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Integrated disease managements in cucurbitaceous crops

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Cucurbitaceous is a plant family commonly known as melons, gourds or cucurbits, among the vegetables the cucurbitaceous crop form one of the largest group in the vegetable kingdom they includes about 118 genera and 825 sp. In India a number of major and minor cucurbits are cultivated, which share about 5.6 per cent of the vegetable production. Successful vegetables cultivation is hampered due to several factors like insect pest, disease and nematode. Disease is one of the major factors in minimizing the productivity causing more than 40 per cent of yield loss. Sometimes, under severe infestation; there is total destruction of the crop. Several control method have been tried to over come these problem. Since the green revolution the soil fertility is showing the sign of fatigue and plant developing resistant to disease is breaking down and causing soil and water pollution due to continuous use of chemical fertilizer. Hence the farmer and consumer are looking safe to health as well as environment friendly solution. The best management strategy combines cultural, biological, host-plant resistance, to reduce disease infestation and timely used fungicides if needed such programmer is known as integrated disease management (IDM). With the principle of IDM encompassing avoidance of disease preventing inoculums by seed treatment, and plant quarantine, eradication by biological methods, crop rotation and rouging and protection by chemical spray on the diseased plants and insect vectors is one of the common tools at severe stage but multi-resistant cultivars/ line is one of the best answer to manage the disease problems.

Cucurbits are affected by a number of disease like downy mildew, powdery mildew, gummosis, Phytophthora blight, anthracnose, Cercospora leaf spot, Phoma blight, collar rot,

Fusarium wilt, white rot, root knot nematode, bacterial wilt, watermelon bud necrosis and leaf distortion virus. Among them, damping off, powdery mildew, downy mildew, anthracnose, Alternaria blight, bacterial wilt and virus are becoming the most destructive disease in cucurbits.

Damping off fungi infect and rot both seeds and young seedlings. Infected seeds may not emerge from the soil. Seedlings may emerge with soft brown water soaked areas on the cotyledons (seed leaves). Stems may be thin, wire-like and unable to support even the small seedling.

Management:

- Do not plant cucurbit seeds when soils have completely warmed to 20°C at a 2" depth.
- Keep bed moist but not to be water logged.
- Treated seed should be sown which is coated with a layer of fungicides that will help to prevent seed rot.

Powdery Mildew: (*Podosphaera xanthii*):

Powdery mildew, caused primarily by the fungus *Podosphaera xanthii*, infects all cucurbits, including muskmelons, squash, cucumbers, gourds, watermelons and pumpkins. In severe cases, powdery mildew can cause premature death of leaves and reduce yield and fruit quality.

Identification:

Powdery mildew is first evident as pale yellow leaf spots. White powdery spots can form on both upper and lower leaf surfaces and quickly expand into large blotches which ultimately can cover entire leaf, petiole and stem surfaces. When the majority of the foliage is infected, the plant is