



17. Ecological engineered crops for enhancing and conservation of natural enemies for the management of insect pests of vegetable crops (Cabbage, Tomato and Brinjal)

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Name of Inventor
Prof. Akhtar Ali Khan, Prof. Zakir Hussain Khan & Dr. Kursheed Hussain

Description of Technology

Vegetable crops viz. Cabbage, Brinjal, Tomato get infested by several insect pests which includes aphid, Diamond back moth, Cabbage butterfly, cabbage semi-looper, Cutworms, Tomato fruit borer whitefly, Flea beetle, shoot and fruit borers etc. Management of vegetable crops as well as insect pests through chemicals is not safe for consumption. Ecological engineering technology helps in increasing the natural enemy populations seven fold compared to general field practice which helps to reduce the pest population by 60 percent with the combination of Ecological engineered crops. Following crop combinations are best suited:

1. Coriander + Dill + Buckwheat + Onions + Cabbage
2. Buckwheat + Marigold + Maize/ Sunflower + cowpea + Tomato or Brinjal

Coriander/ Onion -Repels the pests and attracts natural enemies (especially predators)

Dill (*Anethum sp*)-Repels the pests and attracts natural enemies (especially parasitoids)

Buckwheat- Conserve and attracts the natural Enemies

Marigold-Attracts the pest population from main crop (for egg laying of insect pests)

Maize/ Sunflower -Act as barrier crop for insect pests

Cowpea- Attracts the pest population from main crop

Mulching (with paddy straw)-shelter for spiders, conserve soil moisture and minimize weed growth.



Cabbage (Coriander + Dill + Buckwheat + Onion)



Tomato (Buckwheat + Marigold + Maize + Cowpea)



Brinjal (Buckwheat+ Marigold+ Maize/ Sunflower + Cowpea)

Impact

The technology increases the population of natural enemies, reduces the pest population below the threshold level. Due to number of crops it enhances the population of pollinators which subsequently increases the total yield. It minimizes the use of pesticides and increases the biodiversity both (above and below ground)

Commercial applicability

The technology is suitable for vegetable growers / farmers who are engaged in raising of vegetables on a commercial scale. Since the technology minimises the use of insecticides and pesticides as such helps in reducing the input costs and as a result of increased natural enemy population yield of crops also increases thereby increasing its acceptability on a commercial scale