

## Pesticide use, issues and how to promote sustainable agriculture in Slovenia

PAN Germany is part of an international network of more than 600 citizens groups working to oppose the misuse of pesticides and to promote sustainable agriculture and ecologically sound pest management.

PAN Germany provides information on pesticide risks and campaigns for alternatives.

Organisation ECHO performs activities of enlightenment and education of its members and the general public, exchange of skills and experience, and execution, managing and organizing informal education and other activities in the field of environment, health and intercultural understanding.

The NGO ECHO is contributing to sustainable development and a higher quality of living.

**Fact Sheet  
2004**

### Slovenian Agriculture

In comparison to other Central and Eastern European countries, the macroeconomic importance of agriculture in Slovenia is relatively low. Share of agriculture, hunting and forestry in GDP has been decreasing in the last decade (Slabe 2001). Natural conditions in Slovenia are relatively disadvantageous for agriculture. Approximately 60% of Slovenia is covered by forest. About 75% of the farmland is classified as less favoured area.

Farming in Slovenia is characterised by its small holdings. The average size of an agricultural holding is about 6.2 ha and only 15% of them are larger than 10 ha. Small scale farming results in lower competitiveness of the Slovenian agriculture in comparison to the European (MAFF 2001a).

### Agri-environmental programme

Narrow crop rotation on the arable land has already lead to increased environmental problems. Agricultural development, especially the intensification of fruit and vegetable growing suggests that pesticide use will increase in the future. On the other hand, the Slovenian agri-environmental programme is very well developed and bears potential to solve environmental problems caused by agriculture. It provides direct payments for a number of environmentally friendly farming practices and outlines the education and promotion activities needed (MESPA 2001, p. 1, 10).

### Organic agriculture on the rise

Organic agriculture is on the rise and this trend will probably continue due to better marketing and continued governmental support. In 2003 there were 1,415 organic farms and they cultivated 20,018 ha (Figure 1). Average size of agricultural area per organic farm is 14.1 ha.



### Pesticide Use

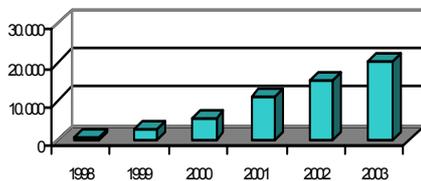
In Slovenia data on pesticide use is not collected. Therefore, the best estimation of pesticide use in Slovenia is provided by wholesale data (MAFF 2003). Data on wholesale of pesticides in Slovenia can be seen in Figure 2.

Total pesticide use in Slovenia decreased at the beginning of the 1990s. But over the last years, total pesticide products use has been increasing. Average use of pesticide products in 2000 was estimated at 3.1 kg/ha of agriculture land (GIS 2003).

There is a big difference in pesticide use per unit of agricultural land between the agricultural enterprises and family farms. In 1998 agricultural en-

terprises were using 6 times more pesticides than family farms (IMAD 2000).

**Figure 1: Hectares cultivated organically**



Source: Institute for sustainable development, Agriculture and Forestry Institute Maribor (2003, 2004)

### Authorized Pesticide Products

In 2004 there are 372 authorized plant protection products (PPP) in Slovenia and 212 pesticide active ingredients (a.i.; MAFF 2004).

In 2000, 240 pesticides (a.i.) were authorized for the use in pesticide products (Neumeister 2003):

- 19 of them were classified as Extremely or Highly Hazardous (acute toxicity, WHO) and
- 30 substances as Very Toxic or Toxic (acute toxicity, EU).
- 17 pesticides were possible carcinogenic (carcinogenicity category 3, EU) and 6 possible mutagenic (mutagenicity category 3, EU),
- 99 pesticides were "Dangerous for the Environment".

The evaluation of 406 registered pesticide products in 2002 (Komat and Pretnar 2003) showed that:

- Five active ingredients of pesticides that are by Annex 15 (EU – Resolution on Endocrine Disruptors) characterized as endocrine disruptors of high concern were still available and possible to buy in Slovenia in 2003: vinclozolin, thiram, linuron, atrazine and alachlor.

