



## Paddy Dwarfing

### Why in News?

Recently, a **mysterious disease hit the paddy crop** causing “**dwarfing**” of the plants in Punjab and Haryana.

- Scientists have decoded the mystery blaming it on ‘**Southern Rice Black-Streaked Dwarf Virus**’ (**SRBSDV**), named after **Southern China** where it was first reported in 2001.

### What is Paddy Dwarfing?

- The characteristic symptoms of rice dwarf disease are **stunting of the plant** and **appearance of white chlorotic specks on foliage**.
- The height of the stunted plants showed a reduction from 1/2 to 1/3rd of the normal plants.
- These plants had shallow roots and could be easily uprooted.
- Such plants were observed in almost all the cultivated varieties in the farmers’ fields.
- Dwarfing of plants was reported at 10% to 25% in general and in some cases, it exceeded 40%.
- The incidence of stunting was more pronounced in early sown paddy crops, irrespective of the variety.

### What is SRBSDV?

- **Southern rice black-streaked dwarf virus (SRBSDV)** is a non-enveloped **icosahedral virus** with a genome of **10 double-stranded Ribonucleic Acid RNA segments**, and is a novel species in the **genus Fijivirus (family Reoviridae)**.
  - An Icosahedral Virus is a virus consisting of identical subunits that make up equilateral triangles that are in turn arranged in a symmetrical fashion.
- The SRBSDV is transmitted by **white-backed plant hopper (WBPH)** in a persistent circulative and propagative manner.
- In addition to rice, SRBSDV also infects different weed species as nymphs of **WBPH** can transmit the virus more efficiently as compared to adults.
  - Long-distance transmission of this virus may occur through WBPH migrating with typhoons and strong convection winds.

### What Could be Done for Prevention?

- **Since there is no corrective measure for the viral disease**, farmers should regularly monitor the crop for the presence of WBPH and a few **plants should be slightly tilted** and tapped 2-3 times at the base at weekly intervals.
- If WBPH nymphs/adults are seen floating on water, **then insecticides** can be sprayed towards the base of the plants.
- The farmers are advised to follow the **transplanting dates advised by Punjab Agricultural University PAU** since stunting was observed to be more in the early transplanted crops. It will not only help in managing viral disease but also save water.

**UPSC Civil Services Examination Previous Year Question (PYQ)**

**Q. Consider the following: (2018)**

1. Birds
2. Dust blowing
3. Rain
4. Wind blowing

**Which of the above spread plant diseases?**

- (a) 1 and 3 only  
(b) 3 and 4 only  
(c) 1, 2 and 4 only  
(d) 1, 2, 3 and 4

**Ans: (d)**

**Explanation:**

- Extensive and severe epidemics of plant diseases are mostly the results of wind blowing including dust blowing which cause transmission of the pathogens. **Hence, 2 and 4 are correct.**
- Splashing rain drops mostly transmit the foliar diseases from leaf to leaf, from shoot to shoot and even from plant to plant in case of closely spaced crops. **Hence, 3 is correct.**
- Birds play a minor role in disease transmission in plants. It is mainly by way of dispersal of seeds of higher flowering plant parasite, etc. **Hence, 1 is correct.**
- **Therefore, option (d) is the correct answer.**

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