

Viroses of Groundnut in Tamil Nadu

Groundnut crop in Tamil Nadu is affected by two types of viroses, namely rosette and mosaic. Rosette disease is characterized by clumping of axillary shoots, stunting of plants and production of few or no pods. The leaves of mosaic diseased plants exhibit circular chlorotic rings in the early stages followed by the appearance of dark green blisters. More often the leaves are reduced to filiform structures. Later, the cluster of malformed mosaic diseased leaves give the plants a bunched top appearance.

Rosette disease occurred in Coimbatore, Thanjavur, Tiruchirapalli, Madurai, Tirunelveli, Chingleput, Ramanathapuram, South Arcot, Salem and North Arcot districts of Tamil Nadu. The prevalence of mosaic disease was negligible and was seen only in Coimbatore, North Arcot and Chingle-

put districts of Tamil Nadu. The incidence of rosette disease was found to be 50.9% more in bunch varieties of groundnut in comparison with that of spreading varieties. The incidence of rosette was found to be 4.92% and 3.26% in bunch and spreading varieties of groundnut respectively. In irrigated crop the incidence of rosette disease was 4.87% and in rainfed crop it was nearly twice that of rainfed crop.

Rosette disease was readily graft transmissible and by the aphid vector *Aphis craccivora* Koch. Mosaic disease of groundnut was transmitted by grafting only.

The loss in yield due to rosette disease varied from 27.0 to 100.0% (vide Table). Mosaic diseased plants under severe conditions produced no pods and the loss amounted upto 100 per cent.

TABLE
Reduction in the yield of Groundnut due to Rosette and Mosaic diseases

Rosette disease					
Under field conditions				Under insect proof glass house conditions	
Healthy	Mildly diseased	Moderately diseased	Severely diseased	Healthy	Diseased
(Yield of groundnut pods in grams per plant)					
16.8	8.9	3.3	0.5	2.0	0.0
Mosaic disease					
Under field conditions			Under insect proof glass house conditions		
Healthy	Diseased		Healthy	Diseased	
(Yield of groundnut pods in grams per plant)					
14.8	0.3		3.4	0.0	

Rosette disease was found to spread in groups around an early infected plant. Maximum incidence of the disease was found when the crop was 75 days old. There was a positive correlation between the percentage of aphids infesting the crop, aphid infestation and the incidence of rosette disease. The initial incidence of rosette disease appeared to be caused by the few incoming viruliferous alatae and secondary spread within the crop probably by the viruliferous apterae.

Close spacing (6" x 6") and late weeding (i. e. postponement of weeding - weeding twice at an interval of 30 days starting from 30 days old crop) were found to be highly effective in reducing aphid infestation, incidence of rosette disease in percentage and in increasing the yield. Closer spacing (6" x 6") gave more yield than wider spacing (12" x 12") though each individual widely spaced plant yielded more than closely spaced ones. A

negative correlation was found between the number of plants per unit area, the percentage incidence of the disease and the aphid infestation. Roguing of rosette diseased plants was found to be effective in reducing the incidence of the disease.

Ekatin 0.1% and Metasystox 0.1% were significantly superior in controlling the incidence of rosette disease and in increasing the yield of groundnuts. There was complete mortality of aphids (*Aphis craccivora*) in Ekatin 0.1% and Metasystox 0.1% sprayed plots. Ekatin 0.1% and Metasystox 0.1% can be sprayed 4 times at an interval of 15 days from 30 days old crop to minimise the incidence of rosette disease, to reduce aphid infestation and to increase the yield.

G. KOUSALYA
R. AYYAVOO
C. S. KRISHNAMURTHY
T. K. KANDASWAMY

Tamil Nadu Agricultural University,
Coimbatore 641003.