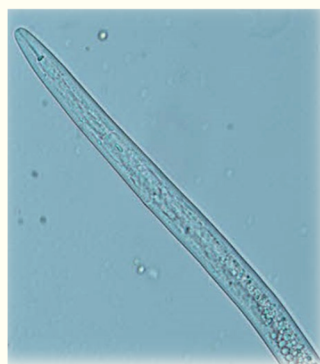


Importance of elephant foot yam

Elephant foot yam is a tropical tuber crop grown in many parts of India (Andhra Pradesh, Kerala, Tamil Nadu, Odisha, West Bengal, Gujarat, Maharashtra, Uttar Pradesh and Jharkhand) for its high yield, market value, and suitability for intercropping systems. It is an important cash crop for small and marginal farmers. The corms are rich in carbohydrates and fibre, used both as food and in traditional medicine. In India, elephant foot yam is cultivated in 42,000 hectares, with an estimated production of 1.04 million tonnes. The average productivity ranges between 40-50 tonnes per hectare under good management practices. Due to its high demand, long shelf life, and profitability, elephant foot yam contributes significantly to rural income and nutrition. Apart from pests and diseases, nematode attack is the major problem that reduces yield and quality of the corms.

What are Nematodes?

Nematodes are microscopic, worm-like organisms that live in the soil and attack plant roots and corms. Though invisible to the naked eye, they cause serious damage to elephant foot yam, reducing both yield and quality.



Root-knot nematode



Lesion nematode

The two most destructive nematodes in elephant foot yam are (i) Root-knot nematode (*Meloidogyne*

incognita, *M. javanica*) - causes knots or galls on roots. (ii) Lesion nematode (*Pratylenchus coffeae*) - causes brown to black lesions and internal rotting in corms. They act as field-cum-storage pests, meaning the damage starts in the field and continues even during storage and transportation.

How do nematodes spread?

- Primary spread- Through infected plating material
- Secondary spread- Irrigation water carry nematodes from infested to other fields, handling of contaminated farm implements, movement of farm labourers and animals from infected fields to uninfected fields

How do nematodes damage the crop?

- They weaken the plant by feeding on roots
- Corms become deformed, cracked, and unfit for market
- Stored corms lose weight (up to 25-30%) and rot during storage

How to look for symptoms?



Nematode infected corms



Nematode galls on a corm

Farmers should look for the following signs in their fields:

- Stunted or weak plant growth
- Yellowing and early drying of leaves
- Galls or swellings on corms
- Soft rot and blackened lesions on corms
- Reduced size and weight of corms
- Poor shelf life and storage losses

How can farmers manage nematodes?

As there is no single method to completely eliminate nematodes, farmers should follow an integrated approach. This combines various cultural, biological, and chemical strategies to reduce nematode population below damaging levels.

Field preparation

- Follow deep ploughing during the hot summer months of April-May (kills the nematodes)
- Avoid planting elephant foot yam in the same field every year (avoids population build up in the soil)
- Practice crop rotation with non-host crops like rice, maize and sorghum (breaks the life cycle of nematodes)

Use of healthy planting material

- Select clean, disease-free corms for planting (reduces initial inoculum)
- Avoid using corms from infested fields (prevents the introduction of nematodes into the new crop)

Application of organic amendments

- Apply well-decomposed farmyard manure or compost @ 10-14 tonnes ha⁻¹ (improves soil health)
- Add neem cake (250-500 kg/ha) at the time of planting (reduces nematode population)

Biocontrol methods

- Apply *Trichoderma asperellum* enriched cowdung slurry at the rate of 5g kg⁻¹ corm three days prior to

planting (It is a friendly fungi that kill nematodes or suppress them)

Chemical control (only when needed)

- Use of newer nematicides*, Fluopyram 34.48% SC @ 0.5 ml l⁻¹ or Fluensulfone 2% GR @ 1g plant⁻¹

*Note: These chemicals are toxic and should be used with proper protective gear and as per recommended dosage. Always read the instructions carefully before usage and avoid overuse to prevent soil pollution and health risks.

Post-harvest care

- Harvest the corms carefully to avoid cuts or injuries
- Select only healthy and firm corms for storage
- Store in well-aerated, dry places to prevent rotting
- Do not store infected or damaged corms as they spread infestation
- Remove & destroy infected crop residues after harvest

Conclusion

Nematodes are silent enemies of elephant foot yam. They reduce both yield and market value. But with proper care and integrated management, farmers can keep their fields healthy and get good profits from this crop. Regular monitoring, clean planting material, organic amendments, and biological control are key steps toward safe and sustainable nematode control.

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