

SURVEY ON BEHAVIOR OF PLANT PROTECTION PRODUCTS USERS IN THE REPUBLIC OF SERBIA

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Purpose

The research was prompted by the assumption that users of plant protection products (PPPs) in Serbia are not sufficiently familiar with the regulations and trained for efficient and safe application of PPPs. The aim of the research was to obtain answers to selected questions on the basis of which the training and behavior of users could be assessed, ie whether the application of PPPs is in accordance with the regulations for users supplied with PPPs in smaller stores.

Methodology

The survey of PPP users on knowledge of regulations and behavior related to the use of PPP was organized on the territory of the Republic of Serbia. The survey was preceded by training the interviewers, and the questionnaire was designed to examine the attitudes of respondents on behavior in the selection, application, storage, use of personal protective equipment, knowledge of regulations in this area, packaging waste management and other selected important aspects related to PPPs use. Interviewers conducted the survey from May 7 to May 17, 2021, during which 1030 farmers were face-to-face interviewed in a random and representative sample, in 116 municipalities and 227 agricultural pharmacies across Serbia. The answers to the questions from the questionnaire were grouped into logical units, analyzed and presented for the territory of the Republic of Serbia, the segmentation of the results of the total sample by regions, gender, age and level of education was done.

Results

The majority of respondents apply PPPs according to the label (85.7%), and records on the types and quantities of PPPs stored and used are kept by 75.7% of respondents. A large percentage of PPP users do not use any personal protective equipment (4.6%), while only 21.3% of respondents use complete personal protective equipment. About 6% of respondents bought illegal PPPs, and the main reasons were higher trust (56.6%), better price (25.3%) and recommendations (13.1%). Of the total number of respondents, only 15.6% store PPPs in a special room for this purpose, as many as 24.2% of respondents do not use the rinsing of PPPs containers.

The behavior related to the management of packaging waste from PPPs is worrying, with 50% of respondents disposing of packaging in municipal waste, 37.4% destroying it by burning, 3.3% disposing of it in the field, and only 9.3% keeping it until collection from packaging collection companies.

Of the total sample, the sprayer is owned by 95.7% of respondents, with their calibration before the application of PPPs performed by 38%. Some articles of the Law on Plant Protection Products ("Official Gazette of RS", No. 41/09 and 17/19) enter into force on January 1, 2022. Of special importance are the provisions related to the inspection of equipment for the application of PPPs, and as many as 82% of respondents are not familiar with this. Only 27.4% of respondents know the Law on Plant Protection Products. Of the total number of respondents, 57% are of the opinion that they do not need training about PPPs, 22.2% that they need it, 14.5% that they need it, but they cannot take the time to do so or do not know who to contact (6.2 %). The majority of respondents (40.6%) believe that advisors from extension services should be educators of PPPs users, then representatives of PPPs producers (23.2%), distributors (22.3%), professors and scientists (11.4%). Training of PPPs users is of great importance and in accordance with the Law on PPPs will be mandatory from January 1, 2022, with a small percentage of respondents (11.6%) aware of this. Only 37.7% of respondents in this survey support that the same regulations on plant protection products apply in Serbia as in the EU, 30.3% are against, and 32% do not know which regulations they are.

Conclusions

The obtained results show that PPPs users in Serbia are not sufficiently familiar with the regulations and trained for efficient and safe application of PPPs, that PPPs are largely not applied in accordance with regulations and that there is a high risk to human health and the environment. In this regard, it is necessary to introduce a system of permanent training, periodic testing of knowledge and certification of PPPs users, then a system to control the correctness of equipment for the application of PPPs and mandatory knowledge and compliance with legislation and keeping records on the application of PPPs.

Recommendations

One of the main recommendations for decision makers, local and national authorities that research underlined is the need for development of local mechanisms that would ensure safe disposing of packaging of used pesticides and herbicides, to contribute to the environmental safety and reduce environmental pollution and protect flora and fauna. In addition, recommendation was to invest additional efforts in the provision of information to the wider public (campaigns) to raise awareness of the farmers and the overall public on the devastating effects of the irresponsible waste disposal on the soil, water, food, animals, and the whole environment.