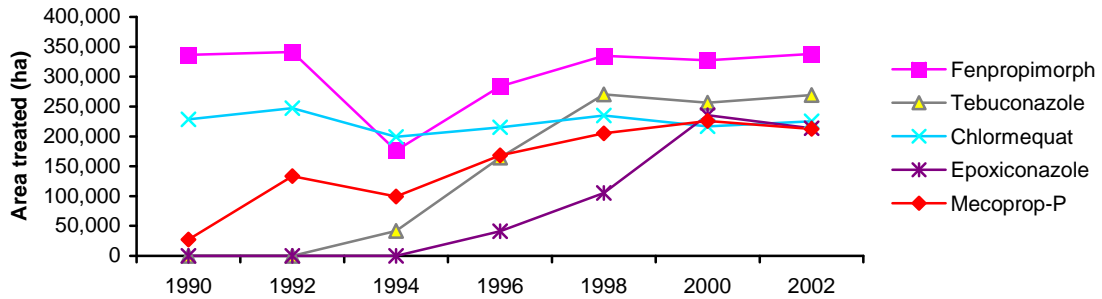
Quantity (tonnes) of the 50 most used active ingredients, including seed treatments, on all crops surveyed

	<i>Ai</i>	<i>Type</i>	2002	2000
1	Sulphuric acid	H	6,320	5,576
2	Mancozeb	F	197	149
3	Sulphur	F	184	129
4	Chlormequat	G	167	165
5	Mecoprop-P	H	110	109
6	Isoproturon	H	95	92
7	Glyphosate	H	80	96
8	Fenpropimorph	F/S	65	55
9	Cyprodinil	F	35	40
10	Pendimethalin	H	29	26
11	MCPA	H	23	30
12	Linuron	H	19	19
13	Chlorothalonil	F	17	15
14	Flusilazole	F	16	14
15	Pencycuron	S	15	10
16	Metazachlor	H	14	17
17	2,4-DB	H	13	10
18	Azoxystrobin	F	13	17
19	Guazatine	S	12	15
20	Trifluralin	H	12	14
21	Spiroxamine	F	12	8
22	Metaldehyde	M	11	9
23	2-chloroethylphosphonic acid	G	11	14
24	Epoxiconazole	F	11	13
25	Paraquat	H	11	11
26	Cymoxanil	F	10	5
27	Trifloxystrobin	F	9	12
28	Bromoxynil	H	9	9
29	Kresoxim-methyl	F	9	11
30	Tebuconazole	F/S	8	9
31	Diquat	H	8	8
32	Carbendazim	F	8	9
33	Ioxynil	H	7	7
34	Prochloraz	F	7	10
35	Fentin hydroxide	F	7	4
36	Pyraclostrobin	F	7	0
37	Tralkoxydim	H	7	7
38	Vinclozolin	F	6	5
39	Picoxystrobin	F	5	0
40	Propamocarb hydrochloride	F	5	3
41	Pirimicarb	I	5	6
42	Chlorpyrifos	I	5	11
43	Bitertanol	S	5	5
44	Famoxadone	F	5	0
45	Mepiquat chloride	G	5	6
46	Fluazinam	F	5	7
47	Maleic hydrazide	G	4	3
48	Thifensulfuron-methyl	H	4	3
49	Diflufenican	H	3	3
50	Propyzamide	H	3	5

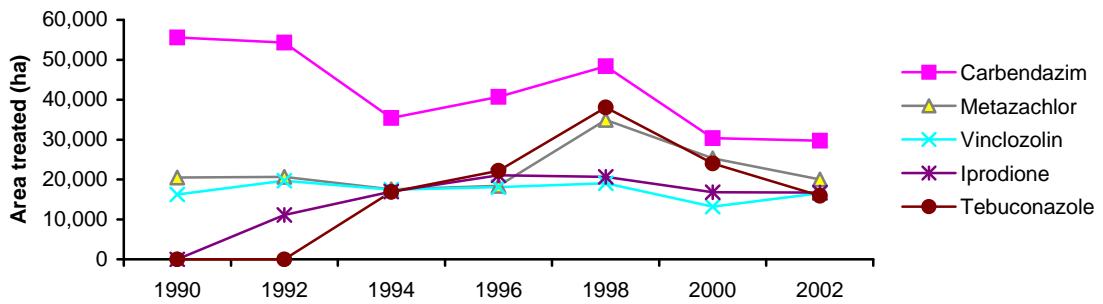
For table 37 and table 38 the pesticide type is shown (H: Herbicide, F: Fungicide, I: Insecticide, S: seed treatment & G: growth regulator)

