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Root Wilt of Coconut

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Root wilt disease of coconut, popularly known as **Kerala wilt**, is caused by the phytoplasma pathogen *"Candidatus Phytoplasma"*. In Malayalam, the disease is locally called **"Kaatuveezhcha."** Although the disease is not lethal, it is highly debilitating in nature, as it gradually weakens the palm and considerably reduces coconut yield. The disease was first reported in 1882 from the Erattupetta area of Meenachil Taluk in Kottayam district following the great flood of 1882.

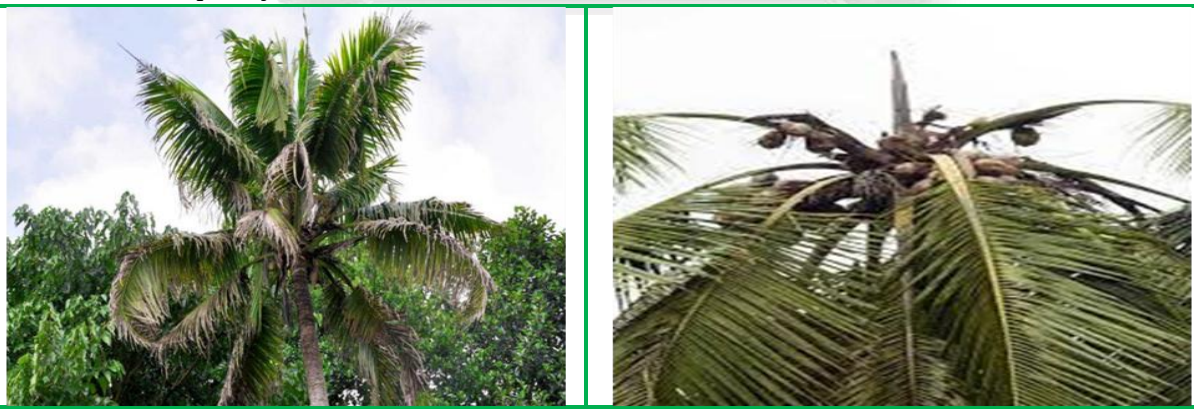
Now the disease is in contiguous manner in 8 southern districts of Kerala from Thiruvananthapuram to Thrissur. And in isolated patches in the remaining six northern districts of kerala. Apart from this,the disease is reported in isolated spots in Theni, Coimbatore, Thirunelveli and Kanyakumari districts of Tamilnadu.

The annual loss of this disease is about 968 million nuts. The spread of this disease is higher in sandy loam, sandy alluvial and heavy texture clay soils. The spread of this disease is also higher in waterlogged low lying areas.

The recent survey was conducted by Department of Agriculture, Kerala shows the disease has reduced by 24% due to the destroyed the diseased palms, planting the quality seedlings and replacement of coconut with rubber.

Symptoms

The most characteristic symptom of root wilt disease of coconut is **"flaccidity"**, which refers to the abnormal bending or ribbing of the leaflets in the middle whorl of the palm, giving an appearance similar to the ribs of mammals. Other important symptoms include yellowing of leaves, marginal necrosis or drying of leaf margins, and a gradual reduction in the size and number of leaves. As the disease progresses, the palms become weak and show a marked decline in vigour and productivity. Additional symptoms of root wilt disease include stunting of palms, reduction in the size of nuts, rotting of roots, and delayed flowering. In certain cases, necrosis of the spathe and spikelets is also observed. The disease not only reduces coconut yield but also affects the quality of copra and oil, leading to a decline in oil content and overall oil quality.



