2021 Caribbean Division Meeting Abstracts

Abstracts presented at the APS Caribbean Division meeting held virtually, September 22–23, 2021. The recommended format for citing division meeting abstracts, using the first abstract below as an example, is as follows:

Carlini, R. B., Andrada, N. R., Micca Ramirez, M. V., and Riglos, M. 2022. Relationship in severity of *Puccinia sorghi*, climatological and ecophysiological variables of corn in the semiarid of San Luis, Argentina. (Abstr.) Phytopathology 112:S1.1. https://doi.org/10.1094/PHYTO-112-3-S1.1

The abstracts are published as a supplement to *Phytopathology* for citation purposes. They were not reviewed by the *Phytopathology* Editorial Board and were not edited by the APS editorial staff.

https://doi.org/10.1094/PHYTO-112-3-S1.1

Relationship in severity of *Puccinia sorghi*, climatological and ecophysiological variables of corn in the semiarid of San Luis, Argentina

R. B. Carlini (1), N. R. ANDRADA (1), M. V. Micca Ramirez (1), M. Riglos (2)
(1) FICA-UNSL, San Luis, Argentina; (2) AER INTA Guatraché, La Pampa, Argentina

In the semi-arid region, the critical period (CP) of late corn is located in times with less evapotranspiration and greater availability of water in the soil, and the filling period of grain at times of low temperature (T) and solar radiation. This promotes poor assimilation that affects grain size, even more so with foliar diseases. To evaluate this relationship, in Villa Mercedes from 2017 to 2019, in random blocks of 3 repetitions, 5 treatments were established with different chemical management. The following were evaluated in VE, V13-15, R1, R2, and R6: pustule number (PN), T, relative humidity (RH), precipitations (PP), grain number and weight (NG-WG), total shoot biomass (B), harvest index (HI), yield (Y), radiation use efficiency (RUE) and the variables were correlated using the R software. The environmental conditions explained the variability in intensity between years. PN peaks correlated with high HR peaks from 2 days before. The PN ranged between 219.9 in 2019 and 2.6 in 2017. The average T and RH were 20ºC and 70%. The Y values ranged from 1044 to 96.3 g/m^2 and those for B between 2941.22 to 790 g DM/m^2 in the three years. PN was correlated with BP and CR. The HI ranged from 0.6 to 0.1, NG from 3348.48 to 887.04 g/m^2, RUE 6.4 to 2.02 g/MJ. and WG from 513.3 to 119.18 mg correlated with PN. The results obtained, approached as an integral part of the epidemiological system of corn, are contributions to future impact studies for the production of the crop.

***Nakatea oryzae-Sclerotium oryzae* in the rachis of rice panicles in Entre Ríos, Argentina**

M. ASSELBORN (1), M. V. Pedraza (1)
(1) EEA INTA C. del Uruguay, Entre Ríos, Argentina

Rice stem rot (*Sclerotium oryzae*) is the most frequent rice crop disease in Argentina, affecting lower leaf sheaths and stems. In Entre Ríos, Argentina, plants of a rice breeding line at physiological maturity, with panicle rachis necrosis, black lesions with irregular shape in flag leaf sheaths, leaves with chlorotic margins, and water-soaked blades were observed. Typical stem and sheath lesions at the waterline were detected and panicle grains appeared well-filled. Numerous black and globose sclerotia, 290-322 µm in diameter, black mycelium and three septate conidia slightly curved, 11.6 × 31.2 µm in size, with apical cell larger and less pointed than the basal cell, were observed in the rachis. Pathogen isolations from rachis, leaf sheaths, and stems were performed. Colonies of pure cultures on rice bran agar were initially white and turned dark gray 3 weeks later. The hyphal width ranged from 4.5 to 6.2 µm. Numerous small and globose sclerotia were observed on the surface of colonies 3 days after subculturing. The sclerotia were white at first and then turned black over time and ranged from 0.31 to 0.54 µm in diameter (average 0.41 µm, n = 50). Based on these characteristics, the pathogen was preliminarily identified as *Nakatea oryzae* (conidial state) and *S. oryzae* (sclerotial state). Koch's postulates and molecular analysis are being performed. To our knowledge, this is the first report of *N. oryzae-S. oryzae* affecting the main rice panicle rachis in Argentina.

Incidence of mal de Rio Cuarto disease and vector infectivity in localities of the endemic and surrounding area, 2020/21

A. K. Torrico (1,2), A. Ruiz Posse (1,2), A. D. Dumón (1), M. F. Mattio (1,2), A. Corro Molas (3), M. Genero (4), N. Franz (5), D. Denegri (5), H. Donadio (6), W. Guillot Giraudo (7), A. Figueruelo (7), R. Moschini (8), A. Salomón (9), A. Canale (9), M. P GIMÉNEZ (1,2)
(1) UFYMA INTA CONICET, Córdoba, Argentina; (2) IPAVE INTA, Córdoba, Argentina; (3) EEA INTA Gral. Pico, La Pampa, Argentina; (4) AER INTA Huinca Renancó, Córdoba, Argentina; (5) AER INTA Cnel. Moldes, Córdoba, Argentina; (6) AER INTA Adelia María, Córdoba, Argentina; (7) EEA INTA Anguil, La Pampa, Argentina; (8) ICA-INTA, Córdoba, Argentina; (9) AER INTA Río Cuarto, Córdoba, Argentina