● **FIGURE 10 Top 5 active ingredients in 2002: trends in usage 1990 - 2002**  
Treated area (hectares) of active ingredients

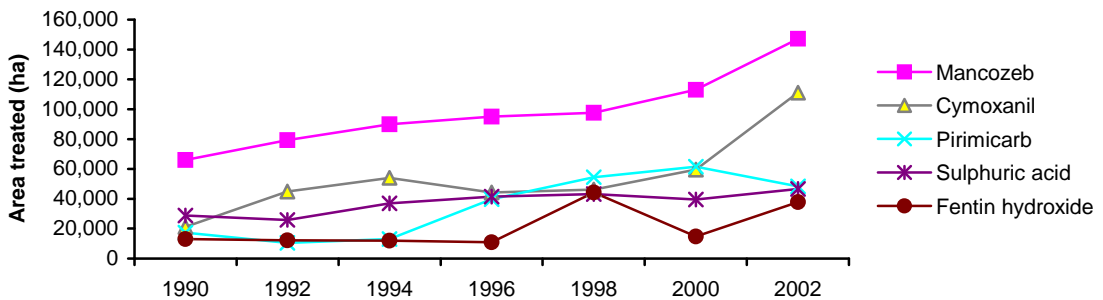
**Cereals**



**Oilseed rape**



**Potatoes**



● **TABLE 39 Cereals, comparison with previous years**

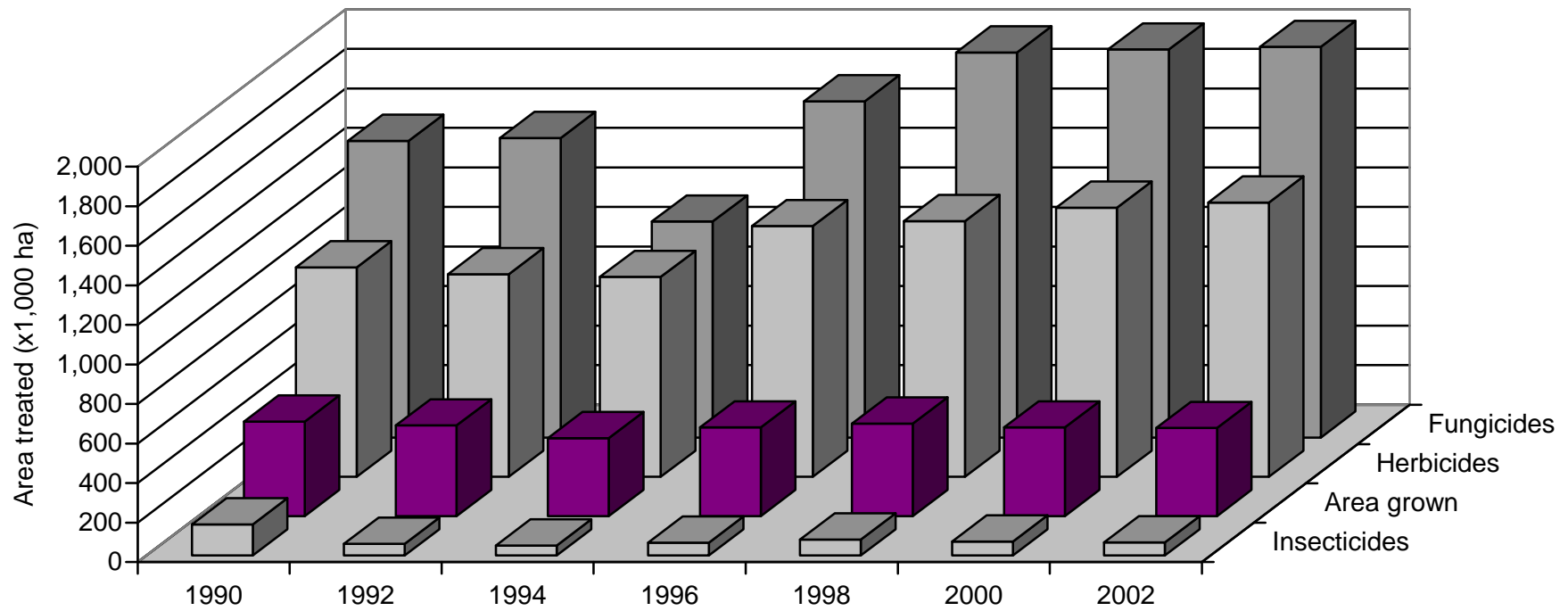
Pesticide usage in 1998, 2000 and 2002, area treated with formulations and active ingredients (a.i.) and the quantities applied

