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ORGANIC PEST MANAGEMENT IN RICE

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INTRODUCTION

Pesticides play a crucial role in controlling pest inspite of atetragenic effect on crop which leads to synthesis of organic pesticide. Generally, organo-chlorine are mainly used for rice cultivation. It causes acute poisoning in birds and stomach disorder in human beings. According to USDA organic farming system which avoids is largely excludes the use of synthetic inputs". Organic farming can be achieved by appropriate cropping techniques such as biological control, natural pesticides from plants and weed control like mechanical cultivation, mulching & flaming. In rice several pests attack the crop like Thrips, gall midge, sting bug, hoppers among which stem borer and brown planthopper shares the large part in infestation 25%. Ecologically based approach is followed to control insect pest.

INTEGRATED PEST MANAGEMENT FOR RICE

Cultural Method

Control of insect pest through adoption of ordinary farm practices in appropriate time.

- Trim and plaster the bunds in rice field to eliminate black bug population.
- Form the Bund narrow and short to avoid rodents.
- Growing of resistant varieties like IR 20, ADT 45.
- Clipping the tip of the seedlings in nursery to control yellow stem border.
- To manage brown planthopper and rodents by leaving 30 cm rogue space at every 2.5 metre.
- Alternate wetting and drying to control BPH and case worm.
- Green manures or on green leaf manures to control pest.

Mechanical Method

Controlling pest with mechanical means by using of barriers or traps, soil solarization and heat treatments

- Soil solarization: Trapping of solar heat through polythene bag to increase soil temperature which is harmful to pest
- Traps-Simple interception device that captures insects moving Through an area. It is also called as attractant.
    1. Blue sticky trap-Thrips
    2. yellow sticky trap-White fly
    3. Bow trap-Rodents
- Rope pulling to control case worm.

Biological Method

Use of living organisms to suppress the pest Population. It includes botanicals, Parasitoids and repellents etc.

- Parasitoids: Insect larvae Lives as parasite, which evenly kills the host

1. Trichogramma japonicum - 5ml/ha

2. Trichogramma chilonis - 5ml/ha

3. Platygaster oryzae - 1 per 10 metre square

- Botanicals: Substance obtained from plants to control pest
- Neem acts as anti-feedant and anti-repellent. It affects insects by delaying metamorphosis and disrupts chitin layer.
    - Neem seed kernel extract 5 % - 25Kg per ha
    - Neem oil 3% - 15 litres per ha
- Botanical powder-Neem seed kernel extract powder, Notchi powder, Ipomea extract to control ear head bug and black bug
- Traditional pest repellents-leave extract, tobacco waster extract, Agave flesh extract, garlic clove extract, mahuwah oil, cow dung extract and Turmeric cooked rice, etc.
- Panchakavya 10, 15, 30 & 50 days after transplanting.
- Mix the seeds of cereals, legumes and cotton in cactus (*Euphorbia neriifolia*) milk solution (100 ml in 1 litre of water) and dry in darkness for 8 hours before sowing. This will enhance the protection from stem borer larvae, termites and other pests.

Preparation

Neem seed kernel extracts 5 %

- Weigh 5 kg powder of NSKE
- Soak it in 10 litres of water and keep it overnight still solution becomes milky
- Filter through muslin cloth and made up volume of 100 litres
- Add one percentage sticking agent. Shake well and use.

Neem oil 3%

- 3 litres of neem oil with 200 ml soap solution and volume made-up to 200 litres of water

Notchi extract

- Collect notchi leaves and shade dry for 15 days Make into fine powder
- Notchi extract with cow urine or buttermilk is used to treat pest

Merits

- Eco friendly
- Non staining
- anti allergic
- Inexpensive
- Post specificity

Demerits

- May not be suitable for large scale
- Time consuming
- Unpleasant smell
- Needs plenty of knowledge
- Laborious

CONCLUSION

The beneficial insect unnatural control of particular pests increased when chemical pesticides are used less in conjunction with biological control. Due to its affordable cultivation costs, IPM benefits rice growers. IPM strategies are appropriate for maintaining plant health which improves soil fertility and benefits human health.