HpNPV Virus against Teak Defoliator Moth

Prelims – *Current events of national and international importance| Science & Technology.*

Why in News?

Recently, Kerala Forest Research Institute (KFRI) has successfully identified mass-produced and patented a naturally occurring virus.

- **Teak Defoliator Moth** – It is also known as Hyblaea puera.
- It is the most notorious ***pest and cryptic species*** which affects teak trees.

  Cryptic species are two or more distinct species that are difficult or impossible to distinguish based on morphology (physical appearance) alone.

- **Environment impact –** It has devasted plantations, defoliating entire forests as 6 times a year, weakening the trees and cause significant loss in timber yields.
- **Economic Impact –** 3 Cubic metres of wood lost per hectare in India, annually.
- **Need for natural enemies –** Conventional methods like aerial spraying of chemical pesticides were used, but they faced backlash due to environmental concerns.
- These concerns highlighted the need for eco-friendly alternatives, leading to the search for natural enemies of the teak defoliator.
- **HpNPV Virus –** Hyblaea puera Nucleopolyhedrosis Virus (HpNPV), which causes lethal infection in the pest larvae and prevents widespread defoliation of teak trees.
- It is a ***host-specific virus***, targeting only the larvae without harming the forest ecosystem.
- **Working of HpNPV –** It multiplies trillion times inside a single larva. When the body breaks open, it releases huge quantities of virus.

- The infection is sub-lethal, the virus stays in the insect, gets passed on to the next generation, and become deadly.
- **Application Of HpNPV –** It can be applied during early-stage outbreaks to prevent larger infestations.
- **Economic potential –** This innovation more significant to 64 countries which cultivating teak.
- This eco-friendly technology creates big opportunities to export.

Teak is native to just 4 countries namely, India, Myanmar, Laos, Thailand and these countries have banned chemical pesticide use.

Reference

The Hindu| HpNPV Virus

