



2018 Field Plot Summaries for Soybeans: Plant Disease and Fungicide Trials

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SUMMARY

This is a summary of soybean field research studies that were conducted in 2018. The purpose of these studies was to assess efficacies of fungicides for foliar disease management and nematicides/seed treatment products for nematode management. The studies were conducted on growers' land in Brookings and Volga Research Farm.

Fungicide and nematicide products used in these trials were approved for use in the state of South Dakota although in some instances experimental products were used within the restricted use guidelines. Some of the protocols exercised in these experiments include changes in rate and application timing and should not be taken as recommendations. Therefore, producers should always read and follow product label application protocols such as product use, application method, safety handling, pre-harvest, re-entry intervals and all other safety guidelines.

In general, foliar disease pressure was low at the Volga location. As a result, there were no statistically significant differences among treatments, although some products had numerically higher yield. Overall, fungicide treated plots had on average 3 bu/A increase in yield. For SCN, there were no significant differences among treatments, but the susceptible non-treated check had significantly low yield, indicating that nematicide seed treatments prevented yield loss for the SCN susceptible cultivar but not for the resistant cultivar.

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Several commercially available fungicides were evaluated for soybean foliar fungal disease management. All fungicides were applied at R3 (beginning pod) growth stage. Because of low disease pressure at the Volga location, no statistically significant differences for disease severity were observed (Table 1.1). However, treatment effect for yield was statistically significant suggesting that the fungicides had residual effect that still had an impact on late season disease severity after disease data was collected.

Cultivar: S17-B3

Previous Crop: Soybean; **Planted:** 5/23/2018 (Volga)

Table 1.1 Foliar Fungicide Study: Means for yield, test weight, brown spot and frogeye leaf spot following application of fungicides at R3 at Volga, SD for the 2018 season.

Treatment/Rate/Timing	Yield (bu/ac)	Brown spot (%)	Frogeye leaf spot (%)
UNTREATED	52.06 ab	0.30 a	0.83 a
DELARO, 8fl oz/A@R3	54.77 ab	0.08 a	1.55 a
Stratego YLD, 4fl oz/A@R3	62.64 a	0.50 a	1.30 a
Priaxor, 8fl oz/A@R3	58.73 ab	0.45 a	1.80 a
Fortix, 4fl oz/A@R3	56.44 ab	0.33 a	1.43 a
Sonata, 1qt/A@R3	53.85 ab	0.08 a	1.73 a
Cuproxat, 3.9pt/A@R3	48.17 b	0.40 a	1.00 a
Domark 230ME, 4fl oz/A@R3	50.94 ab	0.28 a	1.68 a
Trivapro (A4.1 oz/A+B10.5 oz/A), 10fl oz/A@R3	57.57 ab	0.13 a	1.28 a
Zolera FX 3.34SC, 5fl oz/A@R3	50.74 ab	0.43 a	1.28 a
DELARO, 8fl oz/A@R3	59.96 ab	0.15 a	1.13 a

Means followed by the same letter are not significantly different, $\alpha=0.05$

2.0 Soybean Cyst Nematode I (SCN I)

Brookings

The efficacy of several products was evaluated for nematode management. Two cultivars, GH0674X and SO6Q9 were treated with each of the products (Table 2.1). SO6Q9 is resistant to SCN while GH0674X is susceptible. The study was planted at a cooperator's field located about 15 miles north of Brookings municipality. Treatments were not significantly different from each other for the SCN resistant cultivar but differed in the non-treated susceptible check. While SCN treatments did not differ in reducing SCN numbers, these results suggest that SCN treatments can prevent yield loss especially if a susceptible cultivar is planted. It should be noted that the part of the field where the trial was located was a low spot area where root rots and SCN are more abundant. These results therefore should be interpreted bearing in mind that this is for one location, one year, and in a specific portion of the field that had high disease pressure.

2.0 Soybean Cyst Nematode I

Brookings

Cultivars: GH0674X (SCN-Susceptible) and SO6Q9 (SCN-Resistant)

Previous Crop: Corn

Planted: 5/25/2018

Table 2.1. Soybean Cysts Nematode (SCN) Demonstration: Means for fall and spring SCN numbers, yield, early and final stand counts associated with various seed treatments at Brookings, SD for 2018.

Cultivar	Treatment	Yield (bu/A)	Spring SCN Numbers	Fall SCN Numbers	Spring stand count (plants/ac)	Fall stand count (plants/ac)
GH0674X	Untreated Check	22.17 c	900 a	2100 b	101292 ab	93123 Ab
	CruiserMaxx Beans					
GH0674X	Vibrance	27.31 bc	738 ab	3188 ab	87677 ab	92578 Ab
	Avicta Complete,					
GH0674X	Beans 500+Vibrance	30.69 abc	888 ab	5525 ab	93668 ab	98569 Ab
GH0674X	Clariva ELITE Beans	38.63 ab	1150 ab	2750 b	87677 ab	78964 Ab
GH0674X	Illevo	36.84 ab	550 ab	7338 a	90400 ab	72429 B
GH0674X	Mycorrhizae	36.00 ab	925 ab	2763 b	78419 b	82231 ab
SO6Q9	Untreated Check	39.96 ab	400 ab	4050 ab	89856 ab	78420 ab
	CruiserMaxx Beans					11218
SO6Q9	Vibrance	33.85 abc	838 ab	3213 ab	106738 ab	3 a
	Avicta Complete,					11109
SO6Q9	Beans 500+Vibrance	38.72 ab	213 ab	2688 b	121986 a	4 a
SO6Q9	Clariva ELITE Beans	42.90 a	1413 b	2413 b	94212 ab	70795 b
SO6Q9	Illevo	36.80 ab	1000 b	1563 b	102381 ab	96935 ab
	Mycorrhizae	38.76 ab	1963 b	1975 b	123075 a	10782
SO6Q9						6 ab

Means followed by the same letter are not significantly different, $\alpha=0.05$