

RESEARCH NOTES

CROSS-PROTECTION TESTS CONFIRM THE PRESENCE OF ETCH VIRUS ON TOBACCO IN PUERTO RICO¹

Tobacco-etch virus has recently been discovered in Puerto Rico.² During the course of a survey³ conducted with the purpose of ascertaining the viruses present in our tobacco fields, symptoms resembling those of etch were noticed on tobacco plants inoculated in our laboratory with samples collected in the field. Further inoculations from some of these infected tobaccos reproduced the same symptoms, characterized both by chlorotic mottling and patterns of white lines that appeared as etched on the surface of the affected leaves.

Preliminary inoculation on *Chenopodium album* L.⁴ and *Physalis peruviana* L.⁵ both gave the characteristic necrotic primary lesions caused by etch virus on these hosts. Positive serological reactions were also obtained when extracts from the suspected etch-affected plants were mixed with an antiserum against severe etch virus prepared in our laboratory.

It has been shown by Holmes⁶ that in *P. peruviana* plants the conspicuous necrotic primary lesions and the subsequent systemic necrosis and defoliation of the severe etch strain did not occur as a result of inoculations made with the mild etch strain. The mild etch strain generally induces only a systemic chlorotic mottling disease in *P. peruviana*. Cross-protection tests in *P. peruviana* thus afford a convenient method for identifying the etch virus group. Experiments were therefore undertaken to determine whether the virus under study is etch or not. This note presents the results of the experiment.

Sample 475, which has given severe etch symptoms when inoculated on *P. peruviana*, was selected for study. Young *P. peruviana* plants were dusted with carborundum and inoculated with a mild etch virus strain. In about 6 days the inoculated plants showed vein-clearing, followed by systemic mottling, wrinkling, and deformation of leaves. No chlorotic or necrotic spots were observed. About 2 weeks later, when the plants had

¹ Thanks are expressed to F. O. Holmes, W. H. Greenleaf, and C. W. Anderson for supplying the *P. peruviana*, *C. album*, and the mild etch virus strain, respectively.

² López Matos, L., Evidence for the presence of the tobacco-etch virus in Puerto Rico. To be published soon.

³ Adsuar, J. and Pérez, J. E., To be published soon.

⁴ Greenleaf, W. H., Effects of tobacco-etch virus on pepper (*Capsicum* sp.), *Phytopath.* **43** 564-70, 1953.

⁵ Holmes, F. O., Quantitative measurements of tobacco-etch virus, (Abst.), *Phytopath.* **31** 12, 1941.

⁶ —, Quantitative measurements of a strain tobacco-etch virus, *Phytopath.* **32** 1058-67, 1942.

