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PLANT PROTECTION MEANS APPLIED IN POLISH ORGANIC FARMS

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Abstract

The study contains data collected in 4813 organic farms positively audited by certifying unit Ekogwarancja PTRE, which makes up 32% of all Polish farms under the control in 2008. Plant protection means were used only in 585 farms, which covered 12.2% of all positively audited farms. Inspected farms used 19 plant protection products in 2008, most frequently Miedzian 50 WP and Bioczos BR. Among the applied products, 15 were registered in Poland for use in organic farming, and their list is published by Plant Protection Institute – National Research Institute in Poznań, and another four were permitted to use in organic farms of the European Union, but banned in Poland. The paper deals with the reasons of that situation.

Key words: organic farming, farm, plant protection, pesticides

Introduction

Organic farming is a system of agricultural production based on natural processes occurring within a farm (Szymona et al. 1997). Therefore, organic fertilizers produced in a farm are used for plant cultivation and animal breeding is performed with locally produced own fodders. Plant protection is seen in a different way than in conventional farming. The prophylactics in reducing weeds, pathogens or pests is preferred. Only exceptional situations allow direct applying permitted plant protection means.

Plant protection in Polish ecological farms is not easy. Farmers, mainly at the beginning of the organic farm activity, demand biological plant protection products that could fully replace chemical pesticides. Unfortunately, it is impossible. It results from a very short list of permitted products as compared to a wide spectrum of synthetic pesticides and from complete lack of some groups, such as biological

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herbicides (Wykaz... 2009). Even farmers who are advanced in organic farming, know little on the prophylactics in nursery plantations, which is important and underlined in EU legal acts being obligatory in organic farming.

Material and methods

The study includes data collected from 4813 organic farms audited by certifying unit Ekogwarancja PTRE. Within the studied group, 585 farms applying plant protection products were taken under consideration. Analysis included types of the applied products, number of farms where a product was used, total amount of the product and specification concerning the treated cultures: agricultural crops, vegetables, fruit trees, berries, etc.

Results

In 2008, the certifying unit Ekogwarancja PTRE audited and certified 4908 farms, including 4813 with positive results. The group included 3207 organic farms. The others were in their first or second year of conversion into organic farming.

Plant protection means were applied in 585 farms (12.2% of all positively audited farms). These numbers do not suggest that remaining farms (almost 90% of studied farms) had no problems with plant protection. Unfortunately, the majority of farmers decided to get into organic farming, hoping for subsidies for that agricultural system. Their farms are extensive (Kuś 2008).

In small farms – several hectares – agricultural goods are utilized for own needs or their families, while product manufacturing is incidental (Łuczka-Bakuła 2008). In the case of good harvest, the surplus is sold on local market, often with no remarks that they are organic farming products. These farms most frequently produce cereals, sometimes potatoes with the largest problem – potato beetle, which is manually removed.

In the organic farm group, there are also such, the owners of which live in distant cities. Land of their farms are sustainable meadows cut not more than once a year. Neither fertilizers nor plant protection products are used in these farms, whose area is often several hundred hectares (Kuś 2008).

The group of 585 farms, in which plant protection means were applied, belong to producing farms (Ekogwarancja PTRE... 2009). In 2008 the studied farms used 19 plant protection products (Table 1), including 14 ones from a current list of Institute of Plant Protection in Poznań (Wykaz... 2009).

Miedzian 50 WP was most often used – it was applied in 252 farms, then Bioczos BR – in 136 farms, Siarkol Extra 80 WP – in 35 farms, as well as Grevit 200 SL and Novodor 02 SC – in 30 farms (Table 1). Among the applied products, there are some with active substance listed in EU Directive (Commission... 2008), although not registered in Poland. Applying these products is not contradictory to

Table 1

Plant protection means applied in organic farming

Lot no.	Number of farms	Name of plant protection product	Amount of applied product	Plantations where the product was applied
1	2	3	4	5
1	252	Miedzian 50 WP	3,276.2 kg	**Fruit trees:** apple, cherry, sweet cherry, plum, peach, apricot, hazel, walnut **Berries:** black currant, red currant, strawberry, raspberry, chokeberry, blueberry, gooseberry, wild strawberry **Root crops:** potato, beet root **Vegetables:** cucumber, tomato, red beet, pepper, cabbage, onion, leek, pea, bean, radish, rhubarb, parsley, carrot, broccoli, cauliflower
2	136	Bioczos BR	1,904.0 l	**Fruit trees:** apple, cherry, tree nursery, peach, hazel **Berries:** blackberry, strawberry, black currant, red currant, raspberry, gooseberry, grape **Root crops:** potato **Vegetables:** French bean, pumpkin, parsley, cucumber, pepper, cabbage, pea, dill, rhubarb, carrot, red beet **Ornamental plants:** chrysanthemum **Herbs:** valerian, melissa, thyme
3	35	Siarkol Extra 80 WP	714.0 kg	**Fruit trees:** cherry, peach, pear, apple **Berries:** black currant, strawberry, red currant, gooseberry, raspberry **Root crops:** potato, beet root
4	30	Grevit 200 SL	75.8 l	**Fruit trees:** cherry, peach, apricot, sweet cherry **Berries:** black currant, red currant, gooseberry, raspberry, strawberry **Root crops:** potato **Vegetables:** onion, carrot, parsley, cucumber, tomato, pepper, broccoli, cucumber, bean, leek, rhubarb, French bean, cabbage, pumpkin **Ornamental plants:** chrysanthemum **Herbs:** valerian, basil
5	30	Novodor 02 SC	77.0 l	**Root crops:** potato
6	8	Biosept 33 SL	5.6 l	**Fruit trees:** cherry **Berries:** raspberry, strawberry, black currant, red currant **Root crops:** potato **Vegetables:** cucumber, tomato, bean, pumpkin, carrot **Herbs:** thyme
7	30	Biochikol 020 PC	111.8 l	**Fruit trees:** cherry, apple, walnut, plum **Berries:** strawberry, raspberry, black currant, red currant, blackberry **Root crops:** potato **Vegetables:** cucumber, tomato, bean, pepper, rhubarb, parsley, cabbage

Table 1 – cont.

