

Safflower tolerance to Spartan

The objective of this study was to evaluate safflower tolerance to Spartan applied preemergence (PRE) at various rates. The study was conducted at two locations. At "Site 1", safflower was planted on May 3 in the morning and herbicides were applied later that afternoon. Site 1 was irrigated as needed throughout the season. At "Site 2", safflower was planted April 21 and herbicide treatments were applied PRE on May 3. Site 1 was conducted in a conventional tillage system, while Site 2 was conducted under a no-till system. A fungicide was sprayed at Site 2, but not at Site 1. Safflower yield and quality were reduced at Site 1 due to disease. At Site 2, safflower stand and development were hindered and injury increased where old wheat residue was heavy. Safflower injury was light to severe and increased with Spartan rate, but visible injury symptoms decreased over time. Yield was somewhat variable at both locations as indicated by the high coefficient of variation (CV).

Spartan is not currently registered for use in safflower; however, FMC is considering registering it for 2017. If registered, the label will carry an indemnification statement indicating growers will use the product at their own risk. We have observed that safflower tends to grow out of injury caused by Spartan, especially when rainfall is plentiful. Farmers must know their soil characteristics to identify the correct Spartan rate to use.

Table 1. Safflower tolerance to Spartan. (Site 1 - 1652)

			Safflower								
Treatment	Rate	Timing	Density	Injury				Height	Height	Yield	Oil
			Jun-2	Jun-3	Jun-17	Jul-15	Aug-30	Jun-22	Aug-1	Sep-27	Sep-27
			m of row	-----%-----				cm	cm	lb/A	---%---
Untreated			8.1	0	0	0	0	54.8	82.3	1680	26.1
Spartan	1 oz	PRE	9.8	10	7	0	0	56.1	84.0	1716	25.3
Spartan	2 oz	PRE	8.5	18	15	0	0	53.8	86.7	1486	25.5
Spartan	3 oz	PRE	8.2	25	24	1	1	46.3	81.9	1590	26.4
Spartan	4 oz	PRE	8.8	35	30	4	1	47.4	85.9	1611	25.6
Spartan	6 oz	PRE	8.8	54	54	5	3	42.4	84.5	1435	24.7
Prowl H2O	2 pt	PRE	10.3	10	6	0	0	55.0	80.3	1776	25.7
LSD (0.05)			NS	5.5	8.3	1.3	1.3	5.8	NS	NS	NS
CV			12.1	17.2	29.0	67.7	131.8	7.7	3.8	16.0	3.9

*Soil characteristics: Silty loam, pH 8.1, OM 2.3%

Table 2. Safflower tolerance to Spartan. (Site 2 - 1653)

			Safflower								
Treatment	Rate	Timing	Density	Injury				Height	Yield	Oil	
			Jun-2	Jun-3	Jun-17	Jul-5	Jul-27	Jul-21	Sep-29	Sep-29	
			m of row	-----%-----				cm	lb/A	---%---	
Untreated			5.3	0	0	0	0	58.8	1420	33.9	
Spartan	1 oz	PRE	6.0	7	5	2	0	60.0	1636	33.7	
Spartan	2 oz	PRE	5.7	17	13	7	3	58.5	1709	34.1	
Spartan	3 oz	PRE	5.4	25	20	11	7	62.3	2001	34.4	
Spartan	4 oz	PRE	5.2	56	55	38	22	57.3	1653	34.7	
Spartan	6 oz	PRE	6.3	51	44	30	19	58.0	1266	34.7	
Prowl H2O	2 pt	PRE	5.8	7	5	1	0	57.3	1618	33.6	
LSD (0.05)			NS	8.9	15.6	12.0	6.8	NS	NS	NS	
CV			25.2	25.7	51.9	64.2	63.7	5.8	21.1	1.8	

*Soil characteristics: Loam, pH 8.1, OM 2.5%