

News Release



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Agriculture

Plant Protection Products usage: 2004-2005

The greater demand for agricultural production has, perhaps, brought about a greater usage of Plant Protection Products (PPPs) in order to boost production within the agricultural sector. The usage of PPP has been with us for a number of years. As environmental pressures and the growing awareness among the general public to monitor the usage are on the increase, the National Statistics Office took the initiative to carry out a comprehensive survey on PPP usage. The Ministry for Rural Affairs was consulted and assistance from a top expert from UK was sought.

The survey covered treatments applied to the most important crops grown between September 2004 until August 2005. The most important crops were selected by land area coverage during the census of agriculture and the expected high intensity usage of PPP use in certain other crops.

A threshold of 0.5 ha of Utilized Agricultural Area (circa 4 and a half tumoli of land) was applied. The number of holdings with land areas above 0.5 ha of UAA amounted to 5,446 and these had a total of 8,281 ha or 85.8 per cent of all Utilized Agricultural Area. The holdings smaller than 0.5 ha of UAA are generally not used for commercial purposes and thus the usage of PPPs on these areas can be considered negligible.

The number of holdings in the survey amounted to 457 holdings of which 448 holdings provided the NSO with information, achieving a 98.0 per cent response rate.

Results

It was established for the survey that almost half the land cultivated was devoted to the product of fodder. Notwithstanding this, only 43 per cent of land used for fodder product was treated. On the other hand, extensive treatment on the area of potatoes, strawberries and carrots was observed. In fact 95, 98 and 95 per cent of areas under potatoes, strawberries and carrots were treated with same form of PPP.

The intensity of treatment varies by crop. Intensity of treatment is defined as the number of times a crop was treated where a plant protection product was used. The intensity of treatment was more evident in permanent crops such as grapes (5 times on average) and peaches (an average of 4 times).

Irrigation

Most of the crops were found to be irrigated during the survey period. Crops such as cabbages, carrots, cauliflowers, lettuce, nectarines, strawberries and greenhouse tomatoes were found to be irrigated in over 95 per cent of the cases, whereas, on the other side of the coin, wheat, broad beans and onions were found to be less irrigated with 0.6 per cent, 20.3 per cent, and 18.5 per cent of the total area grown being irrigated. In the majority of the cases the use of irrigation increased the likelihood of crops requiring PPP.

Due to small size of land parcels, the knapsack was used in 70 per cent of all PPP applications as this was the most practical way. Crops grown in larger fields were treated by tractor mount as in the case of wheat, tomatoes and water melons.

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The Mediterranean climate dictated PPP usage as herbicide applications were applied at the beginning of October at the start of the rainy season when the weed seeds begin to germinate. Fungicide is applied throughout the year, however, the peak usage falls between January and June. Insecticide usage is mainly applied from February to June with such application was at its lowest in the August / November period. Plant protection products use in Malta is dominated by the use of Fungicides illustrating the importance of disease control over pest and weed control.

While little comparable data are available from most European countries, in general plant protection products usage in Malta was low in comparison to other southern European countries or the United Kingdom. Indeed, a larger proportion of many crops was grown without any plant protection products in Malta than in the UK ■

Table 1. Basic area¹ (ha) of crops treated with plant protection products by major PPP group

Crop	PPP Group					Area grown (ha)	% of area grown
	Fungicides	Herbicides	Insecticides	Other PPPs	Any PPP		
Broad beans	60.2	15.4	36.8	-	99.2	251.3	39.5%
Cabbages	4.3	1.7	49.7	-	51.7	84.3	61.3%
Carrots	36.4	20.1	2.5	-	55.2	58.3	94.6%
Cauliflowers	33.3	3.9	131.9	1.1	135.5	180.6	75.0%
Citrus	7.2	-	33.0	5.9	34.7	62.2	55.8%
Grapes	322.8	18.9	164.7	9.2	335.8	394.4	85.2%
Lettuce	15.5	1.1	0.5	0.5	17.7	61.9	28.6%
Nectarines	-	-	19.4	-	19.4	19.4	100.0%
Olives	0.8	-	6.3	0.0	7.1	19.9	35.6%
Onions	177.9	61.2	5.3	-	181.9	237.8	76.5%
Peaches	62.1	3.4	113.4	2.1	119.7	135.7	88.2%
Peas	22.9	22.9	-	-	22.9	22.9	100.0%
Potatoes	851.4	107.5	52.6	0.4	853.3	899.7	94.8%
Strawberries	14.2	1.4	13.9	8.7	18.7	19.0	98.4%
Sugar melons	116.5	0.7	90.8	3.0	127.4	196.9	64.7%
Tomatoes - outdoor	217.0	3.7	187.1	3.0	253.8	311.6	81.5%
Tomatoes - glasshouse	14.8	-	11.0	0.5	14.8	14.8	100.0%
Vegetable - Marrows	149.7	2.4	47.8	3.0	162.0	206.1	78.6%
Watermelons	78.1	0.4	65.9	13.1	85.3	109.1	78.2%
Wheat	2.2	1,610.4	-	3.5	1,616.2	3,783.6	42.7%
Total	2,187.5	1,875.3	1,032.5	54.1	4,212.3	7,069.4	59.6%