	1998			2000			2002		
	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>
<i>Insecticides</i>									
Pyrethroids	55,742	56,648	858	48,530	49,273	661	53,809	53,809	709
Organophosphates	20,993	20,993	8,476	19,442	19,442	11,592	8,130	8,130	5,269
Organochlorines	1,157	1,157	1,020	0	0	0	0	0	0
Carbamates	1,744	2,650	229	1,834	2,577	167	5,430	5,430	504
Unspecified or mixed formulation	906	0	0	743	0	0	0	0	0
<i>All insecticides</i>	80,542	81,448	10,583	70,549	71,291	12,419	67,368	67,368	6,482
<i>Molluscicides</i>	30,586	30,586	8,133	31,709	31,709	6,799	35,265	35,265	8,192
<i>Fungicides</i>	1,434,932	1,947,605	508,416	1,416,961	1,963,152	303,469	1,393,453	1,976,211	349,509
<i>Herbicides</i>	914,194	1,293,104	403,419	964,635	1,360,824	417,797	951,323	1,387,061	376,639
<i>Growth regulators</i>	338,905	421,506	245,218	346,039	431,766	183,102	338,350	426,160	186,017
<i>Seed treatments</i>	464,754	799,005	39,192	427,276	784,331	33,803	420,887	729,187	27,859
<b><i>All pesticides</i></b>	<b>3,263,913</b>	<b>4,573,254</b>	<b>1,214,960</b>	<b>3,257,169</b>	<b>4,643,073</b>	<b>957,388</b>	<b>3,206,646</b>	<b>4,621,252</b>	<b>954,698</b>
Area planted (ha)	468,153			448,718			445,512		





● **FIGURE 11 Cereals, comparison with previous years**  
Treated area of active ingredients of main pesticide types 1990 – 2002



