

B-85: Survey of Papaya viruses in Sri Lanka

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A virus disease affecting the papaya plants in Sri Lanka was limiting the expansion of cultivation and production specially in the wet and intermediate zones.

Survey on papaya virus incidence in the wet, intermediate and some parts of dry zones of Sri Lanka was carried out from April '92 to April '94. Out of 25 administrative districts 17 districts namely Kandy, Colombo, Kegalle, Nuwara Eliya, Matale, Kalutara, Matara, Gampaha, Galle, Badulla, Ratnapura, Kurunegala and Hambantota were subjected to the survey. Healthy and virus infected trees were counted separately by the visual symptoms.

A wide range of symptoms were observed on virus infected papaya plants. Leaf symptoms include mottling, mosaic and distortion. Ringspots were also visible on the leaves of greenhouse grown seedlings when inoculated artificially. Water soaked streaks, rings or patches appear on the stems and petiole. The most distinctive symptom was ringspot markings on fruits. The rings appear as darker green greasy rings on immature fruits and they turn dark brown or grey when the fruits ripen. Fruits became smaller and less tasty at the later stage of infection.

The highest number (5310) of papaya plants were surveyed in Kurunegala district. Number of plants observed in Ratnapura, Gampaha, Kandy, Kegalle, Puttalam, Kalutara and Matale districts was also high. The highest number of plants in home gardens concentrated into one area was observed in Hambantota District.

Virus incidence was found to be highest in wet zone moderate in intermediate zone and lowest in dry zone. The high temperature and low humidity in the dry zone may have direct impact on virus or vector population resulting in low virus incidence. From the surveyed part of the dry zone, virus incidence was concentrated only to an area near the northern border of dry and intermediate zone. This area is in Matale, Anuradhapura and Polonnaruwa districts.

There was a clear demarkation of virus affected area by the dry zone border line of the south of the island, suggesting strong environmental effect on virus incidence. In addition, isolated virus incidence was observed in some towns in the intermediate and dry zone of Eppawala, Nikaweratiya, Polonnaruwa and Weeraketiya. There is a danger of spreading the virus disease from those to the surrounding area. Some isolated areas of the wet zone was observed to be free of virus e.g. South of Sinharaja forest, near Sripada mountain, Galpotha area surrounded by rubber estates. The reason for this may be the vegetation or mountain barriers which obstruct the spread of the disease. Highest incidence of virus was found in Kandy district and the lowest was found in Hambantota. Distribution and intensity of virus incidence in surveyed districts were also

Papaya plants apparently resistant to virus disease were selected from highly infected areas during this survey and they were included in a genetic improvement programme.