- Six organophosphorus insecticides that can be found in the list of the most dangerous poisons are still allowed in Slovenia: azinphos methyl, demeton, diazinon, dichlorvos, methidathion and parathion.

### Law and Authorization

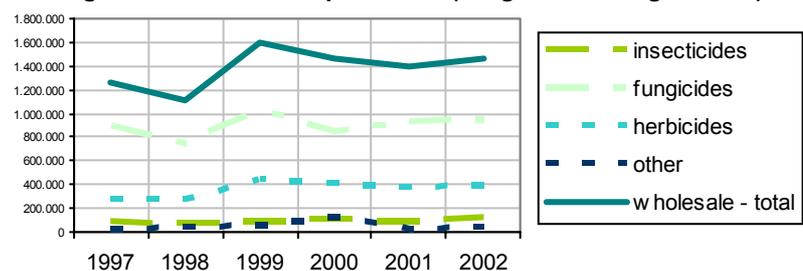
Ministry of Agriculture, Forestry and Food – Administration of the Republic of Slovenia for Plant Protection and Seeds is the competent body for registration, trade and usage of plant protection products in Slovenia (Official Gazette RS 11/2001, Official Gazette RS 110/2003). The authorization procedure in Slovenia is presented in Figure 3.

According to sub-act regulations of the Act on Plant Protection Products (11/2001, 110/2003) executors of plant protection have to fulfill the following requirements:

- keep records of the use of PPP (62/2003)
- sellers of PPP and executors of plant protection have to complete special training and pass the exam on phytomedicine (36/2002),
- application equipment (excluded: volume of equipment is up to 5 liters and manual drive equipment) has to obtain conformity certificate according to checking of equipment and technical documentation (37/2001, 80/2001, 80/2002, 117/2002).

These are relatively new rules that came into force in last two years and still need implementation. There is still need to stimulate users of pesticide products to attend special trainings and education (Agriculture and Forestry Institute Maribor 2004).

**Figure 2: Wholesale of pesticides (in kg of active ingredients)**

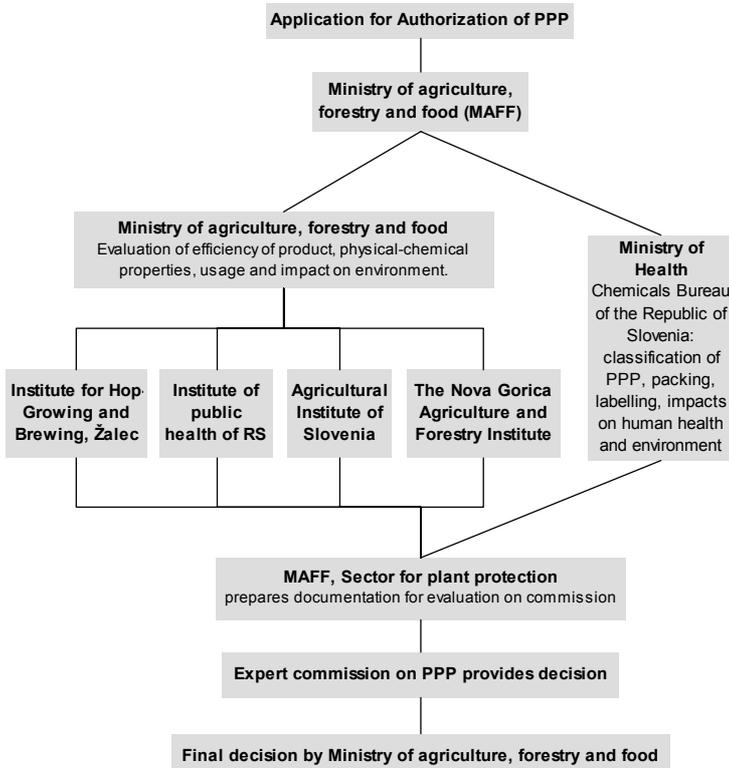


Source: MAFF (2003)

### Pesticide Issues

In Slovenia information about obsolete pesticides is not collected. Producers of pesticides withdraw the obsolete pesticides from specialized shop or they extend time for usage on an

**Figure 3: Authorization procedure of Plant Protection Products in Slovenia**



Source: MAFF (2001b), MAFF (2002), Official Gazette RS 11/2001, Official Gazette RS 110/2003

analysis base (MAFF 2003). Estimated numbers of pesticide stocks are 350-400 tons (HCH Forum 2001).