● **TABLE 40 Oilseed rape, comparison with previous years**

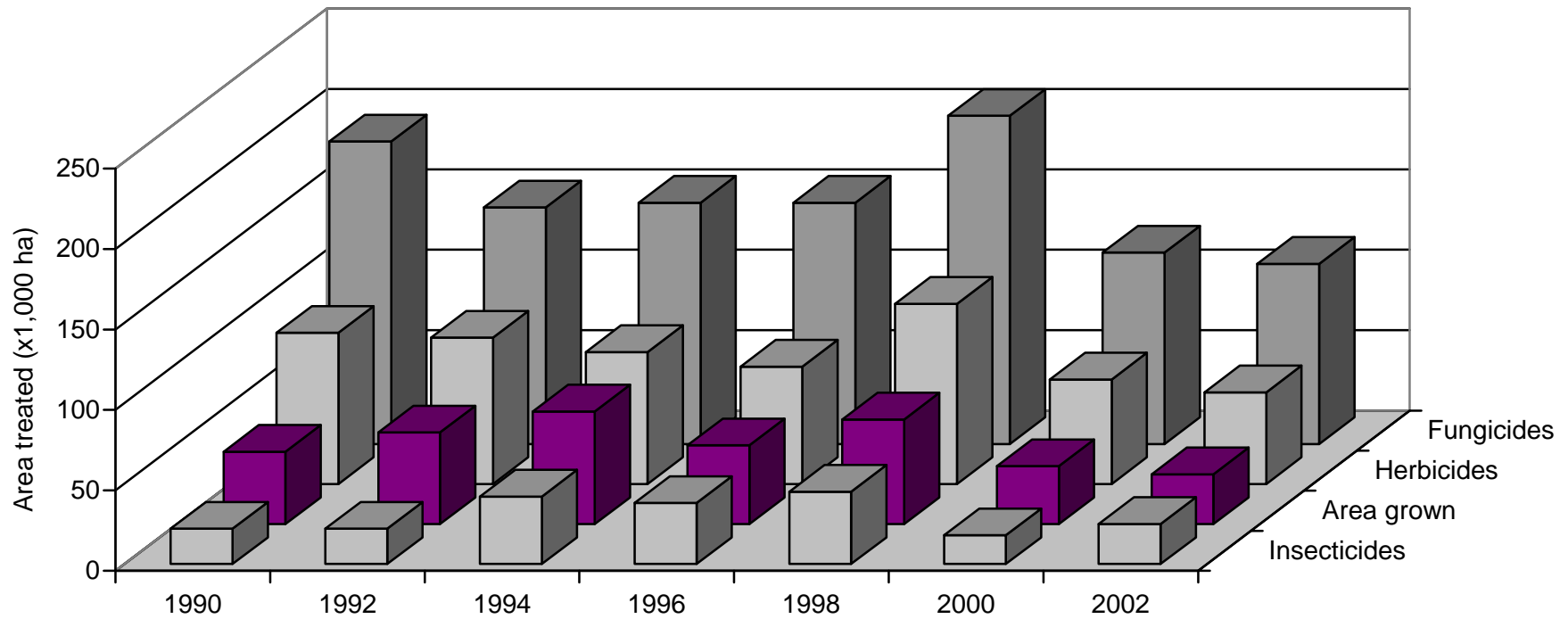
Pesticide usage in 1998, 2000 and 2002, area treated with formulations and active ingredients and the quantities applied

	1998			2000			2002		
	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>
<i>Insecticides</i>									
Pyrethroids	43,988	44,220	698	17,938	17,938	227	24,461	24,461	338
Organophosphates	0	0	0	162	162	109	305	305	76
Organochlorines	323	323	90	0	0	0	0	0	0
Carbamates	237	469	61	0	0	0	0	0	0
Unspecified or mixed formulation	232	0	0	0	0	0	468	468	44
<i>All insecticides</i>	44,780	45,012	850	18,099	18,099	335	25,234	25,234	458
<i>Molluscicides</i>	13,676	13,676	3,396	11,600	11,600	2,788	11,063	11,063	2,419
<i>Fungicides</i>	157,053	203,685	164,443	93,002	119,491	52,517	89,272	111,718	41,797
<i>Herbicides/desiccants</i>	106,039	112,476	68,058	60,698	65,095	37,360	50,041	56,930	30,218
<i>Growth regulators</i>	6,228	6,228	8,106	5,147	5,147	4,749	36	36	51
<i>Seed treatments</i>	65,796	163,350	4,339	42,945	69,951	1,224	37,439	42,764	732
<b><i>All pesticides</i></b>	<b>393,572</b>	<b>544,427</b>	<b>249,192</b>	<b>231,491</b>	<b>289,383</b>	<b>98,973</b>	<b>213,085</b>	<b>247,745</b>	<b>75,675</b>
Area planted (ha)	65,116			36,401			30,902		





● **FIGURE 12 Oilseed rape, comparison with previous years**  
Treated area of active ingredients of main pesticide types 1990 - 2002



