
Se recolectaron muestras de frijol comercial de grano rojo o negro en once localidades productoras de Costa Rica. Se determinó la calidad y la sanidad de las semillas. Esta última se evaluó por el método de papel filtro con 2,4-D, después de sete días de incubación a 25°C y periodos alternos de luz y oscuridad. Los hongos más frecuentes fueron: Aspergillus spp. (19.5%), Penicillium sp. (33.5%), Fusarium spp. (18.9%), Cladosporium sp. (20.4%), Rhytotorula solani (23.3%), Alternaria solani (23.0%), Macrophomina phaseolina (18.9%) y otros hongos en menos de 10% infección total. En general las variedades de grano negro presentaron menor porcentaje de infección. En cuanto a localidades, las muestras provenientes de zonas de influencia Atlántica, fueron las que presentaron mayor complexidad en la población de patógenos. Los patógenos más importantes se presentaron en muestras provenientes de Atenas, Palaquem, Puriscal, Turrialba, Los Chiles y la Península.


Weed species from Puerto Rico were analyzed for whitefly-transmitted (WFT) gemmiviruses by hybridization with non-radioactive DNA probes of cloned WFT gemmiviruses. Plant sap was denatured, neutralized, and added as dots (3µl) to nylon membranes. Clones were sulfonated, and hybridization was carried out at 42°C. Results were determined visually, based on the intensity of insoluble reaction products relative to internal controls. Positive reactions were observed with Euphorbia heterophylla using A-component probes to squash leaf curl, been golden mosaic and tomato golden mosaic (TGMV) viruses. Malvastrum corneholmianum and Sida acuta samples reacted only to the TGMV probe. The cacao de toxad virus probe hybridized to M. corneholmianum, S. acuta, and Triumfetta semiciliata samples. No reaction was observed in any species using African cassava mosaic virus probes. WFT gemmiviruses were not detected in Poeciastrum coccinea or Macrophomina phaseolina.

EVALUACION DE SOIL AMENDMENTS FOR CONTROL OF SCLEROTIUM ROLFSII. Graciela Canullo and R. Rodriguez-Kabana, Department of Plant Pathology, Auburn University, Auburn, Alabama 36849.

Three amine compounds were selected from preliminary screenings as soil amendments for control of Sclerotium rolfsii. The amendments were evaluated under greenhouse conditions at dosages of 0.05, 0.1, 0.2, 0.3, 0.4, and 0.5 g/kg of soil using lentil (Lens culinaris) as a host plant. Increasing dosages of the amendments improved emergence and seedling survival, but induced phytotoxicity at rates >0.3 g/kg of soil. Pathogen growth and survival was effectively reduced at dosages of 0.2-0.3 g/kg soil. Soil urease activity increased in response to the application of two of the amendments. In vitro testing for direct toxicity of the compounds on the pathogen revealed that the compounds reduced mycelial radial growth, but were not fungicidal.

ISOLATION AND CHARACTERIZATION OF DNA CLONES SPECIFIC FOR RACE 3 OF PSEUDOMONAS SOLANACEARUM. Douglas Cook and Luis Segura. University of Wisconsin-Madison, Department of Plant Pathology, Madison, WI 53706.

The use of DNA probes to assess restriction fragment length polymorphisms (RFLP) within Pseudomonas solanacearum has provided new insight into the taxonomic and evolutionary relationships among members of this species. Results suggest that geographical isolation played a significant role in the evolution of the species. For example, the narrow host range race 3 which probably originated in the Andean region of South America has the unique ability to cause disease on potatoes in cool climates. By subtractive DNA hybridization, we have isolated a DNA clone with homology to race 3 strains, but not to other members of the species. Subsequent analysis has revealed that this race specific region includes at least 21 kb of DNA. Hybridization experiments with the probe are potentially useful as a simple and rapid means for identifying race 3 strains.

EFFECT OF CALCIUM SILICATE SLAG AND FUNGICIDES ON BROWN SPOT DEVELOPMENT, YIELD, AND YIELD COMPONENTS OF RICE. L. E. Dayoff, G. H. Snyder, and D. B. Jones. University of Florida-IFAEC, P. O. Box 8003, Belle Glade, FL 33430-8003.

