

Abstracts of the 1971 Annual Meeting of the Caribbean Division of
The American Phytopathological Society

Golden yellow mosaic of beans (Phaseolus vulgaris) in Puerto Rico. JULIO BIRD, JOSEFINA SANCHEZ, & N. G. VAKILI. (USDA, Mayaguez, Puerto Rico). Golden yellow mosaic virus (GYMV) of beans is spread by whitefly (*Bremisia tabaci* race side). GYMV was transmitted by grafting but not mechanically nor by seed of *Phaseolus lunatus* or *P. vulgaris*. Host range, reciprocal inoculation and cross protection studies, indicated that GYMV and *Rhynchosia* mosaic virus (RMV) are not closely related. Preliminary studies on the retention of GYMV indicated that the virus can be retained in the vector for 6 days. Viruliferous whiteflies were capable of inoculating a low proportion of bean plants if allowed short feeding periods. However, most of the test plants became diseased when viruliferous insects were allowed to feed for 24 hr. Similar results were obtained in the case of the minimum acquisition feeding period. The number of successful inoculations when employing 10, 25, and 50 viruliferous insects per cage (four bean plants per cage) increased with the number of insects employed. No marked differences in transmission efficiency by male and female whiteflies were noted in a series of preliminary trials. GYMV has been detected on beans in the northcentral, northwestern, western, southcentral, and southwestern parts of Puerto Rico. In those areas *P. lathyroides* and *P. lunatus* seem to be the main reservoirs of GYMV.

Symptomatology and cultivar reaction of chrysanthemum to Fusarium wilt. A. W. ENGELHARD & S. S. WOLTZ. (Univ. of Fla., Bradenton). A greenhouse technique was developed to obtain infection of chrysanthemum by *Fusarium oxysporum* f. sp. *chrysanthemi* and *F. oxysporum* f. sp. *tracheiphilum* race 1. Symptoms occurred 6 days after inoculation on a very susceptible cultivar and after 35 days on a more resistant one. Initial symptoms included unilateral chlorosis of one or more leaves at or near the stem apex and slight to pronounced curvature of the chlorotic leaves and the stem toward the affected side of the plant. As the disease progressed, chlorosis of the affected leaves became more general and the entire plant wilted and died. A black necrosis of the stem developed, sometimes occurring only as a streak on one side of the stem. Vascular discoloration developed in the stems; it also occurred in the leaves of some cultivars. Cultivars with severe foliage symptoms were 'Escapade', 'Nob Hill', 'Southern Comfort', 'Torch', 'White Marble', 'Yellow Bonnie Jean', and 'Yellow Delaware'. Cultivars with mild symptoms were 'Bluechip', 'Giant No. 4', 'Indianapolis Yellow', 'Iceberg', and 'Puritan'. Cultivars with no foliage symptoms were 'Dillon', 'Beauregard', 'Stingray', and 'Tinsel'.

Evaluación de la resistencia de la papa a Pseudomonas solanacearum en un fitotrópico. E. R. FRENCH. (N.C. State Univ., Raleigh). Los regímenes de temperatura diurna/nocturna de las regiones paperas frías de los Andes (20/8 C) y templadas de la costa del Perú (28/16 C) fueron simuladas en un fitotrópico. Los períodos más cálidos incluyeron 10 hr de iluminación, la primera fue con luz incandescente y las nueve restantes con luz fluorescente "Cool White", dando un total de 500 Hlx. Se mantuvo la humedad relativa a aproximadamente 80%. Tubérculos de 'Russet Burbank', susceptible, 'North Carolina 59.B5-1 (N.C.)' tolerante (ambos *Solanum tuberosum*), y el híbrido

'Wisconsin 6-5' (*S. tuberosum* × *S. phureja*), resistente, fueron sembrados en macetas de 15 cm de diámetro. Treinta días más tarde las plantas fueron inoculadas agregando al suelo, hiriendo y sin herir las raíces, 40 ml de suspensiones de la cepa peruana PI de *Pseudomonas solanacearum* raza 3 a concentraciones de 1×10^8 y 4×10^8 células/ml. Los índices de enfermedad incrementaron con la mayor susceptibilidad del hospedante, mayor concentración de inóculo, presencia de heridas en las raíces, y mayor temperatura. Las plantas de todos los cultivares desarrollaron síntomas en 22 días a 28/16 C. A 20/8 C Wisconsin 6-5 desarrolló síntomas sólo a la concentración mayor de inóculo y cuando las raíces fueron heridas; Russet Burbank fue susceptible en todos los tratamientos. Los niveles de resistencia probados se apreciaron bien en estos ambientes con la concentración baja de inóculo y sin herir las raíces. La resistencia involucrada parece ser adecuada para climas fríos más no para los climas templados.

Electron microscopy and separation of viruses in Dioscorea floribunda. R. H. LAWSON, S. S. HEARON, F. F. SMITH, & R. P. KAHN. (USDA, ARS, Beltsville, Md.) *Dioscorea floribunda* from Mayaguez, Puerto Rico, showed mosaic and green-banding in leaves when grown in Maryland. Purified samples from diseased plants had 74% of the virus-like particles measuring 395-445 nm. Particles in the 700- to 800-nm size range were not observed. Masses of virus-like particles corresponding to the 395-445 nm particles were observed in thin sections of leaf parenchyma cells and particles in the same size range were detected in leaf dip preparations. Pinwheel inclusions with associated virus-like particles were also present. Leaves of seedlings of *D. composita* inoculated with green peach aphids transferred from naturally infected *D. floribunda* also showed mosaic and green-banding. Pinwheel inclusions were found in parenchyma cells of aphid-inoculated leaves and particles measuring 690-755 nm were present in leaf dip preparations. Particles measuring 395-445 nm were not detected in aphid-inoculated plants. This work indicates that *D. floribunda* is naturally infected with a mixture of two rod-shaped viruses and that these two viruses can be separated by passage through the green peach aphid.

A link between mating type and pathotype in Calonectria (Fusarium) rigidiuscula isolated from Theobroma cacao. D. L. THOMAS & W. C. SNYDER. (Univ. Calif., Berkeley). A study was made of the mating behavior of more than 300 heterothallic *Calonectria (Fusarium) rigidiuscula* clones isolated from various flower cushion diseases of *Theobroma cacao* throughout the world. This study revealed that 89% of all pathogenic green point gall clones were of one mating type, whereas flowery gall clones of both mating types were isolated in equal numbers from most areas. Although the interfertility of clones which cause green point gall and flowery gall, as well as the inheritance of the green point gall-inducing characteristic, have been demonstrated in laboratory tests, it appears that in nature there is a strong link between mating type and the green point gall-inducing characteristic. Further work will indicate whether this phenomenon is of genetic or ecological origin.

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