● **TABLE 41 Potatoes, comparison with previous years**

Pesticide usage in 1998, 2000 and 2002, area treated with formulations and active ingredients and the quantities applied

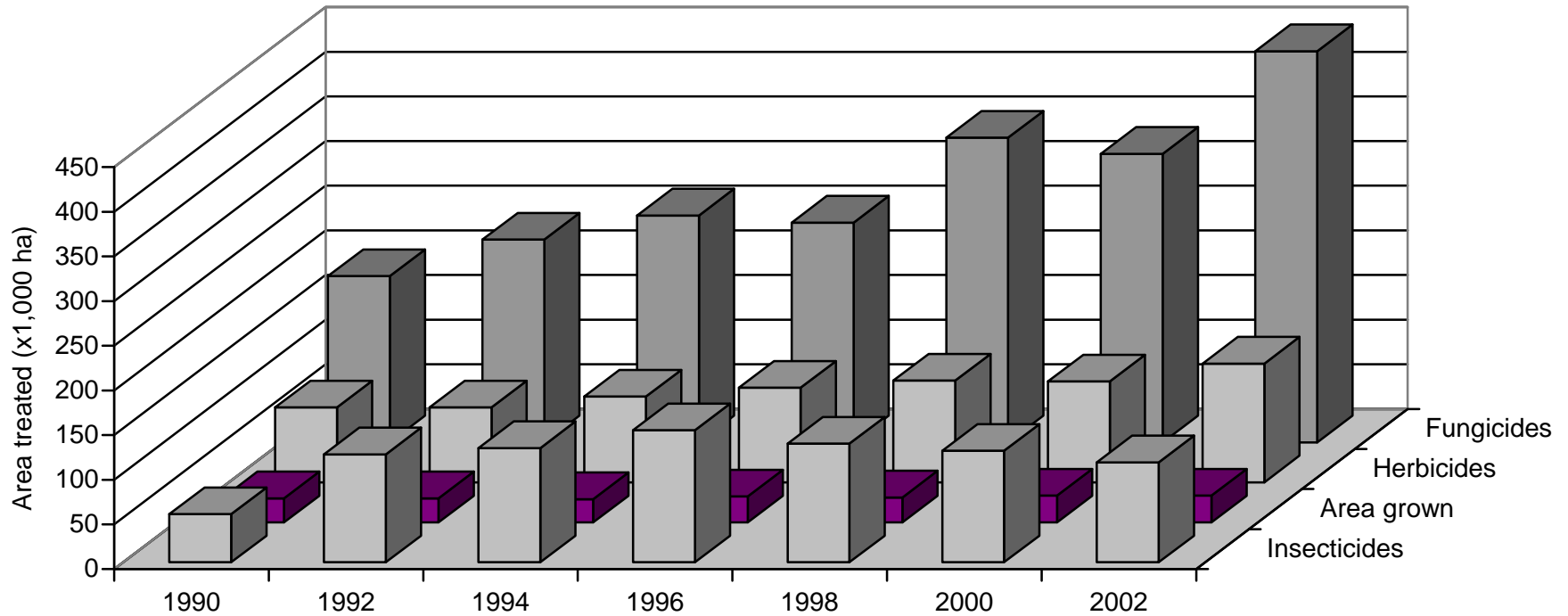
	1998			2000			2002		
	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>
<i>Insecticides &amp; nematocides</i>									
Pyrethroids	31,561	65,040	615	27,256	58,471	348	18,362	52,186	386
Organophosphates	3,488	10,030	1,518	1,504	1,841	643	376	376	30
Carbamates	30,258	57,194	8,839	33,066	63,944	10,212	16,493	50,317	7,061
Unspecified or mixed formulation	33,904	426	0	32,408	1,193	123	43,131	9,307	753
<i>All insecticides &amp; nematocides</i>	99,211	132,690	10,972	94,157	125,449	11,213	78,362	112,187	8,229
<i>Molluscicides</i>	28,691	28,691	6,271	23,573	23,573	4,339	30,546	30,546	5,376
<i>Fungicides</i>	236,408	341,139	185,280	202,153	323,028	208,391	268,617	437,881	266,805
<i>Herbicides/desiccants</i>	100,712	113,986	6,161,765	96,478	112,563	5,590,165	113,073	132,712	6,362,964
<i>Mixed herbicide/fungicide</i>	47	0	0	0	0	0	0	0	0
<i>Growth regulators</i>	687	687	2,762	1,110	1,110	3,253	1,333	1,333	4,000
<i>Seed treatments</i>	23,766	31,254	8,413	26,482	34,353	11,221	29,222	43,290	16,178
<b><i>All pesticides</i></b>	<b>489,522</b>	<b>648,447</b>	<b>6,375,463</b>	<b>444,029</b>	<b>620,076</b>	<b>5,828,582</b>	<b>521,153</b>	<b>757,949</b>	<b>6,663,552</b>
Area planted (ha)	28,761			29,689			30,203		







