

Following verification of the causal organisms of the various diseases of economic importance, an intergovernmental agreement about disease distribution could be arranged. It would be advisable to circulate this document widely among interested countries for use with quarantine procedures. In 1949 during the Phytosanitary Conference in the UK, the formation of a Plant Protection Commission for the Asia and Pacific Region was recommended. After FAO had received the formal governmental approvals for constituting the Commission, it met for the first time in 1956. Currently this Commission has representation from 24 member countries. One of the Commission's main functions is to monitor the disease and insect pest situation in the region, and keep the member countries informed of new pests. The Commission has also distributed a list of existing insect pests and diseases in the region.

It is essential that this meeting should make a suitable recommendation to the Commission to include specific insect pests and diseases of groundnut, including PStV, in the intergovernmental agreement. The 15th session of the Commission was scheduled to be held in October 1987 and the recommendations by the group could be considered for adoption during this session.

Peanut Stripe Virus Yield Loss Studies

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Accurate yield loss assessments for peanut stripe virus (PStV) in groundnuts are difficult to make. Estimates under greenhouse conditions are relatively easy to obtain, but may not reflect losses under field conditions. Crops raised under screen cages which can exclude aphids are severely affected by shading. Over 30% yield losses have been recorded in groundnuts from shading alone as compared to crops grown without screen cages. Screens also create temperature and humidity differences.

Yield losses estimated under natural growing conditions would probably give the most acceptable data. However, it is difficult to conduct these experiments because of virus spread from infected to healthy plants by aphids. Thus the following protocols are proposed for consideration:

- Plant a non-host crop such as maize in a large field (1 ha). Establish 12 small plots (4 x 4 m) for groundnuts within the maize field so that each groundnut plot is at least

20 m distant from any other groundnut plot. Use groundnut seeds that are not contaminated with PStV. Inoculate plants in six randomly selected plots, and leave the other six plots untreated for comparison. It may be essential to inoculate plants at different growth stages.

- Establish 24 groundnut plots (using virus-free seed) in one general location that is isolated from other groundnut plots. Apply a granular systemic insecticide such as Temik® (aldicarb) to the soil at sowing and apply foliar insecticides weekly after emergence. Inoculate the plants in six plots with PStV. After harvest compare the yield of inoculated plots to the yield of the six other plots that have the least incidence of PStV.
- Sow groundnut seed known to have a low level (about 1 %) of PStV seed infestation in a plot 50 x 50 m. Two weeks after emergence, place red flags beside each of 100 PStV-infected plants, and 600 white flags (randomly throughout the field) beside groundnut plants that are healthy. Six weeks after emergence, place a red mark on each white flag that is now beside an infected plant. Twelve weeks after emergence, place a blue mark on each white flag that is now beside an infected groundnut plant. Before harvest, place a yellow mark on each white flag that is beside an infected groundnut plant. After harvest, compare the average plant yield for those marked red, blue, yellow, and white.
- Many potyviruses lose their ability to be transmitted by aphids after several years of being mechanically transmitted in a greenhouse. When such an isolate of PStV is obtained it should be used to inoculate plants in randomized complete block designed plots in the field.
- Other tests may be appropriate such as open top chambers, but these usually are expensive and take considerable time to maintain.