Severity of brown spot of rice, caused by Bipolaris oryzae, is usually intense on Histosol-grown rice in Florida. Development of brown spot and the effects on yield and yield components of rice were studied in a 2 x 4 factorial experiment that included six replications. Factors were plots treated alone or in combination with calcium silicate slag (slag) at 10 Mg/ha, Benlate at 1.69 kg/ha, and Tilt at 0.44 L/ha. There was a significant (P<0.05) slag*fungicide interaction for area under disease progress curve (AUDPC), grain number per panicle, and seed weight. Non-treated plots exhibited yield reductions of 16%, 39.3%, and 43.8% when compared to plots treated with Tilt alone, slag alone, and a combination of Tilt and slag, respectively. Results indicate Tilt alone reduced AUDPC and increased yield and yield components over the non-treated control. However, effects due to slag alone were much greater, providing a potential non-chemical control method for managing this disease.
SEPARATION OF DNA OF PLANT PATHOGENIC MYCOPLASMA-LIKE ORGANISMS (MLO) BY FIELD-INVERSION GEL ELECTROPHORESIS. Michael J. Davis and Meghan Zonal. University of Florida, IFAS, 1900 S W 28th Street, Gainesville, FL 32611.

The mycelium reduced (MRE) MLO and Spiroplasma kunkellii were extracted from infected wheat tissue. The DNA was separated by field-inversion gel electrophoresis and stained with ethidium bromide. The resulting bands were visualized under UV light.

DETECTION OF TOMATO SPOTTED WILTED VIRUS IN ORNAMENTAL AND VEGETABLE CROPS. V. Deherrera, R.P. Davis and L.A. Gonzales Magda, Inc. 30190 Country Road 6, Elkhart, Indiana 46514, USA.

Tomato Spotted Wilt Virus (TSWV) causes a variety of symptoms in tomatoes, from mild ring spots to lethal necrosis, within a wide range of ornamental and vegetable crops. At our laboratory, two antisera, based on the Trichilemon virus (TSV) are being utilized in DAS-ELISA to detect TSWV in economically important ornamental and vegetable crops. Our data show that TSV-1 is more likely to be detected in ornamentals, and TSV-L in vegetables. However, neither isolate is exclusive to ornamentals or vegetables, and both antisera should be used for screening and diagnosis.

PRODUCTIVIDAD DE VARIEDADES DE CAÑA DE AÇUCAR EN EL VALLE DE LA HUASTECA, MEXICO. J.L. Rodríguez and C. Almás. Deptos. de Protección de Cultivos, Agronomía, Suelos e Ingeniería Agrícola, Estación Experimental Agrícola, Universidad de Puerto Rico, Mayaguez, P. R. 00709.

In the Estación Experimental Agrícola, on a region with a similar climate, a study was conducted to evaluate the productivity of sugarcane. The results showed that the productivity of sugarcane was directly related to the temperature and humidity of the region. The best varieties were able to maintain their productivity during the three cycles of cultivation.

ALTERNARIA LEAF SPOT AND BLIGHT (ALTERNARIA EUPHORIBICOLLA) AND SCAB (SPHACELUM POINSETTII), TWO TROPICAL DISEASES OF POINSETTIA. A. M. Engelhardt, C.C.P.R., Univ. of Fla., IFAS, 5007 60th St. East, Bradenton, FL 34203.

Alternaria leaf spot and blight cause lesions on leaves, stems, and roots. Lesions can be up to 2.5 cm in diameter. The disease is most common in tropical regions. Lesions are tan to brown, with a black center. In severe cases, the entire plant can be killed. The disease is controlled by the use of fungicides.


Xanthomonas strains within the genus Xanthomonas reveal a clonal population structure. We hypothesize that the XRF groups are formed because of highly selected, host-specific virulence (hsv) genes (unique to the species or pathovar) superimposed on general virulence (vr) and/or hsp genes. To determine the relationship between hsv and vr, we obtained Tn5 mutation approaches with X. campestris pv. citrulli (leaf spot of citrus & common bean) and Xc pv. translucens (bald of wheat, oats, barley, rye, triticale) affecting all hosts generally (vr) and affecting one or more hosts, but not all (HSV). DNA fragments that complement both Vr (including hsv-homologous fragments) and Hsv mutations were detected. One DNA fragment from X. campestris appears essential for the canker phenotype; interestingly, transconjugants of several different pathovars of X. campestris carrying this clone induced cankers on citrus. Preliminary hybridization data indicate that some hsv genes may serve as species-, pathovar-, or disease-specific DNA probes for detection and identification purposes.

