



Hazards and Safe Use of Pesticides in Agricultural Field

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Pesticides have an important space in crop protection of agricultural sciences. Farming community of our country uses many pesticides to protect their crops and stored product from crop pests like insects, mites, rodents, fungus, bacteria, nematodes, mycoplasmas, weeds etc. Some farmers use it indiscriminately in over doses, under doses without following proper time and schedule as well as choosing wrong pesticides to protect their crops. These may cause poor management of pests, pest resistance, pest resurgence as well as environmental pollution. They don't dress up themselves properly during pesticide application time which may fate them with acute and chronic toxicity in their future and this may also cause pest resistance and insect resurgence. The pesticides enter their body through inhalation of spray, unbroken skin, wounds (cuts) in vapors or droplets form and oral ingestion (by mouth with food, drink or cigarettes).

Without following pesticide application proper dose and time, waiting period, Maximum Residue Limit (MRL), Acceptable Daily Intake (ADI) may cause environmental pollution, bio-magnification, pesticidal residual poisoning on human beings as well as other living organisms in the World. Acute poisoning which occur from a single exposure and develop within 24 hours of exposure may affect oral (burned mouth, sore throat), upset stomach inhalation (pain or tightness in chest), dermal (skin itching, blisters, rash), ocular (eyes irritation, temporary or permanent blindness). Delayed i.e. chronic effects may appear long after slow exposure day by day and can cause tumors, gene effects, miscarriage, impotence, birth defects, infertility, sterility, nervous system disorders.

Three important areas when it comes to reducing risk; 1. proper storage and disposal, 2. proper handling procedures and 3. proper use of Plant Protection Equipment (PPE), chemical resistant gloves, apron, goggles, hat, covering shoe etc. While spray-

ing pesticides, pesticide mixing place must be away from ponds, streams, ditches and wells, field must be checked and make sure that there is no people or animal. The disposal of pesticides can, packets etc. should not be in field or water of ponds, river etc. It may be deep buried in soil or burnt. Pesticides should be stored in safe places with lock and key keeping in mind that it would not reach to children, other family members, domestic animals.

To combat these problems, we have to educate farming community regarding safe use of pesticides (application of pesticides with full protective dress code, choice of right pesticides in exact doses and in proper time application) ecological safety and environment friendly new molecules (green level) are to be introduced in pesticide registration procedure. The stress, use of botanicals, microbial pesticides and bio-control agents (predators and parasitoids) should be increased. Finally, Integrated Pest Management (IPM) should be followed where cultivation of resistant/tolerant cultivars, cultural control, mechanical control, bio-rational control, biological control and need based environmentally safe chemical control are practiced for present day plant protection.

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