RATIONALIZATION OF PESTICIDE CONSUMPTION FOR GROWED FRUIT CULTURES IN CENTRAL BOSNIA

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Professional article

Abstract

In the last 10 years, the development of small agricultural holdings has prevailed in Central Bosnia. Plant productions in the first region of raspberries, plums and apples are represented. The second region is raspberry, strawberry and apple and the third region is plum, apple and pear. This production is accompanied by the services of agricultural pharmacies, including fertilizers, food and protection. The experience of agricultural engineers and ecologists indicates uncontrolled consumption of fertilizers and protective agents. Another big problem is the absence of agricultural advisory services in the field, so farmers use over-the-counter plant protection products. The use of plant protection products and nutrition without the appropriate dose and concentration is a problem for the cultivated plants themselves and the overall living environment, ie the environment. This paper will show how it is possible to rationalize the consumption of pesticides and apply production to the extent that it is environmentally friendly and whose products will be higher quality, without residues that we take into the body every day by using fertilizers and pesticides without instructions.

Key words: *Healthy living environment, heavy metals, quality and standards in food production, dangers.*

Introduction

Agricultural production of raspberries, plums, apples, pears, strawberries in these regions requires the application of agro-technical and other measures to increase yields. The intake of chemically active substances changes the composition and structure of the fruit. By using artificial fertilizers, at changed doses and concentrations, in different weather conditions and different phenophases of the plant, there is a possibility of exceeding the MDK (maximum allowable concentration), (Fig. 1) which can be detected by controlling the health of the fruit [1].

Fig 1. Raspberry, strawberry, pear, apple plum

1. Types of means and purpose of protection

In plant production, crop protection with plant protection products is common. Plant protection products, pesticides, are mostly chemical, but can also be of biological origin. According to the definition (Regulation 1107/2009 / EC on the placing of plant protection products on the market), [1] these are preparations in the form in which they are delivered to the user, containing active substances and additional non-pesticidal substances (protective substance, synergist, carrier, stabilizer), anticoagulant, athesite, dispersant, etc.) and intended for:
- protection of plants or plant products from all harmful organisms or prevention of the action of those organisms,
- effects on plant life processes, such as substances that act on growth differently from nutrients;
- destruction of unwanted plants or parts of plants, except algae, if the agents are not applied to soil or water for the purpose of plant protection. [2]

The use of pesticides in Europe, including Bosnia and Herzegovina, has been steadily increasing since 1996, and the reduction in their use has not been significantly affected by various activities to apply the principles of sustainable agriculture in recent years. Total annual sales in the EU in 2015 were 400,000 [t] of pesticides, the vast majority of which were used in the agricultural sector. Protection of goods from pests and plant diseases is carried out by applying the following protection measures:
- agrotechnical,
- mechanical,
- physical,
- biotechnical,
- biological,
- chemical.[3]

2. Obligations when working with pesticides

Plant protection products must be used in accordance with the instructions, warnings and notices in the declaration, ie in accordance with the decision on registration or permit, stored in a special room or special container in the original packaging, and empty plant packaging protective products must be properly disposed of. In order to ensure possible exposure to plant protection products, as users of plant protection products, they are obliged to keep and keep records of the means you use for at least three years.

In order to avoid exposure to unpleasant odors of citizens living in the immediate vicinity of areas treated with plant protection products, users of funds, at their request, must announce treatment no later than 24 hours before and provide information on the trade name of plant protection products. products to be used. for treatment, the date and time of treatment and the method of treatment so that citizens can take additional protection measures.

All professional users, distributors and consultants are required to pass an exam confirming that they have the level of knowledge for safe handling and proper use of pesticides, distribution and sale of pesticides and giving advice in selling pesticides, then advice on pesticides in food production and plant protection, plant products and facilities.[7]

Fig.2 Control of residues of pesticide

3.Objectives of agricultural management

One of the goals of the Seventh EU Environment Action Program (European Commission, 2014) is to ensure that by 2020 the use of plant protection products has no harmful effects on human health or unacceptable environmental impact, and that such products are used in a sustainable way. Member States are therefore called upon to take a proactive stance on the protection of human health and the environment, the fulfillment of legal obligations under EU law and the fulfillment of citizens' expectations. It is understood that professional users of pesticides switch to procedures and products with the lowest risk to human health and the environment, of all the means available, and for the control of harmful organisms.[4]

The Action Plan for the Prevention of Pollution and Sustainable Use of Pesticides in the Cross-Border Area is part of the activities within the implementation of the PESCAR project, prepared to promote measures to reduce risks to human, animal and environmental health associated with pesticide use and to promote integrated and alternative measures. control of harmful organisms by:

- develop a better understanding of how pesticides are used and their effects,
- ensure the promotion of measures and procedures based on scientific and professional data, which will reduce the harmful effects of the use of these chemicals, and at the same time enable users to effectively prevent and control diseases and pests,
- ensure networking and involvement of all participants and stakeholders in achieving the common goal of environmental protection by achieving sustainable use of pesticides.

The goals of agricultural management in plant protection are:

- reducing the risk of using plant protection products, for people and the environment;
- reduction of pesticide residue levels in food, drinking water and environmental spheres by strengthening the capacity for pesticide monitoring, and encouraging the application of non-chemical plant protection measures;
- support for programs to increase awareness of the safe use of pesticides for professional pesticide users;
- the best measure is to support the application of the principles of good agricultural practice and the basic principles of integrated plant protection.

In Bosnia and Herzegovina, the process of harmonization of national legislation with EU regulations in the field of agriculture, including phytosanitary, is underway.[5]

4. Conclusion

The use of plant protection products, which are approved for use in accordance with applicable regulations, which should be emphasized to farmers in Bosnia and Herzegovina, and good agricultural practice (GAP) will not lead to exceeding the maximum permitted level of pesticide residues. in food. adverse effects on consumer health. Therefore, all entities that produce fruit or come into contact with fruit production are recommended to strictly adhere to applicable regulations and good agricultural practice. This includes the nationally recommended, permitted or registered safe use of plant protection products in real conditions at any stage of food production, storage, transport, distribution and processing. In this way, the image of domestic agricultural producers on the market of fruits and fruit products is systematically built.

5. Literature

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