Winter Wheat Response to Elimination of Summer Fallow in Semiarid Western Nebraska. (C03-lyon000920-Poster)

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Abstract:

A field study was conducted near Sidney, NE to investigate the effects of replacing summer fallow with several spring-planted crop types on the subsequent winter wheat crop. Spring-planted crops were no-till seeded into sunflower residue. Spring-planted crops served as whole plot treatments and five fall-applied nitrogen fertilizer rates (0, 22, 45, 67, and 90 kg N/ha) in wheat served as the split-plot treatments. Treatment combinations were replicated five times in each of three seasons beginning with the 1999-2000 season. With the exception of winter wheat following proso millet in two of the three years, wheat grain yield did not respond to nitrogen fertilizer rate. In all three years, wheat grain yields were greatest after summer fallow, with wheat after oat and pea for forage providing the next greatest yield. Wheat yield rankings following the other four crop treatments varied by year. The three-year average wheat yields were 2010, 1560, 1320, 1140, 1000, and 838 kg/ha for wheat after summer fallow, oat and pea for forage, proso millet, spring canola, dry edible bean, and corn treatments, respectively.

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