¹Basic area (ha) = the field area of crop receiving treatment, irrespective of the number of times it has been treated

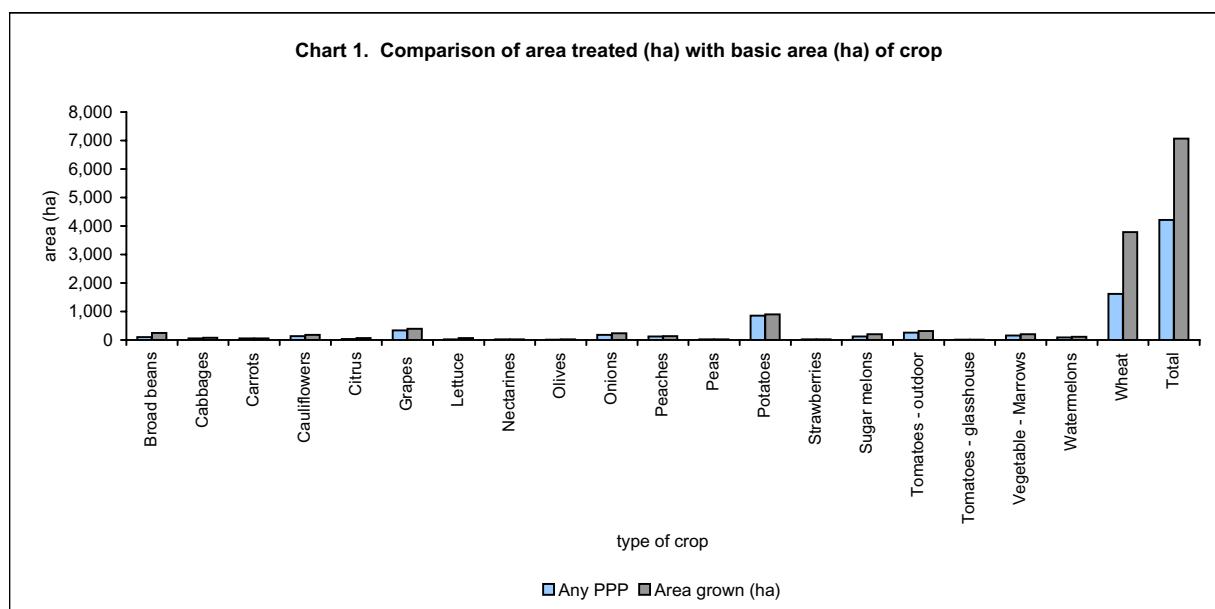


Table 2. Treated area (ha) with PPPs by chemical family by month

Month	Chemical Family			
	Fungicide	Herbicide	Insecticide	Other PPPs
January	735.3	1122.6	157.5	8.5
February	1136.3	304.5	92.2	4.5
March	1252.9	90.5	187.6	6.5
April	1255.2	19.2	292.1	-
May	1439.9	23.1	431.8	8.7
June	982.8	4.9	505.7	17.9
July	439.5	3.4	381.8	29.3
August	117.1	3.3	115.5	18.7
September	86.0	5.4	65.1	7.3
October	168.4	19.6	134.7	4.3
November	209.6	54.0	62.8	12.8
December	322.7	307.0	156.9	1.1