● **FIGURE 13 Potatoes, comparison with previous years**  
Treated area of active ingredients of main pesticide types 1990 - 2002



● **TABLE 42** *Set aside, comparison with previous years*

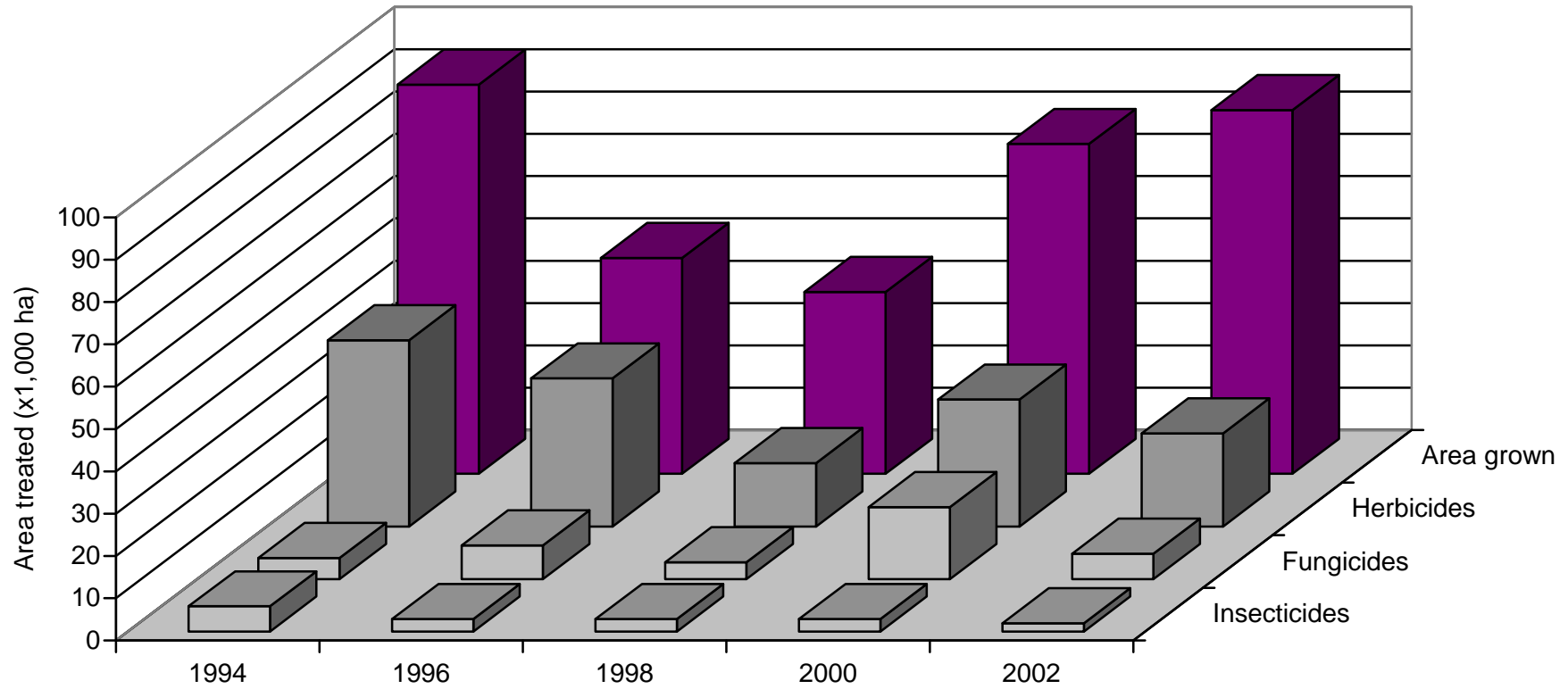
Pesticide usage in 1998, 2000 and 2002, area treated with formulations and active ingredients and the quantities applied