A SIMPLE METHOD TO DETERMINE CAPTAFOL RESIDUES IN WHEAT PLANTS (TRITICUM AESTIVUM L.) AND SOIL SAMPLES BY GAS CHROMATOGRAPHY. Garcia G., J.E. Instituto Fuer Phytopathology, Universidad Hohenheim, Stuttgart 70, West Germany. Current address: Universidad Estatal a Distancia (U.2A)/Universidad de Costa Rica (SEP), 2050 San Jose, Costa Rica.

The extraction of captanol residues from plants is important for determining the risk of residues on crops. In this study, the captanol residues were extracted from wheat plants using a simple method. The captanol residues were then analyzed using gas chromatography.


Bacteria isolated from bean blossoms collected in western Nebraska were screened in vitro against Scerotinum scerotiorum. Two strains, identified by substrate utilization and fatty acid profiles as Erwinia herbicola and Bacillus polymyxos, inhibited mycelial growth on nutrient media. Culture filtrates from B. polymyxos also inhibited conidial germination. Tests in vitro and in vivo indicated that pre-treatment of bean blossoms with these bacteria significantly increased germination of stems and pods of bean plants. The potential of B. polymyxos and E. herbicola to control S. scerotiorum in the field is being investigated.

PROTECTION OF BEAN PODS AGAINST ANTHOCYANOSIS BY INDED RESISTANCE. Biceya Marcial, Alejandro Gonzalez and Edo Soriano, Instituto de Investigaciones Quimico Biologicas, UNAM, A.P. 30-30-E, Mexico.

Localized as well as systemic resistance was induced in bean (Phaseolus vulgaris cv. Flor de mayo) plants. Localized resistance was associated with phytoalexin formation after inoculation with Phytophthora boeremiensis, a non-pathogenic fungus of bean. Phasedol levels were determined in 7-day-old plants and challenge infection was carried out with the mycelium of Colletotrichum lindemethianum. P. boeremiensis acted as a phytotoxic agent producing phytoalexins. Bacterial infection increased after inoculation with P. boeremiensis, and localized resistance was observed at 24h- incubation increasing with time to up to 80% protection at 96h when all control plants had collapsed. Systemic protection of bean pods after two boosting treatments was also achieved.


A fines de 1989 se observó una marchitez bacteriana severa en habichuelas en varias localidades de Costa Rica. Los mismos fueron causados por bacterias de la familia Enterobacteriaceae. Se han aislado varios géneros como Xanthomonas, Pseudomonas y Enterobacter.
La patogenicidad de lasinlos del tomate y hibiscúlilo fue evaluada en invernadero mediante inyección en la segunda axila superior, colocando luego una gota de suspensión bacteriana a 10^6 UFC/μl. Las islas no infectadas con los microorganismos en tres cultivos de hibiscus (‘Strike’, ‘Provider’, ‘Extended’) y también en tomate (cv. ‘Tropic’). Mielicamente se inocularon cinco cultivos con frutilla (‘Lea-Pijan’, ‘Bancroft’, ‘Talamanca’, ‘Mexico 86’, y ‘Negro Huasteco’), encontrándose que los mismos eran intolentes a la bacteria. Al contrario de lo que se había observado, no se observó una respuesta de hipersensibilidad en la zona de inoculación.

Black spot disease of pineapple, L. J. Liu and J. Garcia-Tudurí, Agricultural Experiment Station, University of Puerto Rico, Rio Piedras, P. R. 00928

Black spot disease, an internal fruit discoloration, has affected considerably the quality of pineapple fruit PR-1, 17, a local variety which can sustain a profitable industry. The causal agent of the disease has been isolated and identified as Penicillium erysipellatum. Heavier fruits seem to have a higher number of spots. The majority of the spots occurred in the upper portion of the fruits, i.e., the area below the crown. A pH range from 3 to 7 favors mycelial growth of the fungus, but at pH 9, growth is drastically inhibited. The number and size of black spots per fruit increase significantly when pineapple is subjected to temperatures higher than 40°C. Black spot per fruit was significantly reduced when PR-1, 17 was sprayed with benomyl at 2 lbs per 100 gal. of water, bensulidesin at 16 oz per 100 gal. of water, and carbendazim at 2 lbs per 100 gal. of water.