There should be no illegal pesticide market in Slovenia, at least no information about it is available at the Administration of the Republic of Slovenia for Plant Protection and Seeds (MAFF 2003).

In 2001 residues of 45 different substances were determined in the official food monitoring. Presence of pesticide residues up to maximum residue limits (MRLs) was determined in 69 samples of foodstuffs (41.1%) and in 33 samples of agricultural products (21.9%). MRLs were exceeded in 1% of foodstuff (1 sample, bread) and in 5% of agricultural products (8 samples, lettuce and potato; Ministry of Health 2002, figure 4 and 5).

In 2003 the threshold value for atrazine and desethyl-atrazine was exceeded in water in all four sampling places on “Dravsko polje”, “Ptujsko polje”, “Spodnja Savinjska dolina” and “dolina Bolske”. Presence of atrazine and desethyl-atrazine in allowed limits were determined in “Prekmurje”, “Mursko polje”, “Sorško polje” and “Kranjsko polje” (MESPA 2003).

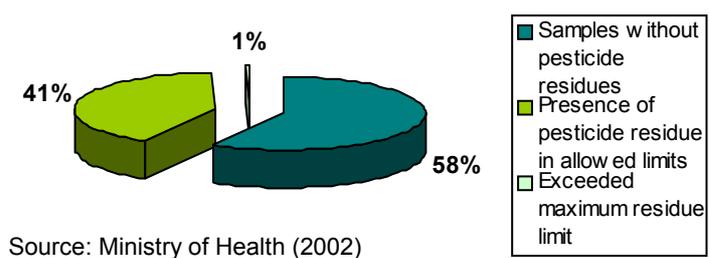
High concentration of prometryn was analysed in Brunšvik (Dravsko polje). The concentration was ten times higher than threshold value (0.06 µg/l). In a well of the village water pump in Vučja vas the concentration of bromacil was higher than the limit (two samples). Bromacil is not on the list of authorized pesticides in Slovenia (MESPA 2003).

**Further Activities**

In order to improve the situation in the field of pesticide issues in Slovenia the following activities should be implemented:

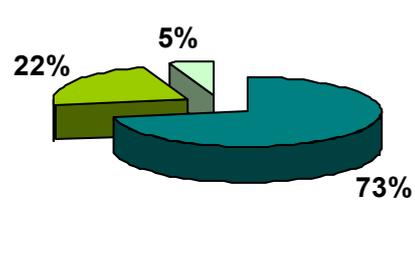
- optimization of monitoring of pesticide residues,
- reduce pesticide residues – no measurable pesticide residues in foodstuffs, agricultural products and water should be the aim,

**Figure 4:** Results of monitoring pesticide residues in foodstuffs in 2001



Source: Ministry of Health (2002)

**Figure 5:** Results of monitoring pesticide residues in agricultural products in 2001



- improve control over farmers regarding usage of pesticides and attending education (user of pesticide products have to keep records of pesticide product use and attend mandatory education/certification),
- raise the awareness of the public, consumers, farmers and politicians regarding pesticide issues and potential health and environmental risk,
- promoting pesticide use reduction plans and sustainable agriculture practice (organic farming and low input farming),
- publish collected data about the use of pesticide products from administrative side.

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## National links

### Responsible ministries and administration bodies:

Ministry of Agriculture, Forestry and Food of Republic of Slovenia: <http://www.gov.si/mkgp/slo/index.php>

Ministry of Health of Republic of Slovenia  
<http://www2.gov.si/mz/mz-splet.nsf>

Ministry of the Environment, Spatial Planning and Energy:  
<http://www.gov.si/mop/en/index.htm>

### More information:

FITO – INFO Information system for plant protection  
<http://www.bf.uni-lj.si/ag/fito/>

Full report »Agriculture and pesticide use in Slovenia« is available at: [www.ech-o.org](http://www.ech-o.org) and [www.PAN-Germany.org](http://www.PAN-Germany.org).

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