## SURFLAN AND PROWL APPLICATIONS IN WHEAT FOR WEED CONTROL IN NO-TILL SOYBEANS

Ted Whitwell and S.M. Brown<sup>1</sup> Alabama Agricultural Experiment Station, Auburn University

Weeds that often cause the most problems in no-till soybeans are those that become established in wheat prior to soybean planting. In some situations, weed control may be improved by applying wheattolerant herbicides into the wheat prior to weed seed germination.

Experiments were conducted from 1981 through 1983 at the Tennessee Valley (TVA) and Sand Mountain (SMS) Substations to evaluate herbicide applications in wheat for weed control in no-till soybeans. Treatments consisted of 2 rates of Surflan and Prowl applied in March when the wheat was fully tillered or in June after soybeans were planted. 2,4-D was also evaluated when applied alone and in combination with Surflan. Paraquat was applied alone and in combination with Surflan or Prowl after the soybeans were planted. Wheat injury ratings and yields, and soybean weed control ratings and yields were taken.

Visual ratings of wheat in May indicated only minor herbicide injury at TVS, but at SMS injury was observed with the highest rate of Surflan in 1981, and with both rates in 1983. Wheat yields, however, were not affected by either herbicide. 2,4-D alone (1qt./acre) and 2,4-D (1qt./acre) plus Surflan( $2\frac{1}{2}$  qts./acre) reduced yields in 1983 at TVS. The Surflan rate was twice the labeled rate for this soil.

Soybeans were not injured by any herbicides treatment to wheat in any year at either location. Surflan caused minor early injury when applied after soybean planting. Combinations of Surflan with 2,4-D applied after soybean planting caused moderate injury in 2 of the 3 years at SMS.

In two of the **3** years at TVS, Surflan application into the wheat improved annual grass control when compared to applications made after soybean planting (table 1) and prowl applications in the wheat improved grass control in 1 of the 2 years. At SMS, the only benefit from applying herbicides in wheat was improved grass control by Prowl in 1983.

Soybean yields ranged from 2 to 51 bu./acre depending on year and weed control. When compared to the no herbicide control, Surflan applied to the wheat improved yields in 1981 at the Tennessee Valley location. In 1983, soybean yields were improved with all herbicide applied to the wheat at the Sand Mountain location.

<sup>&</sup>lt;sup>1</sup>Former Weed Scientist and Research Associate, respectively.

In summary, wheat was not adversely affected with Prowl and Surflan applications made at the fully tillered stage at either location. Annual grass and smartweed control were generally improved with Surflan and Prowl applications made into fully tillered wheat when compared to those made after soybean planting. Soybean yields were improved in 1981 with Surflan applications in wheat at the Tennessee Valley location and in 1983 with both Prowl and Surflan applications at the Sand Mountain location.

Table 1. Annual Grass (fall panicum and large crabgrass) and Smartweed Control As Affected by Herbicide, Rate and Time of Application, Tennessee Valley Substation.

			Annual	grass (	control	Smartweed	control
Herbicide/Time		Rate	1981	1982	1983	1983	1983
		qts./acre			%		
Wł	neat <sup>1</sup>						
1. 2.	Surflan 2	<b>1.25</b> 2.5	<i>99</i> 100	<i>9</i> 7 100	78 76	99 100	84 84
3. 4.	Surflan + $2,4-D^{3}$ Surflan + $2,4-D$	1.25 + 0.5 2.5 + 1.0	100 100	98 99	7 <i>2</i> 16	<i>98</i> 100	88 90
5. 6.	2,4-D Ester' Prowl	1.0 1.0	90	89 88 100	52 60	85 100 100	74 89
7. 8.	Untreated	2.0	0	0	0	0	84 0
Soybeans '							
9. 10. <b>11.</b> 12.	Surflan Surflan Prowl Prowl	1.25 2.5 1.0 2.0	5% 66	77 76 61 <u>7</u> 5	72 72 69 80	40 46 46 41	54 53 64 71
LSD (5%)			20	16	20	14	11

'Applied to fully tillered wheat 'Applied after soybean planting

Amine form of 2,4-D - 4 lb./gal

**5 Ester** form (Esteron 99) of 2,4-D = 4 lb./gal **All** treatments received Paraquat + Surfactant soybean planting

			Annual	grass control	Smartweed	control			
Herbicide <b>/Time</b>		Rate	1982	1983	1983	1983			
		qts./acre		%%					
%ea	at I								
1. 2. 3. 4. 5. 6. 7. 8.	Surflan <sup>5</sup> Surflan Surflan + 2,4-D Surflan + 2,4-D Surflan + 2,4-D <b>2,4-D</b> Ester Prowl Prowl Untreated	1.25 2.5 1.25 + 0.5 2.5 + 1.0 1.12 1 2	85 90 87 89 91 71 79 82	86 92 83 94 91 80 80 <b>0</b>	100 100 96 95 98 100 55	91 92 86 96 68 86 95 <b>0</b>			
Soybeans <sup>2</sup>									
9. 10. 11. 12. 13. 14.	Surflan Surflan Surflan + 2,4-D Surflan + 2,4-D Prowl Prowl	1.25 2.5 1.25 + 0.5 2.5 + 1.0 1.0 2.0	87 93 94 89 81	81 83 82 76 68 78	83 95 100 58 73	33 23 53 60 18 <u>33</u>			
LSD (5%) 8 10 28 19									

Table 2. Annual Grass (fall panicum and large crabgrass) and Smartweed Control As Affected by Herbicide rate and Time of Application, Sand Mountain Substation.