Water Stress and Take-all of Wheat in Two Closely-Related Genotypes Different in Drought and Greenbug Resistance. (C02-balota091800-Poster)

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Abstract:

Take-all is a soilborne disease of wheat and other cereals and grasses widespread in temperate climates around the world. Yield losses can easily reach 50 percent due to the destruction of the root system, poor plant development, and production of bleached, sterile spikelets. The entire plant dries out rapidly, getting a drought stressed appearance. Water either from irrigation or from rainfall is inefficiently used, decreasing profitability. A whole-plant disease physiology study was conducted in the greenhouse under controlled conditions. The objective was to evaluate the combined effect of take-all disease and water availability on plant growth characteristics and water use efficiency of two closely-related wheat lines previously distinguished for yield response to drought resistance. Evaluations were performed at booting, heading, flowering, two weeks after flowering, four weeks after flowering and at maturity. Disease produced the largest effect on shoot and root dry biomass, CO2 fixation rate and water use efficiency, followed by water treatment. The two genotypes were found not to differ.

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