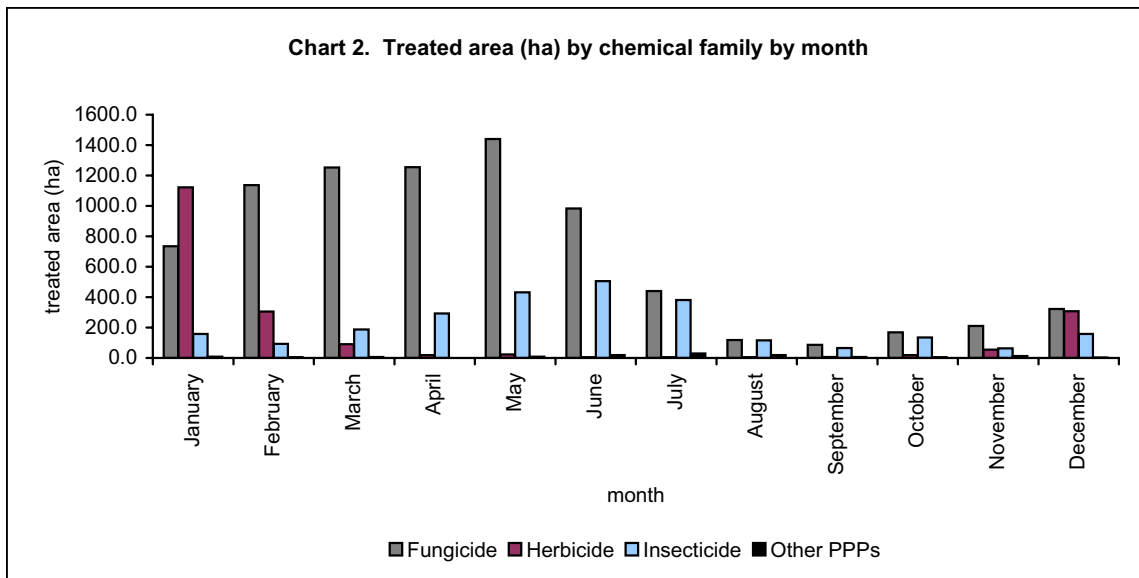


Table 3. Area treated (ha) by chemical family by type of application

PPP group	Fungicide	Herbicide	Insecticide	Other PPPs	All crops	% of all methods
Dry powder	76.9	-	-	-	76.9	0.6
Granular broadcast	411.8	-	2.6	-	414.4	3.2
Granular incorporated	9.2	-	29.5	17.8	56.6	0.4
Ground sprayer	1,689.6	832.7	706.5	37.5	3,266.3	25.6
Applied via irrigation	1.2	-	7.2	-	8.4	0.1
Knapsack	5,948.6	1,124.9	1,812.0	61.4	8,947.0	70.1
Soil fumigation	-	-	-	2.8	2.8	< 0.1

