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Need of Biological Control in Integrated Pest Management

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Introduction-

Agriculture is the backbone of world economy in compare to any aspects. In Agriculture, the sustainable growth of crops ecosystem does play vital role, to the new method for improving the agriculture sector. The word sustainable includes wide and wise use of technology for growing the crops into another level of purity. The agriculture nearly fulfils the needs of almost 3/4th population of the world due to its adoption of newer technologies and various cropping system. In year 2020 the whole world was facing the COVID-19 Pandemic situation and in this situation, the desert locust outbreak was invaded, due to this reason the year 2020 called the worst year of the decade. From the recent studies of ICAR- NBAII, Bangalore India has also concluded that the previous locust invasion was the worst in India since 1993. The important reason for the outbreak was, from two cyclones (May and October 2018), that allowed three generations of breeding – from June 2018 to March 2019. The locust was currently infesting the crops in India, stills the swarms of locust breeding in Horn of Africa and reached India.

Need of Biological Control In IPM-

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Biological control is the equivalent part of the integrated pest management as of its recent advances in the field of Agricultural Entomology to use the both living and non-living organisms and pathogens to control the most destructive insect pest species.

The Major Techniques of Biological Control are-

1. **Conservation and Encouragement of Indigenous Natural Enemy-**Defined as actions that preserve and increase natural enemies by environmental manipulation. E.g. Use of selective insecticides provides alternate host and refugees for natural enemy.
2. **Importation and Introduction-**Importation and introducing natural enemy into a new locality (mainly to control introduced pests).
3. **Augmentation-**Propagation (mass culturing) and release of natural enemy to increase its population.

Two Steps:

a. **Inoculative release-** Control expected from the progeny and subsequent generations only.
b. **Inundative release-** Natural enemy mass cultured and released to suppress pest directly E.g. *Trichogramma* spp. E.g. Parasitoid, *Chrysoperla carnea* predator.

Advantages of Biological Control-

- It provides permanent control.
- It is environmentally safe as chemicals are not used.
- It is safe to operators (field workers).
- It is self-perpetuating.
- It is economical, involving no extra cost.

Conclusion-

The discriminate use of chemicals are still used for the enhancing the quality of grains and food but it also provides the divesting harmful and hazardous effects on mankind including flora and fauna. Now a days the ecosystem is unbalanced and found malnutrition in infants, such kind of effects also been seen on insect predatory groups and beneficial one. So

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application of biological methods in Integrated Pest Management is the best and safest way to conserving the ecosystem and environmental ecology for future generations.

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