

- 3) Parasites and predators like ladybird beetles, predatory wasps, surface bugs spiders, *Apanteles*, *Bracon* etc should be conserved/release
- 4) Apply neem oil @ 3-5 ml/litre of water to control various pests of potato
- 5) Spray horse tail (*Equisetum arvensis*) /casuarinas extract for control of fungal disease.
- 6) Spraying of crushed green chillies and garlic extract in equal quantities @ 1 litre of extract solution mixed with 200 litres of water effectively controls aphids and jassids population
- 7) Spraying of dried, finely powdered turmeric @ 1 kg mixed with 3-4 litres of cow urine and 12-16 ml. soap solution effectively controls aphids and some diseases
- 8) Apply mixture of 10 kg of ash with 1 kg of sugar to control termites by attracting the black ants to feed on termites
- 9) Spraying Arihotra ash/Amrit pani/panchgavya biodynamix liquid pesticides prepared from *coliotropies*, neem, Karanj lantana, *Datura* sp, Castor *vitex* sp. Leaves controls various pests and disease.

#### **D. Post harvest Management Practices**

1. Sort out pest/ diseased infected or cut/bruised tuber before storage
2. Clean the store properly and cover them with 2 cm thick layer of dry lantana or Eucalyptus leaves to save from tuber infestation in the store by potato tuber moth
3. Install pheromone traps @ 4 traps/100m<sup>2</sup> of storage space to trap potato tuber moth and control from further multiplication and re-infestation

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### **Integrated Pest Management Package and Practice for Potato (*Solanum Tuberosum L*)**



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## Introduction

Next to cereals potato is the most important crop which can be produced in short time and plays a significant role in human nutrition. It is attacked by number of insect pests, nematodes, diseases and rodents. In order to manage them below economic injury level in innovative practice which in turn preserve biodiversity and keeping environment free from pollution IPM package should be adapted as community tool for health crop production and for environment protection. Depending on the situation prevalent to given strategies can be applied.

## Integrated pest management strategies

### A) Cultural Practices :

- 1) Select only healthy seed tubers free from cut or pest/disease infected and of optimum size for planting
- 2) Select resistant varieties like Kufri Jyoti, Kufri Swarna, Kufri Meghna etc.
- 3) Avoid raising potato in sandy soils or areas infected with termites, ants or white grubs
- 4) The land should be ploughed deep to expose soil inhabiting stages of insects, pathogens and

nematode population to natural enemies and solar radiation.

- 5) The bunds should be trimmed to destroy the existing rodent burrows.
- 6) Use only well decomposed FYM as partially decomposed FYM increases termites, ants, pests and disease incidence
- 7) Maintain high ridges with proper drainage.
- 8) Potato should be sown during new moon period as full moon period appears to provide favourable conditions for insect and disease incidence. Harvesting should be done during the descending period of full moon
- 9) The seeds should be planted at 10-15 cm deep
- 10) Intercropping potato with marigold (*Tagetes sp*) reduces nematode infestation
- 11) Off-type and virus infected plants should be removed and destroyed
- 12) Haulm cutting at leaf senescence for vector and late blight infection
- 13) Irrigating the field at 60-90% field capacity reduces potato tuber moth infestation
- 14) Clean cultivation and timely earthing up.

### B) Mechanical practices :

- 1) Collect and destroy larvae, pupae and adults white grubs in kerosinized water. The beetles can be collected and destroyed at night time when they are most active.
- 2) Charge irrigation water with crude oil @ 12 litres/ha to control termites and ants.
- 3) Use sticky yellow traps @ 10 yellow sticky pans/ha for control of aphids, jassids and white fly population
- 4) Install light trap to control potato tuber moth
- 5) Use pheromone trap @ 20 traps/ha for mass trapping of potato tuber moth
- 6) Use molasses baits for control of ants

### C) Biological practices

- 1) Allow pigs to run on heavily infested land to root out and eat the different stages of white grubs at the time of land preparation.
- 2) Mix bleaching powder/wood ash/chopped needle pine/ neem leaves/tobacco sticks and rootlets and incorporate into the soil at the time of land preparation to control soil borne pests.