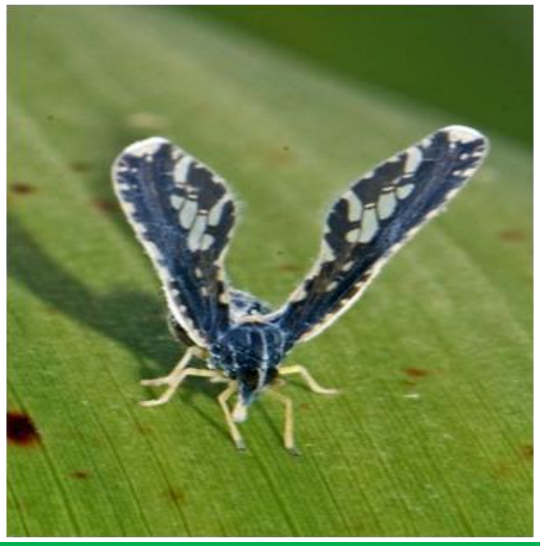
Flaccidity Symptom

Yellowing of Leaves

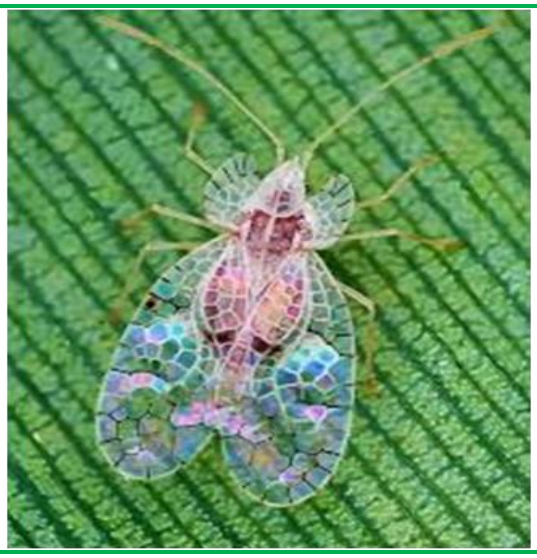
Rotting of Root

Insect Vector

The root wilt disease is transmitted by the two vectors. They are Lace bug (*Stephanitis typica*) and Plant hopper (*Proutista moesta*)



Proutista Moesta



Stephanitis typica

Mode of Spread

The spread of the root wilt disease by,

! The Vegetative propogation or Grafting are done using the infected plants.

! The vascular connections are made between the infected and non-infected host plants by parasitic plants as Dodder (*Cuscuta spp*)

! Transmitted by insect vectors. The vectors are feeding the non infected plants.

Management

Cultural Method :

- Selection of disease free seedlings.
- Cut and remove the diseased palms.
- Remove the uneconomical palms yielding less than 10 nuts per tree per year.
- Growing the green manure crops in coconut basins and then incorporated. The green manure crops are *Crotalaria juncea, Mimosa invisa, Calapagonium mucanoides, Pueraria phaseoloides.*
- The suitable green manure crops for sandy and alluvial soils are Cowpea and sesbania.
- Irrigate the palms during the summer months at the rate of 600-900 litre of water/ basin once in 4 to 6 days.
- Intercropped with the tuber crops (Yam and Tapioca), fruit crops (Banana) and spice crops (Turmeric and Ginger).

Chemical Method:

- Spray the 0.01% Monocrotophos to control the insect vectors.
- To manage the insect vectors by mixing Phorate 10 G with 200g sand placed around the base of the spindle.
- Magnesium may be applied @ 3 Kg MgO per tree per year.
- Apply balanced dose of fertilizers 1 kg Urea, 1.7 kg SSP and 1.7 kg MOP.
- In Kerala soils, application of dolomite @ 1 kg/palm/year , because the soils in kerala are very acidic in nature and have Ca and Mg deficiencies.

Biological Method:

- Application of *Trichoderma viride* and *Bacillus subtilis* in the coconut palms.
- Apply 50 Kg FYM (Farn Yard Manure).
- Apply 5 Kg Neem cake per palm per year.

Varieties/Hybrids Released

The ICAR-CPCRI, Regional Station Kayamkulam developing the resistant/tolerant varieties of Coconut to Root wilt disease. They released 3 varieties.

1.Kalparaksha (Selection from Malayan Green Dwarf): This variety was identified in 2004 as resistant to root wilt disease. But it was released at July 2008 by Central Release Committee. This variety is most suitable for tender nut variety, have more amount of tunder nut water 275 ml/nut. This variety yields 88 nuts/palm/year with 2.85 tonnes/ha of copra and 1.85 tonnes/ha of oil yield.

2.Kalpasree (Selection from Chowghat Green Dwarf): This variety was released in March 2012 by Central Variety Release Committee. The tender nut water 172 ml/nut of this variety. The tender nut water is sweet and tasty. This variety yields 55 nuts/palm/year with 0.94 tonnes/ha of copra and 0.55 tonnes/ha of oil yield. This variety is most suitable for homstead gardens. The disadvantage of the Kalpasree variety is small size of nut and copra content are less.

3.Kalpasankara (CGD*WCT): This variety was released in March 2012 by Central Variety Release Committee. The height of this hybrid is 3.80m at 13 years. This hybrid is early flowering in nature (after four years of planting).The tender nut water is 373ml/nut is sweet in taste. The yield of this hybrid is 84 nuts/palm/year with 2.50 tonnes/ha of copra and 1.69 tonnes/ha of oil yield.

References

1. Gupta V.K., Paul YS. 2016. Diseases of plantation crops.Kalyani publishers, New Delhi. Pg No:45-47.
2. Krishnakumar, V., Merin Babu., Regi J. Thomas, Josephrajkumar, A., Anithakumari, P., Vinayaka Hegde and Chowdappa, P. (2015) Root (wilt) disease of coconut- Bench to bunch strategies, Technical bulletin No. 91 ICAR-CPCRI, Regional Station, Kayamkulam, p 28.