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commentary

Major Pests in Wheat and its Symptoms

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ABSTRACT

Wheat is one of the major cereal crops with annual global production over 600 MT from about 200 M hectares (FAO 2012). The cultivation of wheat started about 10,000 years ago as part of the Neolithic revolution which state a transition from hunting and gathering of food to settle agriculture. Earlier cultivated forms of wheat were diploid (einkorn) and tetraploid (emmer) with known initial origin of the south-eastern part of Turkey. Subsequent evolutionary adaptation and continuous research produced hexaploid bread wheat that is currently widely adapted in about 95% area of world wheat. Globally, all crop production practices are being highly challeged by biotic and abiotic stresses. Biotic stresses especially insect pests and dieseases causes devastating damage in terms of yield and quality. On average pests cause 20-37% yield losses worldwide which translates to approximately $70 billion annually (Pimentel et al., 1997)? In agro-ecosystems, herbivore insects are abudant and likely to colonise within same population and disperse from one crop field to another depending on the availablility of plant tissues and feeding behaviour of insects.

Keywords: Pests; Wheat; Insect; Plant tissues

Wheat Aphid (Macrosiphum miscanthi):

Damage symptoms: Like other aphids, the nymphs and adults suck the sap from plants, particularly from their ears. They appear on young leaves or ears in large numbers during the cold and cloudy weather. The damage is particularly severe in years of cold and cloudy weather.

Management: Spray 375 ml of dimethoate 30 EC or oxydemeton methyl 25 EC or monocrotophos 36SL in 500 L of water per ha. Since the aphids appear first on the borders of the crop, spray only the infected strip to check further spread.

Armyworm (Mythimna separata):

Damage symptoms: The freshly emerged larvae spin threads from which they suspend themselves in the air and then with the help of air currents reach from one plant to another. In the early stages, they feed on tender leaves in the central whorl and later feed on older leaves and skeletonize them totally. The grown-up caterpillars throw out faecal pellets, which are quite prominent.

In the case of a severe attack, whole leaves, including the mid-rib, are consumed and the field looks as if grazed by cattle.

Management: The pest can be suppressed by collecting and destroying the caterpillars. (ii)Spray 500 ml of dichlorvos 85 SL or 3 kg of carbaryl 50 WP or 1.0 L of quinalphos 25 EC in 500 L of water per ha.

Gram Pod Borer (Helicoverpa armigera):

The gram pod borer attacks wheat at maturity. It feeds on the grains in the ear heads. The damage is more where wheat follows cotton.

Management: Spray 3 kg of carbaryl 50 WP or 2.0 L of quinalphos 25 EC in 500 L of water/ha.

Termites (Odontotermes obesus):

Termites damage the wheat crop soon after sowing and near maturity. The damaged plants dry up completely and are easily pulled out. The plants damaged at later stages give rise to white ears.

Management: Treat the seed @ 4 ml of chlorpyriphos 20 EC or 7ml of endosulfan 35 EC/kg of seed. (ii)If the attack is noticed in the standing crop, dilute 2.5 L of endosulfan 35 EC in 5 L of

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water and mix it with 50 kg of soil and broadcast evenly in one hectare, followed by light irrigation.

Wheat-gall Nematode (Anguina tritici):

Damage symptoms: If the black rounded mamni galls are soaked in water overnight, the coat softens and a large number of larvae are set free. Affected plants are more or less stunted and their leaves are wrinkled, rolled or twisted. A variable number of grains in an infested ear may produce galls. The diseased ears are shorter and thicker than the healthy ones and the glumes are spread farther apart

Management: The wheat gall nematode can be controlled by separating the galls from the wheat seed by floating them on water in a tub. The galls, being lighter, float on the surface and may be skimmed off. The seed should then be dried before sowing. (ii)The pest can also be suppressed by sowing clean seed in uninfested soil. Only one year's fallowing is sufficient to eradicate this nematode from the fields.

CONCLUSION

The widespread use of insecticides is ineffective and economically wasteful in the long run. Many insecticides do in fact accomplish the intended task of controlling pest populations. However, their detrimental health and environmental effects make them an inadequate long term solution.