	1998			2000			2002		
	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>	<i>Formulations (ha)</i>	<i>a.i. (ha)</i>	<i>kg</i>
<i>Insecticides</i>									
Pyrethroids	3,144	3,144	52	2,999	2,999	29	2,244	2,244	26
<i>All insecticides</i>	3,144	3,144	52	2,999	2,999	29	2,244	2,244	26
<i>Molluscicides</i>	345	345	97	2,007	2,007	425	466	467	267
<i>Fungicides</i>	5,298	7,080	3,766	12,552	16,920	6,667	5,370	6,322	6,667
<i>Herbicides</i>	12,703	14,259	11,944	26,184	28,279	22,555	20,663	21,620	20,223
<i>Growth regulators</i>	109	109	141	113	113	166	0	0	0
<i>Seed treatments</i>	4,391	9,547	266	5,499	8,155	146	4,648	5,708	100
<b><i>All pesticides</i></b>	<b>25,990</b>	<b>34,484</b>	<b>16,000</b>	<b>49,353</b>	<b>58,119</b>	<b>29,988</b>	<b>33,391</b>	<b>36,361</b>	<b>27,283</b>
Area planted (ha)	43,300			77,678			85,580		





● **FIGURE 14** *Set aside, comparison with previous years*  
Treated area of active ingredients of main pesticide types 1990 - 2002



● **TABLE 43 Sampled area**

<i>Size (ha)</i>	<i>Highlands &amp; Islands</i>	<i>Caithness &amp; Orkney</i>	<i>Moray Firth</i>	<i>Aberdeen</i>	<i>Angus</i>	<i>East Fife</i>	<i>Lothian</i>	<i>Central Lowlands</i>	<i>Tweed Valley</i>	<i>S. Uplands</i>	<i>Solway</i>
0.1 – 19.9	30	90	56	173	52	16	35	154	44	12	67
20 – 49.9	51	33	288	680	345	110	65	378	154	60	151
50 – 99.9	60	82	399	1,260	892	394	218	692	406	140	114
100 – 149.9			600	1,173	1,022	446	686	757	985		
150 +			2,160	2,976	2,789	1,398	1,981	1,159	2,472	187	276
<i>All sizes</i>	<b>140</b>	<b>206</b>	<b>3,503</b>	<b>6,262</b>	<b>5,100</b>	<b>2,364</b>	<b>2,984</b>	<b>3,139</b>	<b>4,062</b>	<b>399</b>	<b>608</b>

● **TABLE 44 Census area**

<i>Size (ha)</i>	<i>Highlands &amp; Islands</i>	<i>Caithness &amp; Orkney</i>	<i>Moray Firth</i>	<i>Aberdeen</i>	<i>Angus</i>	<i>East Fife</i>	<i>Lothian</i>	<i>Central Lowlands</i>	<i>Tweed Valley</i>	<i>S. Uplands</i>	<i>Solway</i>
0.1 – 19.9	3,080	4,793	4,474	11,403	3,367	977	1,116	8,629	1,290	1,337	4,333
20 – 49.9	1,800	2,467	9,918	24,588	12,991	4,515	2,821	13,962	4,392	1,781	6,700
50 – 99.9	1,497	1,920	12,894	34,083	28,237	12,357	8,780	16,533	10,763	1,702	3,476
100 – 149.9	387	615	9,992	16,240	20,355	9,594	11,268	9,238	15,053	812	959
150 +	238	163	14,737	26,617	36,462	15,350	19,439	9,268	28,590	1,302	1,811
<i>All sizes</i>	<b>7,001</b>	<b>9,958</b>	<b>52,015</b>	<b>112,931</b>	<b>101,411</b>	<b>42,793</b>	<b>43,425</b>	<b>57,628</b>	<b>60,088</b>	<b>6,935</b>	<b>17,279</b>





