AGRI MAGAZINE
(International E-Magazine for Agricultural Articles)
Volume: 02, Issue: 10 (October, 2025)
Available online at http://www.agrimagazine.in
©Agri Magazine, ISSN: 3048-8656

# Viral Diseases of Silkworm and Their Management

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Silk has long been cherished as the "Queen of Textiles," with India and China leading the world in its production. But behind the shimmering elegance of silk lies a delicate balance one that's often threatened by tiny, invisible enemies: viruses.Silkworms (*Bombyx mori*), the producers of this luxurious fiber, are surprisingly vulnerable. Among the various challenges faced by sericulturists, viral diseases are among the most dangerous. They can wipe out entire crops of silkworms in just a few days, leading to severe economic losses.

## Major Viral Diseases in Silkworms

There are four major viral diseases that commonly affect silkworms:

**1. Nuclear Polyhedrosis Virus (NPV)**

- **Also known as:** Grasserie
- **Symptoms:** Swollen, fragile body; skin becomes shiny; white fluid oozes when pressed.
- **Cause:** Ingestion of contaminated leaves or contact with infected worms.
- **Impact:** One of the most severe viral diseases—can destroy 80–90% of a crop if unchecked.

**2. Cytoplasmic Polyhedrosis Virus (CPV)**

- **Symptoms:** Silkworms stop feeding, appear weak; gut turns bluish-white.
- **Cause:** Spreads via fecal contamination and poor hygiene.
- **Impact:** Mainly affects early instars (younger larvae).

**3. Infectious Flacherie Virus (IFV)**

- **Symptoms:** Worms become soft and flaccid; emit foul smell; diarrhea is common.
- **Cause:** Often linked with poor rearing hygiene and hot, humid conditions.
- **Impact:** Often occurs in combination with bacterial infections.

**4. Densonucleosis Virus (DNV)**

- **Also called:** Pebrine-like viral disease
- **Symptoms:** Stunted growth, dark spots on skin, weak silk production.
- **Impact:** Less common but still damaging in localized outbreaks.

## Silkworm viruses can spread through:

- Contaminated mulberry leaves
- Rearing trays, nets, and human hands
- Contact with infected worms or feces
- Environmental factors like heat, humidity, and poor ventilation

Once infected, silkworms cannot be cured. Prevention is the only effective weapon.

## Management and Prevention methods

Fighting viral diseases in silkworms requires strict hygiene, environmental control, and early intervention.

**1. Disinfection**
- Use 0.02% sodium hypochlorite, 2% formalin, or bleaching powder solution to disinfect trays and rooms before rearing.
- Practice personal hygiene-wash hands before handling larvae.

**2. Use Disease-Free Layings (DFLs)**
- Buy eggs only from authorized grainages that test for viral contamination.
- Avoid using eggs from diseased crops or unknown sources.

**3. Maintain Ideal Rearing Conditions**
- Keep temperatures between 24–28°C and humidity around 70–85%.
- Ensure proper ventilation and avoid overcrowding.

**4. Follow Strict Feeding Practices**
- Feed fresh, clean mulberry leaves.
- Avoid feeding wet or contaminated leaves.
- Remove leftover leaves and feces promptly.

**5. Use Antiviral Formulations (Under Guidance)**
- Products like Vijetha, Resham Keet Oushadh, or other commercial disinfectants can help to control viral load.
- Always consult experts before using chemicals or antiviral agents.

**6. Early Detection and Removal**
- Regularly inspect worms.
- Isolate and destroy infected worms immediately to prevent further spread.

## Conclusion

Viral outbreaks can devastate small-scale sericulture farmers, especially in rural regions where silk farming is a key livelihood. With proper awareness, training, and preventive measures, these outbreaks can be significantly reduced. Government sericulture departments and research institutions regularly release updated guidelines, disease-resistant silkworm breeds, and disinfectants. Farmers are encouraged to stay connected with local extension officers and attend training programs.

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