

Have you ever wondered if seed treatments actually increase corn and grain sorghum yields?

A 3-year study was established at the Harvey County Experiment Field near Hesston, KS to address this question. The research site was a Ladysmith silty clay loam that was in a corn-soybean or corn-sorghum rotation. The study included two corn hybrids, two sorghum hybrids and several seed treatments (No-treatment, Gaucho, Cruiser and Prescribe). The corn was planted mid-April at 20,000 to 23,000 seeds per acre and the grain sorghum was planted early May at 46,000 to 47,000 seeds per acre. There were only light to moderate infestations of flea beetles and chinch bugs over the study period.

Over the three-year study, corn yields were depressed due to the hot, dry conditions with yields ranging from 30 to 93 bushels per acre. The three-year average corn yield for the no-treatment (check) was 51 bushels per acre, while the average for the seed treatments was 61 bushels per acre- a 10 bushel difference. In 2000, there was a 24 bushel difference between the check treatment (77 bu/a) and the average of the seed treatments (101 bu/a), but in 2001, there were no difference between the check treatment (29 bu/a) and the average of the seed treatments (29.7 bu/a). In 2002, there was a 3.5 bushels per acre advantage for the seed treatments (51.5 bu/a) over the check treatment (48 bu/a).

Average grain sorghum yields over the three years ranged from 48 to 107 bushels per acre. The three-year average grain sorghum yield for the no-treatment (check) was 63 bushels per acre, while the average for the seed treatments was 71.5 bushels per acre- an 8.5 bushel difference. In 2000, there was an 11 bushel difference between the check (100 bu/a) and the average of the seed treatments (111 bu/a) and in 2001, there was a 4 bushels per acre difference between the check treatment (48 bu/a) and the average of the seed treatments (52 bu/a). In 2002, there was a 9 bushels per acre advantage for the seed treatments (51 bu/a) over the check treatment (42 bu/a).

What's the bottom line?

Based on these data, there appears to be a yield advantage for corn and grain sorghum when using a seed treatment even when insect infestations are low. It is reasonable to expect a yield response with a seed treatment when insect pressure is high. So, how do we explain a yield response for corn and grain sorghum with a seed treatment with little or no insect pressure?

One explanation is the seed treatment allows plants to be more healthy by minimizing damage caused by minor pests that "nibble" away at yields. Another explanation is that even low insect pressure of wireworms, southern corn leaf beetles, flea beetles or chinch bugs reduces yields and seed treatments limit that damage, thus the yield increase.

For more details about this research see:

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