The incidence of Rio Cuarto disease in oats and wild grasses, as well as the rate of infected vectors, are useful epidemiological parameters for characterizing the virosis. Fields of oats from the endemic area (Holmberg, San Ambrosio, Chaján, Adelia María, and Huinca Renancó) and from La Pampa were sampled and analyzed by serology. Weeds (Aleppo grass, *Cynodon sp.* and *Bromus sp.*), fields of maize in production or in trials of cultivars (cv.), and non-virus transmitting carrier insects were also analyzed. All the batches of oats tested positive for the virus, with incidences of between 3 and 50%. Aleppo was positive in Adelia María (4%), while *C. dactylon* and *B. unioloides* from Huinca Renancó, Adelia María and La Pampa were negative. A susceptible batch of maize in La Pampa had a 57% incidence; early trials of cv. in the endemic area recorded an average of 55% (30 to 83.3%), and late trials, 5% (0–10%), corroborating the importance of the date of planting. La Pampa and Holmberg had high rates of infected insects (30 and 25%) while Adelia María and Huinca Renancó recorded 19 and 10%, respectively; in all cases about half were infective. The results are in addition to those of the validation of the disease prognosis system.

Evaluation of *Trichoderma harzianum* ITEM 3636 as a potential endophyte and biocontrol agent against late leaf spot in peanut

D. F. GIORDANO (1), L. F. M. Rouws (2), K. M. Freitas (2), J. Erazo (1), N. Pastor (1), I. Del Canto (1), I. S. Coelho (3), C. Oddino (1), A. Torres (1)
(1) IMICO, UNRC, Córdoba, Argentina; (2) EMBRAPA Agrobiologia, Brazil; (3) UFRRJ, Rio de Janeiro, Brazil

Peanut late leaf spot, caused by *Nothopassalora personata*, is a disease that causes high yield losses in Argentina. Its management is mainly based on chemical fungicides, and there is frequently a low control efficiency with some of the active ingredients used. *Trichoderma harzianum* ITEM 3636 is efficient in the control of soil-borne pathogens. If this strain would have endophytic capacity and trigger plant systemic resistance, it could decrease the disease intensity on leaves. To confirm this hypothesis, peanut seeds were treated with *T. harzianum* ITEM 3636 and sown under sterile conditions. After seven days, seedlings were processed, and their roots were stained for observation under a confocal microscope. Additionally, a greenhouse assay was carried out with inoculated and no inoculated seeds. Plants were inoculated at 130 days after sowing with an *N. personata* and disease intensity was recorded. Images taken under the microscope showed that *T. harzianum* ITEM 3636 was able to grow inside peanut roots, and the seed application under controlled conditions caused a significant decrease in late leaf spot intensity (more than 20% reduction in the number of infected leaflets and disease incidence). These results suggest that strain ITEM 3636 could constitute a useful tool for biological control of peanut late leaf spot. Further studies are being carried out to elucidate the specific mechanisms involved in the capacity of the strain to induce plant resistance.

Identification of a Type III Effector as a putative avirulence gene in Eucalyptus pathogenic *Xanthomonas* strains

A. M. GOCHEZ (1), S. Timilsina (2), C. C. Lezcano (1), F. Hermosis (1), J. Soliz (1), F. Caniza (1), J. B. Jones (2), B. I. Canteros (1)
(1) EEA INTA Bella Vista, Bella Vista, Corrientes, Argentina; (2) Department of Plant Pathology, University of Florida, Gainesville, FL, USA

The growth of Eucalyptus clonal forestry in the province of Corrientes allowed the identification of symptoms of leaf spots and apical blight caused by species of *Xanthomonas campestris* pv *eucalyptii* (Xce). This bacterial phytopathogen particularly affects susceptible Eucaliptus clones, like pure *E. grandis* or hybrids with *E. camaldulensis*, *tereticornis*, *dunnii* and *urophylla*. Interestingly, it was observed that Xce isolates caused a hypersensitivity reaction (HR) in grapefruit (*Citrus paradisi*). Population growth and comparative electrolyte leakage were performed between Xce and *X. fuscans* pv. *aurantifolii* type C (XfaC) which cause HR in grapefruit, as a positive control, and *X. citri* type A (XcA) as a negative control. We confirm that Xce induces a fast HR, even more rapidly than HR caused by XfaC. After sequencing the genome of one of the Xce strains isolated in Corrientes, the presence of fragments of a putative avirulence gene (*avr*) was identified which share 99% sequence identity with *avrGf2*, a gene that belongs to the XopAG type III effector family present in XfaC. The next step in this research will be to clone this region in Xce, to further determine if there are *avr* genes in the genome of Xce and other variants of the gene at the field.

Analysis of the spatial distribution of species for HLB and *Diaphorina citri* in South America through an updated version of the Multi-Model Framework

A. Cruz (1), G. Fuentes (1), D. Arraztio (1), L. Morales (1), R. Tapia Opazo (2), N. Olivares Pacheco (3), A. M. GOCHEZ (4)
(1) University of Chile, (2) SAG of Chile, (3) INIA La Cruz, Chile, (4) INTA EEA Bella Vista, Corrientes, Argentina

The HLB-Greening is the most important disease for the development of sustainable citrus industry in South America. With the aim of developing innovative regional tools to reduce the incidence of this disease and its vector (*Diaphorina citri*), possible scenarios of