Chart 3. Percentage distribution of application types

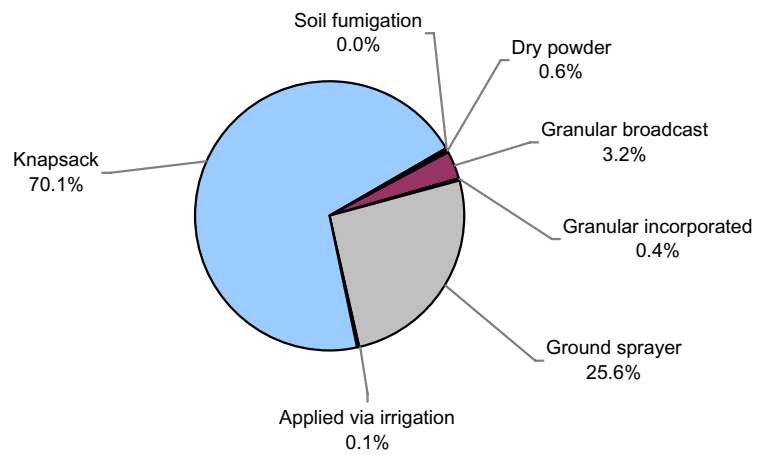


Table 4. Intensity of PPP use by country¹ by type of crop

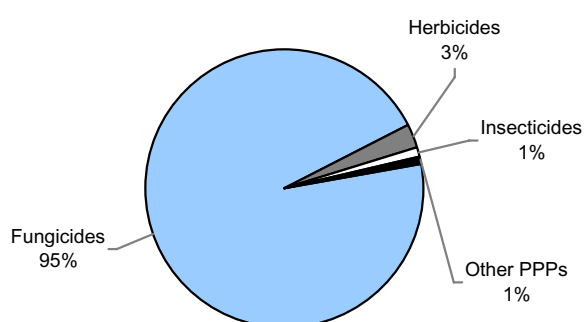
Crop	Malta	Average (other countries)	UK	Romania	Bulgaria	Slovenia
Fungicide use (times treated)						
Cabbages	1.5	1.4	1.3	1.8	-	1.1
Carrots	1.6	3.2	3.2	-	-	-
Grapes	5.8	8.9	8.9	-	-	-
Strawberries	4.1	5.4	5.4	-	-	-
Onions	3.6	4.4	4.4	-	-	-
Potatoes	3.7	5.5	10.0	2.6	5.2	4.3
Tomatoes - greenhouse	8.3	6.3	5.6	3.4	9.8	-
Tomatoes - outdoor	3.2	6.5	-	-	6.5	-
Insecticide use (times treated)						
Cabbages	2.3	2.6	3.1	2.5	-	2.3
Cauliflowers	2.6	2.6	2.6	-	-	-
Tomatoes - outdoor	3.1	4.0	-	3.0	4.9	-
Peaches	2.7	6.1	-	-	6.1	-
Potatoes	2.0	2.4	1.5	1.9	3.7	-
Strawberries	2.7	1.2	1.2	-	-	-
Herbicide use (times treated)						
Cabbages	1.0	1.4	1.8	-	-	1.0
Onions	1.0	5.7	5.7	-	-	-
Potatoes	1.0	1.9	2.6	1.4	1.6	-
Wheat	1.0	1.9	3.1	1.2	2.3	1.0

¹Data for Romania, Bulgaria and Slovenia are from 2004. Data for the UK are from 2004 (potatoes & wheat), 2003 (cabbages, carrots, cauliflowers, onions & tomatoes) and 2001 (grapes & strawberries)

Table 5. Weight applied (kg/Active Ingredient) by chemical family by type of crop

Crop	PPP Group				Total
	Fungicides	Herbicides	Insecticides	Other PPPs	
Broad beans	132.3	6.8	66.6	-	205.7
Cabbages	2.6	0.8	27.8	-	31.2
Carrots	2,788.1	8.4	0.7	-	2,797.2
Cauliflowers	15.8	0.7	50.2	0.3	67.0
Citrus	7.6	-	10.6	0.9	19.1
Grapes	3,617.9	11.6	106.9	3.4	3,739.8
Lettuce	9.4	0.3	0.1	0.1	9.9
Nectarines	-	-	12.1	-	12.1
Olives	1.0	-	3.2	<0.1	4.2
Onions	990.4	102.6	5.0	-	1,098.0
Peaches	162.3	0.6	52.3	0.1	215.3
Peas	87.7	31.4	-	-	119.1
Potatoes	3,756.8	27.7	46.7	0.1	3,831.3
Strawberries	36.0	1.1	4.5	306.8	348.4
Sugar melons	8,869.0	<0.1	42.3	0.1	8,911.4
Tomatoes - outdoor	24,647.6	0.5	130.8	0.1	24,779.0
Tomatoes - greenhouse	247.1	-	2.1	268.4	517.6
Vegetable - Marrows	10,139.1	3.6	15.2	0.7	10,158.6
Watermelons	5,433.7	<0.1	13.2	3.5	5,450.4
Wheat	1.9	1,641.0	-	0.9	1,643.8
Total	60,946.3	1,837.1	590.3	585.4	63,959.1

Chart 4. Percentage distribution of weight applied (kg/Active Ingredient) by chemical family



Methodological and Explanatory Notes

1. Plant protection products may be classified into four categories:

Pesticides – Control of Pests

Herbicides – Control of Weeds (mainly used on wheat and onions)

Fungicides – Control of Disease (most widely used both in weight and in area treated)

Other Plant Protection Products

2. UAA - Utilized Agricultural Area
3. The farmers were directly interviewed by the enumerators
4. The data in this release is not subject to revision as this was a one time survey.

The full report of this exercise can be found on the NSO website <http://www.nso.gov.mt>