Plantain decline, a drastic reduction in yield in raccoon crop, is a serious problem for growers in Puerto Rico. Composite soil and root samples were collected before planting and at 3-6 month intervals after planting from plots of 4 replicates of field experiments to determine nematodes and fungi which might contribute to the decline. Results obtained indicate that Radopholus similis, Pratylenchus sp., and Fusarium oxysporum, which had not been found in the previous year were isolated in low population from roots and pseudostems one year after planting. A total of 4 treatments were included in the study. Results obtained from the plant crop harvested recently indicate that application of nematocide at 95 g/plant/year, every 3 months significantly increased number of fruit at 68% level over the untreated control. Planting distance 6’ x 6’ seems to have a higher yield than that of 6’ x 6’ in all treatments.

MOLLUSC DISEASES IN THE TROPICS. Karl Karamoschork, Rutgers University, New Brunswick, NJ 08903

Many of the 300 known plant mollusc diseases affect tropical crops. Gene cloning and hybridization has provided sensitive probes for assaying MLO diseases. Losses to the tropics range from barely perceptible to catastrophic, depending on the crop, susceptibility, vector population, competiveness and other factors, some of which may be manipulated to provide a combination of control. Mollusc treatment has been costly and disappointing. Heat treatment, chemical and virus surgery and screen techniques have been used but in a few instances. Breeding for resistance to mollusc is the current control choice. Cross-tolerance might be improved for selected control. New strategies will employ biotechnology to control vectors and to induce plant resistance.


Passionfruit production in Puerto Rico is reduced severely by a virus disease. The causal virus, tentatively identified as Puerto Rican passionfruit virus (PRPV), was transmitted mechanically and by four aphid species to several herbaceous hosts. PRPV was designated a potato virus by its occurrence in cytoplasmic inclusion bodies, particle length and serological reactivity. It was distinguished from both potato virus X and mottle viruses from Taiwan (Bird, et al., in Press). New data on host reactions (inheritance of resistance in beans), serological reactivity and the capsid protein (Mr=32,000) indicate that PRPV may be an isolate of watermelon mosaic virus 2 (WMV-2). Comparisons are in progress with isolates of WMV-2 and viruses of Passiflora occurring in Australia.


Double-stranded (ds) RNAs (replicative forms) of citrus tristeza virus (CTV) were purified by phenol extraction, LiCl fractionation and CaCl2-cellulose chromatography. The ds RNA products were evaluated by polyacrylamide gel electrophoresis (PAGE) and fractionated by agarose gel electrophoresis. Individual or unfractionated ds RNAs were denatured in 2.5 mM methylmercuric hydroxide and translated in the wheat germ in vitro translation system. Translation products were analyzed by PAGE after reaction with CTV antisem. A single product migrating at 25-28 kilodaltons was immuno precipitation following translation of a 2.1 kilobase ds RNA, but not from larger or unfractionated ds RNAs. Therefore a copy of the CTV coat protein gene is encoded on the 2.1 kilobase ds RNA.


A survey was made in Puerto Rico for cucumber mosaic virus (CMV) infecting bananas, plantains and associated weeds. CMV was detected by ELISA and classified to serotype with CMV-Cr and CMV-Vi antibodies (AGDI, Elkhart, IN 46514). CMV was detected in symptomatic leaves of commercially grown bananas and plantains in Commelina diffusa (a weed common to under bananas in plantains), in Musa velutina (an ornamental banana). Field incidence of CMV was always associated with infected Commelina. At least two CMV serotypes were found in bananas and plantains in Puerto Rico, with CMV-Vi most prevalent. A banana sample from Costa Rica contained the CMV-Cr serotype. In western blot analysis the capsid protein of both serotypes migrated at Mr=24,000.

EFFECT OF INCUBATION OF THREE ISOLATES OF Phytophthora palmivora ON CACAO CULTIVARS. W. Phillips and J.J. Galindo, CATIE, Turrialba, Costa Rica.

