**First report of soybean Fusarium wilt caused by *Fusarium graminearum* in Croatia**

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Wilted soybean plants (*Glycine max* (L) Merr.) were observed in May and June 2014, in commercial fields at Osijek and Vinkovci, Slavonia County, respectively. Affected plants were at the V3 crop developmental stage (Licht 2014) at Osijek and R1 stage at Vinkovci. Disease was observed on approximately 20% of the plants in the examined fields. Symptoms of the disease observed were external and internal browning at the base of stems, interveinal chlorosis of leaves, wilting, and death of shoots. Roots appeared healthy. Isolations of the pathogen were made from the discolored stem tissues that were previously sterilized with 1% sodium hypochlorite and then placed on potato dextrose agar (PDA). Colonies grown on PDA were carmine red with white margins and red pigments were produced in agar. The isolated fungi were transferred to carnation leaf agar (CLA) to induce sporulation. Macroconidia were unequally curved, 4- to 6-septate with foot-shaped basal cell and slender apical cell. Morphology of colonies and conidia matched the description of *Fusarium graminearum* Schw. (Leslie and Summerell 2006). Identity of the fungus was confirmed by sequencing a portion of the EF1-α gene using the degenerate primers EF1 and EF2 (O'Donnell et al. 1998). BLASTn searches of the obtained sequences showed a 100% homology with gene sequences of *Fusarium graminearum* Schw.inGenBank (AN: JX118857). To test the pathogenicity artificial inoculation was done. Inoculum was prepared using sterilized mixtures of wheat and barley seeds (10 g of each) inoculated with two separate *F. graminearum* isolates (SVK1 – AN: KT875172 and TFus2 – AN: KT875173). The wheat-barley mixture was inoculated with spore suspension (106conidia/ml) and incubated for 2 weeks at room temperature. Non-inoculated mixture served as the control. After 2 weeks, the inoculum was placed a 3-4 cm below the surface of sterile soil in 50x20x15 cm pots. Thirty soybean seeds (ten seeds per pot in 3 replications for each treatment) were sown in the pots. Pots were placed in a humid chamber (75% relative humidity, 14-h light period at 25°C and 8-h night period at 22°C) and watered as needed to keep the soil moist. Seven weeks after inoculation, stem discoloration was observed on 69.2% (SVK1) and 82.8% (TFus2) soybean plants. Symptoms on infected plants were similar to those observed in the field. *F. graminearum* was reisolated from all diseased plants. Control plants did not exhibit disease symptoms. A previous paper reported the presence of *F. graminearum* on soybean stems in Argentina (Pioli et al. 2004), but according to our knowledge, this is the first report of Fusarium wilt of soybean caused by *F. graminearum* in Croatia. Soybean production in Croatia is increasing; therefore the presence of this pathogen has the potential to limit large-scale production.

*References:*

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