



TURJOEM

The Turkish Journal of Occupational / Environmental  
Medicine and Safety

## P4. USES OF PLANT PRODUCTION PRODUCTS IN AGRICULTURE

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Turkey is located among different agro-ecological regions and cultivates 80 kind of major crops. There are 936 harmful organisms on these cultivated crops. Plant protection products (PPPs) are used for controlling these organisms as being in the world. Three hundred thirty two active substances and 5.990 PPPs are registered in Turkey, by 2013. Pesticides are 90,6% of these products, following traps and pheromones, biological control agents, biopreparates, plant growth regulators and others with 1.25%, 0.55%, 0.5%, 3% and 4.1%, respectively. Currently, 3.5 million ton pesticides are used in the world and its value is around 45 billion USD. Herbicide uses are the first in the world with 47 %. Insecticide and fungicide follow it with 28 and 20%, respectively. As to Turkey, around 40.000 ton pesticides have been used by 2013. Its value is 350 million USD. Pesticide uses are as follows; 42% fungicides, 20% herbicides and 19% insecticides. The most pesticide use is in the Mediterranean region with 30%. The Marmara, The Aegean and the Central Anatolian follow it with 19, 18 and 17% ratio, respectively.

Intensive pesticide use affects human health, biodiversity, beneficial organisms negatively. In addition, it causes water and soil pollutions, resistance on harmful organisms and residue problems in agricultural crops. Eliminate of pesticides negative effects on human health and environment is very considerable for sustainable agriculture. It is necessary to mitigate pesticide uses and risks for providing competition of agriculture sector and food production. This looks possible by using especially widespread of IPM applications and the other chemicals alternative control methods.

The Ministry of food agriculture and livestock's aim and mission is to realize reachability of safety food and good quality agricultural product of market needs of the country and the world and to supply sustainable use of agricultural and ecologic sources. The other our important aim is to generalise environment friendly Plant Protection practices and to increase agricultural product as keeping quality. In this concept, IPM, biological control and biotechnical control practices are very considerable in control of harmful organisms in Turkey. Financial support is also supplied to growers, using environment friendly control methods. In conclusion, while agricultural product increase in 20%, pesticide uses mitigate at 10% in the last decade with all these policies and precautions. Moreover, residue ratio is decreased in 2.2% by pesticide residue controls in fresh fruit and vegetables in preharvest.

**Key words:** Plant protection products, Pesticides, IPM, biological control, biotechnical control