● **TABLE 45 Raising factors**

<i>Size (ha)</i>	<i>Highlands &amp; Islands</i>	<i>Caithness &amp; Orkney</i>	<i>Moray Firth</i>	<i>Aberdeen</i>	<i>Angus</i>	<i>East Fife</i>	<i>Lothian</i>	<i>Central Lowlands</i>	<i>Tweed Valley</i>	<i>S. Uplands</i>	<i>Solway</i>
0.1 – 19.9	102.72	53.26	79.76	65.80	64.81	59.63	31.81	56.18	29.01	113.92	64.83
20 – 49.9	35.45	73.75	34.42	36.18	37.71	41.01	43.45	36.90	28.53	29.68	44.46
50 – 99.9	25.08	23.31	32.34	27.06	31.66	31.40	40.34	23.90	26.49	12.17	30.40
100 – 149.9	NA	NA	16.66	13.84	19.91	21.49	16.44	12.21	15.28	NA	NA
150 +	NA	NA	6.82	8.94	13.07	10.98	9.81	8.00	11.56	6.97	6.55

'NA' not applicable

● **TABLE 46** *First and second adjustment factors*

	<i>Highlands &amp; Islands</i>	<i>Caithness &amp; Orkney</i>	<i>Moray Firth</i>	<i>Aberdeen</i>	<i>Angus</i>	<i>East Fife</i>	<i>Lothian</i>	<i>Central Lowlands</i>	<i>Tweed Valley</i>	<i>S. Uplands</i>	<i>Solway</i>	<i>Second adjustment factor</i>
Winter barley	NA	NA	1.01	1.36	1.12	0.90	1.64	1.39	1.24	1.18	2.66	1.01
Spring barley	1.05	1.04	0.91	0.93	0.87	1.25	0.72	0.93	0.96	1.15	0.75	1.00
Wheat	NA	NA	1.46	1.33	0.89	0.78	1.30	0.81	1.01	1.16	1.51	1.00
Winter oats	NA	NA	NA	0.54	0.81	NA	NA	0.82	1.24	0.24	1.20	1.32
Spring oats	0.71	1.07	1.49	0.49	1.29	0.68	1.15	1.45	0.51	NA	0.46	1.00
Winter oilseed rape	NA	NA	0.68	1.02	0.96	1.07	1.16	1.58	0.98	0.39	2.06	1.00
Spring oilseed rape	NA	NA	0.74	27.10	1.90	0.92	0.74	1.19	3.19	NA	NA	1.04
Seed potatoes	8.32	NA	3.79	1.05	2.84	4.64	NA	1.42	2.01	NA	NA	1.02
Early potatoes	NA	NA	NA	NA	3.31	NA	NA	1.90	NA	NA	NA	2.10
Ware potatoes	9.08	2.32	NA	NA	1.95	1.21	2.05	1.63	1.29	NA	NA	1.13
Combine peas	NA	0.11	0.33	1.62	NA	0.22	NA	NA	0.60	NA	NA	2.70
Field beans	NA	NA	0.29	NA	NA	2.62	NA	NA	0.72	NA	NA	1.43
Linseed	NA	NA	NA	NA	0.85	NA	NA	NA	NA	NA	NA	7.39
Triticale	NA	NA	0.43	NA	NA	NA	0.11	NA	NA	NA	NA	2.74
All set aside	1.27	2.96	1.07	1.03	0.87	1.12	1.20	1.16	0.99	2.36	1.14	1.00

'NA' not applicable