At Turrialba (602 msl., 22°, 2900 m rainfall) were tested isolates (1) 994, 188 and 4080 of P. palmivora on 22 cacao cultivars. Five-month-old pots inoculated with a suspension 150,000 zoospores/ml adsorbed on 0.2 cm diameter paper filter disks, which were placed on two opposite sites at the middle of the pot. Fruits were covered with plastic bags containing wet paper towels, which were removed from the bags 24 hr after inoculation. Twelve cultivars were resistant to 1-064 (zone of lesions 21 cm) and 8 were moderately resistant to TRH-1 [1 cm]. Incidence was 99% and the interaction in severity between isolate x cultivar was highly significant. Cultivars resistant to 1-064 were L-106 and 1-060, Cultivars TRH-188 and 1-060 were susceptible to TRH-188 and 1-060. The interaction between isolate x cultivar was highly significant. Cultivars resistant to 1-064 were TRH-188 and 1-060, Cultivars to TRH-188 were moderately susceptible to 1-064 and TRH-188 and 1-060. The interaction between isolate x cultivar was highly significant. Cultivars resistant to 1-064 were TRH-188 and 1-060, Cultivars to TRH-188 were moderately susceptible to 1-064 and TRH-188 and 1-060. The interaction between isolate x cultivar was highly significant.
SPECIES OF PYTHIUM AS PATHOGENS OF PERENNIAL, WOODY FRUIT CROPS IN SOUTH FLORIDA, R.C. Plotka, University of Florida, IFAS, TREC, 18905 SW 280th Street, Homestead 33031.

Several important woody fruit crops in South Florida, including avocado (Persea americana L.), guayaba (Averrhoa carambola L.), and maney sapote (Calocarpum sapote), succumb periodically to declines which are associated with flooding or over-watering. Trees may have sparse canopies and may wilt and defoliate suddenly; cortical tissue and first- and second-order roots of affected plants are invariably necrotic. Isolations from the above crops on media which are selective for pythiaceous fungi have not yielded species of Phytophthora, but Pythium splendens and a nonidentified species of Phytophthora have been frequently recovered. In preliminary greenhouse studies, seedling mortality, fruit rot, and root rots were recorded, and root rot and canopy decline was recovered from symptomatic tissue. However, only isolates of P. splendens consistently reproduced the above disease syndrome. Increases in root necrosis and reductions in root and shoot biomass were observed in inoculated, but not in noninoculated plants, which were flooded for one week.

YIELD LOSS INCITED BY PUCINIA MELANCEPHALIA ON A HIGHLY SUSCEPTIBLE SUGARCANE CULTIVAR IN FLORIDA. R. N. Ralston, D. L. Anderson and F. J. Olof. Univ. of Florida, IFAS, Everglades Research and Education Center, Belle Glade, FL 33430.

Comparisons of historical data indicate yield potentials of cultivars CP72-1210 and CP78-1247 are nearly equal in the absence of sugarcane rust. CP78-1247 demonstrated a significant increase in rust susceptibility during the spring of 1988. Mean rust severities from 5 sites located throughout the Everglades Agricultural Area (EAA) Spring 1988 data were 51 and 13 for CP78-1247 and CP72-1210, respectively. During Fall 1988, yield data was collected from 13 EAA locations at which these cultivars were planted in the same or adjacent field. Canopy cover of total sugar per unit area were 40.3 and 39.3% lower for CP78-1247 than for CP72-1210, respectively. The severe reaction of CP78-1247 to rust has effectively halted the expansion of the cultivar, with a considerable amount of the CP78-1247 plant cane acreage being removed from production after only 1 harvest.


Calcium silicate slag has been demonstrated to reduce foliar disease severities and to increase yield of Histsol-grown rice in Florida. Sugarcane rust severity was assessed on five cane cultivars grown with and without slag (6-7 t/ha) in a replicated field test in the Everglades Agricultural Area. Disease severity and yield were both significantly influenced (P<0.001) by cultivar differences. Rust severity was not influenced by slag amendments (0-20), whereas rust severity on 4 of 5 cultivars was significantly reduced. Canopy cover and sugarcane yield per unit area were significantly increased by slag application, with increases in sugar yields ranging from 12 to 28%. Significant cultivar x silicate slag interactions were not detected. Results suggest that yield responses of sugarcane to slag amendments may be attributable to reasons other than increased resistance to sugarcane rust.

