

CMS4A) were evaluated to control nine sorghum physiologic races of *C. sublineolum* (13A, 15A, 31B, 30B, 15B, 13B, 31C, 30C, 29E) and four additional isolates (51, 57, 126, 148) from different locations in Brazil. Evaluations *in vitro*, were made by measuring the diameter of the inhibition halo formed by *Streptomyces* spp. isolates. Sorghum seeds were also inoculated with *Streptomyces* spp. isolates for evaluating the incidence of the pathogen *C. sublineolum* and coleorhizal protrusion during germination. The resistance of *C. sublineolum* to control by *Streptomyces* spp. isolates varied among races and isolates of *Streptomyces* spp. Isolate DAUFPE 11470 was the most efficient in controlling all *C. sublineolum* races and isolates both *in vitro* and in seed inoculation experiments. Fungus incidence in seeds inoculated with this isolate ranged from 88.5% to 99.1%, respectively for the most virulent race (31A) and the less virulent isolate (148). No control was detected by the *Streptomyces* spp. isolates CMS4A and CMS2A *in vitro* or with sorghum seed inoculation. These results indicate that *Streptomyces* spp. isolates are potential control agents against *C. sublineolum*.

38.11 SUPPRESSION OF *FUSARIUM MONIFORME* BY *STREPTOMYCES* SPP. ISOLATES IN RELATION TO DOSE-RESPONSE RELATIONSHIP. W. Bressan and J.E. Figueiredo, *Embrapa*— Maize and Sorghum Research Center, P.O. Box, 151, 35701-970 Sete Lagoas, MG, Brazil. Email: bressan@cnpms.embrapa.br

Fusarium moniliforme J. Sheldon (*Giberella fujikuroi* Sawasa Wollen) commonly infects a wide range of crops. On maize (*Zea mays* L.) the fungus causes seedling blight as well as root, stalk, ear and kernel rot. Two isolates of *Streptomyces* spp. DAUFPE 11470 and DAUFPE 14632, were evaluated to determine the suppression of *Fusarium* disease through antagonist-pathogen relationship under greenhouse conditions. Control plants were grown in soil without antagonist *Streptomyces* spp. isolates. Pathogen (10^3 , 10^4 , 10^5 , 10^6 Chl/ml) and antagonist (10^3 , 10^4 , 10^5 , 10^6 CfU/ml) concentrations, significantly affected the development of *Fusarium* disease with a significant interaction between pathogen and antagonist concentration. Both *Streptomyces* spp. isolates demonstrated effective control of *Fusarium* disease, regardless of pathogen concentration. The highest disease suppression for both isolates occurred at low pathogen concentration (10^3 Chl/g soil) and high antagonist concentration (10^6 CfU/ml). The isolate DAUFPE 11470, provided the most effective control for all antagonist-pathogen inoculum concentration. Disease suppression by isolate DAUFPE 11470 (10^6 CfU/ml) did not differ significantly ($p \leq 0.05$) when the pathogen inoculum concentration ranged from 10^3 to 10^5 Chl/g soil. In relation to control plants, the highest disease suppression, for both antagonist isolates, occurred at the highest antagonist-pathogen concentrations. These values were 62% and 55% for DAUFPE 11470 and DAUFPE 14632, respectively. The results indicated that the effectiveness of suppression of *Fusarium* disease by *Streptomyces* spp. isolates depends on antagonist-pathogen concentration.

38.12 SURVIVAL AND INFECTION POTENTIAL OF *VERTICILLIUM DAHLIAE* IN WOOD CHIP MULCH FROM INFECTED OLIVE TREES. E. Cabeza-Fernández and J. Bejarano-Alcázar, IFAPA. Centro Alameda del Obispo, Apartado 3092, 14080 Córdoba, Spain. Email: jose.bejarano@juntadeandalucia.es

Mulching with wood chips from olive trees could serve as a source of inoculum in olive orchards if these materials come from *Verticillium dahliae* (Vd)-infected trees. Two experiments were

conducted in two olive orchards infested with Vd in southern Spain in 2003 and 2004. Eleven trees seriously affected by *Verticillium* wilt were selected in each field. Single-spored Vd isolates from selected trees were characterized as defoliating (D) or non-defoliating (ND) pathotypes using a pathogenicity test on cotton cultivar Acala SJ-2. Pruned wood of each tree was chipped, placed in mesh bags and kept on the soil under field conditions. The chips without leaves were analyzed monthly for Vd, and the potential of D-infected chips to cause disease was determined in bioassays on Acala SJ-2. Seeds of Acala SJ-2 were sown in pots filled with a mixture of ground chips and sterile soil. All trees were infected by the D pathotype, except two trees in 2003 that were infected by the ND pathotype. Vd was isolated from 0.4 and 7.3% of D-infected chips 150 and 120 days after the start of experiments in 2003 and 2004, respectively. On the contrary, the fungus only survived in ND-infected chips for 30 days. Cotton plants showed severe *Verticillium* wilt symptoms with variable incidence, even when the soil was infested with D-infected chips maintained in the field for 120 days. These results suggest that chipped wood from infected olive trees used as mulch is a potential source of Vd inoculum in olive orchards.

38.13 EFFECT OF CROPPING SYSTEMS ON THE DYNAMICS OF BEAN WEB BLIGHT EPIDEMICS. A.C. Café-Filho, G.R. Costa and M. Lobo-Júnior. Departamento de Fitopatologia, Universidade de Brasília, 70910-900, Brasília, DF, Brazil. Email: cafefilh@unb.br

Web blight, caused by *Thanatephorus cucumeris* (anamorph *Rhizoctonia solani*) is one of the main tropical diseases of common bean (*Phaseolus vulgaris*). Grain yield losses may reach 100% in favourable conditions and high inoculum levels. Even at lower severity levels, grain from affected fields is unfit for use as seed or human consumption. *T. cucumeris* survives in cultivated or wild plants, crop debris, infested soil and seeds. No commercial bean cultivar is highly resistant, and control relies mainly on seed treatment and fungicide application. Despite its importance in several microclimates, especially during the rainy season, there has been very little study on the bean-*Thanatephorus* pathosystem, particularly in Brazil. We report the results of three years of field trials using different planting systems on the dynamics of web blight epidemics. Experiments followed a randomized complete block design with four replicates, with treatment units composed of four 5-meter lines planted with cv. Pérola. Three crop systems were compared: (1) No-till, over *Brachiaria* grass mulch; (2) Minimum till; and (3) Conventional tillage. Disease severity was rated several times during each cropping season and disease progress curves were drawn. Results indicated that the no-till system gave the lowest disease levels and lowest disease progress rates, possibly due to the presence of the grass mulch over the soil, which may have served as a physical barrier against basidiospore dispersion. Choice of cropping system has a significant impact on the severity of bean web blight.

38.14* GLOBAL POPULATION GENETICS AND PHYLOGEOGRAPHY OF THE MAIZE, RICE, AND SOYBEAN PATHOGEN *RHIZOCTONIA SOLANI* AG-1 IA. P.C. Ceresini, J. Bernardes de Assis, M.B. Ciampi, A.D. Gonzalez-Vera, M. Zala and B.A. McDonald. ETH Zurich, Institute of Integrative Biology (IBZ), Plant Pathology, Universitaetstrasse 2, LFW B28, 8092, Zurich, Switzerland. Email: paulo.ceresini@agrl.ethz.ch

One of the most important groups within the Basidiomycete