



Banana Covid: A Novel Fungal Strain

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Why in News

Recently, a novel fungus strain ***Fusarium wilt TR4*** has started infecting the Banana plantations in India.

It has been described as the equivalent of **Covid-19** in Bananas. Similar to Covid-19, there is no treatment yet for the new fungal disease.

Key Points

- **The Epicentre:**
 - In the midst of the **coronavirus disease outbreak**, *Fusarium wilt TR4*, has devastated plantations across the globe.
 - **Ecuador**, the largest exporter of Banana is currently the epicentre.
 - Banana is the world's most globally exported fruit and the disease is breaching borders through international trade.
 - The spreading disease has impacted the \$26 billion global banana trade.
- **The strain, Tropical Race 4 (TR4):**
 - It was first identified in Taiwan, and has moved from Asia to the Middle East and Africa, reaching as far as Latin America.
 - It cripples plantations by first attacking the leaves, which turn yellow from their trailing edges before wilting away.
 - According to the **Food and Agriculture Organization of the United Nations**, TR4 is one of the **"the most destructive of all plant diseases"**.

- **Impact in India:**
 - The fungal strain is now spreading and threatening output in India, the world's largest producer of bananas.
 - **Katihar and Purnea in Bihar** and **Maharajganj in Uttar Pradesh** are the hotspots in India.
 - TR4 has infected the most commonly sold variety, **Grand Nain (musa acuminata)**.
 - **Grand Nain:** It accounts for 55% of the banana area in the country and accounts for 62% of commerce, including exports.
 - Inability to contain TR4 could impact the farm incomes and push up banana prices.
- **Measures to curb the spread:**
 - **Plant Quarantine:** Scientists recommend biosecurity measures including “plant quarantine” to slow its spread.
 - **Growing Alternative Varieties:** In hotspot Katihar, scientists have set up an experimental farm in which they are growing several cultivars. Cultivars are different varieties of the Banana species and have shown potential resistance to TR4
 - **Biopriming:** The **Indian Council of Agricultural Research** is advocating a set of measures, known as **Biopriming**.
 - It is a treatment of seed with beneficial organisms, as an alternative to treatment with pesticides, prior to sowing.
 - Seed treatment integrates biological (vaccination of seed with beneficial organism to protect seed) and physiological aspects (seed hydration) of disease control.
 - **Chain of Infection:** It suggests farmers to abandon the crops whose plantations have been affected and grow rice for a year or two before returning to banana. It would help in breaking the chain of infection.

Banana

Being a tropical crop banana grows well under the following conditions:

- **Temperature:** 15°C – 35°C
- **Rainfall:** an average rainfall of 650-750 mm
- **Regional variation:** Humid tropics to dry mild subtropics
- **Soil:** Deep, rich loamy soil is most preferred for banana cultivation
- **Nutrients:** It has several nutrients like calories, protein, carbohydrate, potassium and trace quantities of vitamin C and B6.

Fusarium Wilt of Banana

- It is popularly known as **Panama disease**.

- It is a lethal fungal disease caused by the soil-borne fungus ***Fusarium oxysporum***.
- It is the first disease of bananas to have spread globally in the first half of the 20th century.
- Fusarium has entirely **wiped out Gros Michel**, the dominant export variety of bananas in the 1950s.
- It was in response to this, a new resistant variety, **Grand Nain**, came up, which has now fallen to TR4 infection.

Way Forward

- There is a need to identify or develop new resistant varieties. A concerted effort is also required from industry, research institutions, government and international organisations to prevent spread of the disease.
- Banana plantation is a potential source for ensuring food security. Hence, it is vital for the countries to collaborate and mitigate solutions to prevent the loss of plantation due to fungal infection.

Source: HT