CULTURAL CHARACTERISTICS AND PATHOGENICITY OF FUSARIUM OXYSPORE ISOLATED FROM GUINEA YAMS, DIOSCOREA ROTUNDATA, IN PUERTO RICO. D. Ramos, J. Mignucci and A. González. Agricultural Experiment Station, 310 S. Box 21360, Rio Piedras, PR 00982.

Fusarium oxysporum causes wilt, basal canker and root rot disease of guinea yam, Dioscorea rotundata, in Puerto Rico. Three isolates of F. oxysporum were isolated from stem, root and root of guinea yam. These isolates were differentiated based on pigmentation and colony characteristics when grown on PDA. When field plants were inoculated, the damages caused by the three isolates appeared to be related to their origin. The vascular isolate causes greatest damage in the stem vascular system, the root isolate in the roots and the basal isolate on the base of the plants. This suggest that the three isolates of F. oxysporum might be distinct strains differing in colony vigor, pigmentation, and their preference for the particular tissues. Currently the basal isolate is the one that has caused the most damage on yams grown at the Corozal Substation.

COFFEE LEAF RUST IN PUERTO RICO. R. F. Rodríguez and M. Monroy, Phytopathologist and Specialist in Coffee, Dept. of Crop Protection and Horticulture, Agricultural Experiment Station and Agricultural Extension Service, Mayagüez, Puerto Rico.

Since February 1989, coffee leaf rust (Hemileia vastatrix) was detected in Puerto Rico. The disease was first observed in two private farms at the municipalities of Las Marías and Mayagüez. Three months later, 105 locations in 10 different localizations, including a year after location, were made. Coffee leaf rust is established on the region of the Island. Size of foci and severity of the attack vary among regions and within the farm. Attacks by H. vastatrix are in coffee arabica, C. canephora, and C. liberica. Thus far, race 10 is the only race reported to be present in the island. Control of the disease is based on foliar applications of atrazine and copper hydroxide. Time for first sprays is based on the rainfall pattern. Recommendations for old plantations include severe pruning followed by protection of new growth with fungicides.

In vitro propagation of disease-free bromelia, poinsettia and dracaena, R. I. Marín, R. V. Martínez, C. S. Arce and L. J. Liu, Department of Crop Protection, Agricultural Experiment Station, University of Puerto Rico, Rio Piedras, Puerto Rico 00928.

The ornamental plant industry has become increasingly important in Puerto Rico. Major factors limiting production and expansion of bromeliaceae, poinsettia and dracaena are leaf blight, nematodes and insects. Some 3,682 plantlets of bromeliaceae, poinsettia and dracaena were propagated in vitro employing a modified Murashige and Skoog medium (MS). Both bromeliaceae and poinsettia required small amounts of hormones for regeneration and growth while dracaena required moderate amounts. One half strength of MS promoted rooting of poinsettia and Kinetin at 4 mg/l in the modified MS medium stimulated shoot differentiation. MS + Kinetin + cormos was 15% successful. Promoted callus and shoot differentiation in dracaena and MS + 1 mg/l NAA promoted root formation.

AVANCES EN LA IDENTIFICACION DE LA MICROFLORA EN SEEDILAS DE HABICHUELA (Phaseolus vulgaris L.) DE LA REPUBLICA DOMINICANA. Albiana Sánchez, P. R. Hef Pepper, R. Escávquez-Nadel y J. S. River. Depto. de Proteccion de Cultivos, TANG (RAS-UNAM), Depto. de Agronomía y Suelos, Universidad de Puerto Rico, Mayagüez, P.R. 00708.

La semilla de habichuela utilizada para la siembra en la República Dominicana (RD) es de mala calidad debido a impurezas y patógenos, algunos de los cuales son transmisibles por semillas. Se realizó un estudio en los laboratorios de Fitopatología del CENIC (Centro de Negocios de la Estación Federal de VIVANDOS) (USA) con el fin de identificar y caracterizar los hongos presentes en las semillas procedente de la RD. Se utilizaron muestras de la Secretaría de Estado de Agricultura y de una compañía productora de semillas de este país. Se usó papel celuloso y placas petri con agar, papa y dextrosa. En ambos métodos se determinó el porcentaje de germinación y se identificaron los hongos siguientes; Ampelosporus niger, A. sydowii, A. flavus, A. ustus, A. cladosporium sp., Nigrospora sp., Niphusporus sp., Pencillium sp. y Macrophomina phaseolina.

