Interaction Between SCN and Herbicide Stress on Soybean Yield Formation. (C02-westgate162344-Poster)

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Abstract:

A combination of stresses from soil borne pathogens, herbicides, or soil compaction may act synergistically to limit yield of soybean (Glycine max). We tested this possibility by combining pathogen resistance, herbicide, and tillage treatments in a field experiment conducted for two years near Ames, IA. Treatments included four soybean varieties varying in resistance to soybean cyst nematode (SCN-R) and brown stem rot BSR-R), four herbicides (acifluorfen, imazethapyr, glyphosate, and a weed free check), two tillages, and a field site infested with SCN. SCN-R varieties consistently yielded more than SCN-S varieties. Acifluorfen significantly reduced yield in 2000, which was warmer and drier than 2001. SCN resistance decreased the impact of this herbicide stress on yield. All treatment effects on yield were closely correlated (R2=0.91) to seed number per m2 and canopy growth rate during flowering and pod set. SCN-R varieties set pods over a longer period of time, which may have enabled them to recover from herbicide stress. For SCN-S varieties, yield loss from a combination of SCN pressure and herbicide stress was greater than from either stress alone.

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