1	2	3	4	5
8	7	Cuproflow 375 SC	83.0 l	**Fruit trees:** apple, cherry, plum, apricot, peach, pear, sweet cherry
9	5	Bovecol	655.0 l	**Berries:** strawberry, raspberry
10	14	Tiotar 800 SC	378.0 l	**Fruit trees:** apple, cherry, plum, walnut, apricot, peach, pear **Vegetables:** cabbage, tomato, cauliflower
11	6	Antifung 20 SL	215.0 l	**Fruit trees:** apple **Berries:** raspberry, black currant **Root crops:** potato **Vegetables:** carrot **Herbs:** thyme
12	9	Madex SC	19.2 l	**Fruit trees:** apple, plum, peach, sweet cherry, cherry, pear
13	4	Treol 770 EC	62.0 l	**Fruit trees:** peach, cherry, sweet cherry, apple, plum, pear **Berries:** black currant, strawberry
14	1	Spruzit DP	1.0 l	**Root crops:** potato
15	4	Promanal 60 EC	34.0 l	**Fruit trees:** apple, plum
16	4	Lime sulphur (Calcium polysulphide)	2,130.0 l	**Fruit trees:** plum, peach, cherry, pear, apricot, apple
17	2	*Beauveria bassiana*	120.0 l	**Berries:** strawberry
18	5	SpinTor 240 SC	3.7 l	**Fruit trees:** apple, pear **Root crops:** potato **Vegetables:** cucumber, leek, broccoli, pepper
19	3	Paroil	77.0 l	**Fruit trees:** plum, apple, cherry

EU legal acts, while it is prohibited in Poland, according to Plant Protection Act voted in on the 18 December 2003 (Ustawa... 2004 a) and amended in 2008 (Obwieszczenie... 2008).

Applying some products for plants, for which it was not registered, is another issue. It may result from a very poor list of permitted agents and from economizing by producers registering only the most popular preparations, i.e. generating the largest income.

The Californian Liquid – that is forbidden in Poland for application not only in organic farming – is among agents used in farms certified by Ekogwarancja PTRE... (2009). Annex II to Commission Regulation... (2008) lists that preparation as permitted in organic farming; however, Polish law bans it. Discussion on Californian Liquid application is being undertaken in various horticultural publications.

Ekogwarancja PTRE... (2009) achieved the permission of Ministry for Agriculture and Rural Development to test the agent under organic farming conditions, thus the preparation can be found on a list of permissible means applied in farms certified by the unit (Zezwolenie... 2008).

Discussion

Organic farming law stresses the importance of prevention in plant protection. Council Regulation (EC)... (2007) gives some examples of such prevention like promoting natural enemies, using resistant species and cultivars, adequate crop rotation and plant nursing. The regulation mentioned allows in some cases the use of an approved plant protection product. In our country the list of approved plant protection products for organic farming is supervised by the Plant Protection Institute – National Research Institute in Poznań (Wykaz... 2009). Plant protection products presented in this study are on Institute's list in majority. Too small number of the approved plant protection products provokes some farmers to use plant protection means approved in the European Union but banned in Poland. The usage of banned plant protection products is treated by Certification Bodies as usage of chemical pesticides (Ekogwarancja PTRE... 2009).

The majority of Polish organic farms are extensive (Kuś 2008). They do not apply any plant protection means. Only a small group is market oriented and sells goods directly or delivers them to contracting companies (Łuczka-Bakuła 2008).

Dynamically developing organic food market encourages high quality production. Such production is not possible with prevention steps only, and plant protection products are needed. Unfortunately, extending the list of approved plant protection products in immediate future is not planned (Matyjaszczyk 2008). The few approved products are used for protection of many cultivars and species which does not favour their efficacy.

Conclusions

1. The presented results and literature data indicate that plant protection system in organic farming is unsatisfactory, and the number of farms applying plant protection means is negligible.
2. Great interest of farmers in organic farming is a challenge for research and administration to work out accessible ways of plant protection.
3. Intensification of studies on new and more efficient plant protection products, as well as simplifying the procedures for biological products registration in Poland are necessary.

Streszczenie

ŚRODKI OCHRONY ROŚLIN STOSOWANE W POLSKICH GOSPODARSTWACH EKOLOGICZNYCH

Praca zawiera dane z 4813 gospodarstw ekologicznych, które w 2008 roku uzyskały pozytywny wynik kontroli dokonanej przez jednostkę certyfikującą Ekogwarancja PTRE (stanowi to 32% wszystkich polskich gospodarstw objętych kontrolą). Tylko w 585 gospodarstwach stosowano biologiczne środki ochrony roślin, co stanowi 12,2% wszystkich pozytywnie ocenionych gospodarstw. W badanych gospodarstwach używano w 2008 roku 19 biologicznych środków ochrony roślin. Najczęściej stosowano Miedzian 50 WP i Bioczos BR. Wśród stosowanych preparatów znajduje się 15 środków zarejestrowanych w Polsce, których lista jest publikowana przez Instytut Ochrony Roślin w Poznaniu, oraz cztery dozwolone w rolnictwie ekologicznym Unii Europejskiej, lecz niedozwolone w naszym kraju. W pracy podano przyczyny tego stanu rzeczy.

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