RIPIDIOLOGICAL STUDIES OF BLACK SIGATOKA ON PLANTAINS IN COSTA RICA. A.C. Tapia, J.J. Galindo y J.V. Recalant. CATIE, Turrialba, Costa Rica.

At "La Lola" (40 n, 26.5°C, 3,700 mm annual rainfall) Prov. de Limón was studied the development of black Sigatoka caused by Mycosporinella fijiensis on the cv False Horn' (ABB). Parameters evaluated were: periods of incubation (IP) and evolution of symptoms (EP); leaf emergence (LE), youngest leaf spotted (TSL), youngest leaf necrosed (YN); number of leaves affected (LA), leaf perithecia/mm and yield. Incubation varied between 11-17 days, EP between 25-35 days and YN between leaves 4-9, being all of them affected by rainfall and minimum temperature. The interaction among EP, YN, LA and LA with the climatic factors mentioned were the main indicators for disease management.
CONTROL DEL NEUTATO NODULADOR (HELOIDOGNYTE SPP.) MEDIANTE EL USO DE LA BACTERIA PARASITICA PASTEURIA PENETRANS (THORNE) SAVER Y STARR.

Roberto Vargas y Nelia Acevedo, Asistente de Investigaciones y Manejo, Experiencia con la Frecuencia de Cultivos, Recinto de Mayagüez, Mayagüez, P.R. 00708

Se establecieron ensayos de invernadero en el Recinto Universitario de Mayagüez para estudiar el potencial de la bacteria P. penetrans (población A de Australia) como biocentrador del nemético nodulador Heloidogyne inaequalis en plantas de tomate. Los resultados revelaron que plantas infectadas por el nemético e inoculadas con la bacteria presentaron un índice de nodulación significativamente menor y un menor número de larvas y huevos de Heloidogyne spp., que aquellas plantas infectadas solo con el nemático. Se observó además una reducción en la movilidad de larvas con siete o más esporas adheridas.


A potyvirus (VSV) of V. subterraneum (Li et al., Phytopathology 80:436) was identified as peanut mottle virus (PMoV). In SDS immunodiffusion tests, homologous precipitin lines of VSV fused without spur formation with heterologous lines of PMoV. In reciprocal DAS-ELISA tests, APM values for homologous and heterologous antigens were similar, regardless whether VSV or PMoV antiserum was used. "Potyvirus group" monoclonal antiserum (Agdia Inc., Elkhart, IN 46514) did not react positively in 1-ELISA tests were detected during the interaction of the tepary bean, Phaseolus acutifolius with Xanthomonas campestris pv. phaseoli (Xcp), Pseudomonas syringae pv. savastanoi y Escherichia coli using polyacrylamide gel electrophoresis. Polypeptide differences were also found in the common bean inoculated with Xcp strains differing in the ability to produce indole-3-acetic acid.

A SEED-BORNE POTYVIRUS OF VOANDZUELA SUBTERRANEUM IDENTIFIED AS A STRAIN OF PEANUT MOTTLE VIRUS. F.W. Zettler, R.H. Li and M.S. Elliott. Plant Pathology Department, University of Florida, Gainesville 32611.

A virus infecting V. subterraneum (VSV) (Li et al., 1990, Phytopathology 80:436) was similar to peanut mottle virus (PMoV) in serological tests and host-range studies. In SDS immunodiffusion tests, homologous precipitin lines of VSV fused without spur formation with precipitin lines of PMoV. In reciprocal DAS-ELISA tests, APM values for homologous and heterologous antigens were similar, regardless whether VSV or PMoV antiserum was used. VSV systemically infected 3 Arachis hypogaea, 7 Phaseolus vulgaris (bean) and 8 Psammomys burtoni cultivars. VSV induced local lesions (0.5-0.5 mm) in 'Topcrop' bean like those described for M-2 strain of PMoV.