

Weed Control Practices

The most common chemical weed control practices were post-applied bentazon (Basagran, others), used by 80% of respondents on 57% of Northharvest respondents' acres, followed by spring applied trifluralin, used on 31% of respondents' acres, and Assure II and Pursuit, each used on 26% of respondents' acres, and fall applied Sonalan, used on 23% of respondents' acres. Other common weed control practices included use of spring applied Sonalan, used on 18% of respondents' acres, and Poast, used on 11% of respondents acres (Table 15). The use of Assure II was up from 19% of respondents' acres in 1997.

The most common cultural weed control practice was inter-row cultivation, used by 85% of Northharvest respondents on 85% of their acres. Rotary hoe was used by 26% of respondents on 18% of their acres (Table 15).

Table 15: Weed control practices in 1998 by all Northharvest respondents in Minnesota and North Dakota

Weed Control Practice ^a	Respondents		Acres Reported ^b	
	Number	%	Number	%
Cultivation	149	84.7	81,929	84.7
Bentazon (Basagran, others)	141	80.1	55,335	57.2
Trifluralin, spring applied	95	54.0	30,366	31.4
Assure II	60	34.1	25,210	26.1
Pursuit	82	46.6	24,634	25.5
Sonalan, fall applied	48	27.3	21,837	22.6
Rotary hoe	46	26.1	17,777	18.4
Sonalan, spring applied	47	26.7	17,661	18.3
Poast	27	15.3	10,273	
Prowl	29	16.5	7,600	7.9
Eptam, spring applied	16	9.1	5,755	6.0
Roundup, preplant	13	7.4	5,625	5.8
Lasso	12	6.8	4,372	4.5
Trifluralin + Eptam	3	1.7	2,550	2.6
Dual	4	2.3	2,000	2.1
Trifluralin, fall applied	6	3.4	1,525	1.6
Frontier	4	2.3	1,190	1.2

^aIncludes all practices or herbicides used on more than 1,000 acres

^bRespondents' acres only.

In Minnesota, post-applied bentazon was applied by 75% of respondents on 55% of their acres, up slightly from 52% in 1997. Fall-applied Sonalan was applied to 26% of respondents' acres, followed by Pursuit, applied to 25% of respondents' acres. The use of Pursuit was a significant increase from 1997, when it was used on less than 10% of Minnesota respondents' acres. Increased Pursuit use is due to a greater nightshade infestation in dry bean acres. No other registered dry bean herbicide controls nightshade as well as Pursuit. Assure II was used on 21% of respondents' acres, followed by Prowl on 19%, Lasso on 15%, spring applied Sonalan, spring applied trifluralin, spring applied Eptam and Poast, each on 14%. Most herbicide usage was similar to that in 1997, except that the use of Prowl increased

from 13% of respondents' acres in 1997 to 19% in 1998. Inter-row cultivation was used by 84% of respondents on 79% of their acres, down from 81% in 1997 and 85% in 1996. Rotary hoe was used by 28% of respondents on 24% of their acres, down from 33% in 1997 and 30% in 1996 (Table 16). Wet weather early in the season may have influenced the reduced use of rotary hoe in 1998.

In North Dakota, post-applied bentazon was applied by 82% of respondents on 58% of their acres, up from 48% in 1997, but down from 64% in 1996. Spring applied trifluralin was applied to 38% of respondents' acres, up from 28% in 1997 and 16% in 1996. Assure II was applied on 28% of respondents' acres, up from 18% in 1997. Pursuit was applied to 26% of respondents' acres, fall applied Sonalan was applied to 22% of their acres and spring applied Sonalan was applied to 20% of their acres. Inter-row cultivation was used by 85% of respondents on 87% of their acres, up slightly from 85% in 1997. Rotary hoe was used by 25% of respondents on 17% of their acres, down slightly from 20% in 1997 (Table 16).

Table 16: Common weed control practices in 1998 in Minnesota and North Dakota

Weed Control Practice ^a	Respondents		Acres Reported ^b	
	Number	%	Number	%
Minnesota				
Cultivation	48	84.2	19,582	78.6
Bentazon (Basagran, others)	43	75.4	13,753	55.2
Sonalan, fall applied	14	24.6	6,386	25.6
Pursuit	24	42.1	6,103	24.5
Rotary hoe	16	28.1	5,956	23.9
Assure II	18	31.6	5,095	20.5
Prowl	20	35.1	4,660	18.7
Lasso	7	12.3	3,682	14.8
Sonalan, spring applied	14	24.6	3,575	14.4
Trifluralin, spring applied	15	26.3	3,438	13.8
Eptam, spring applied	10	17.5	3,430	13.8
Poast	13	22.8	3,423	13.7
North Dakota				
Cultivation	101	84.9	62,347	86.8
Bentazon (Basagran, others)	98	82.4	41,582	57.9
Trifluralin, spring applied	80	67.2	26,928	37.5
Assure II	42	35.3	20,115	28.0
Pursuit	58	48.7	18,531	25.8
Sonalan, fall applied	34	28.6	15,451	21.5
Sonalan, spring applied	33	27.7	14,086	19.6
Rotary hoe	30	25.2	11,821	16.5

^aPractice or herbicide used on more than 10% of respondents' acres.

^bRespondents' acres only.

Gramoxone Extra desiccant was used by 9% of Minnesota, 13% of North Dakota and 12% of

Northharvest respondents on 4%, 3% and 3% of their acres, respectively. Sodium chlorate desiccant was used by 12% of Minnesota, 3% of North Dakota and 6% of Northharvest respondents on 7%, >1% and 2% of their acres, respectively (Table 17). The low use of desiccants in 1998 contrasts sharply with the high use in 1997, when 33% of Minnesota, 25% of North Dakota and 27% of Northharvest respondents' acres were treated.

Table 17: Desiccants used in 1998 in Minnesota and North Dakota

Desiccant	Respondents		Acres Reported ^a	
	Number	%	Number	%
Minnesota				
Sodium Chlorate	7	12.3	1,712	6.9
Gramoxone Extra	5	8.9	935	3.8
North Dakota				
Sodium Chlorate	3	2.5	440	0.6
Gramoxone Extra	16	13.4	1,975	2.8
Northharvest Total				
Sodium Chlorate	10	5.7	2,152	2.2
Gramoxone Extra	21	11.9	2,910	3.0

^aRespondents' acres only.

Post-applied bentazon was the most commonly used herbicide on 50% of Minnesota respondents' black bean acres, 51% of their kidney, 57% of their navy, and 46% of their pinto bean acres. Fall-applied Sonalan was used on none of Minnesota respondents' black, 31% of their kidney, 27% of their navy, and 33% of their pinto acres. Pursuit was used on 21% of respondents' black, 29% of their kidney, 18% of their navy, and 28% of their kidney acres. Assure II was used on none of respondents' black, 23% of their kidney, 35% of their navy, and 14% of their pinto acres. Prowl was used on 29% of respondents' black, 16% of their kidney, 30% of their navy, and 14% of their pinto acres. Lasso was used on none of respondents' black, 29% of their kidney, none of their navy and 3% of their pinto acres. Spring applied Sonalan was used on 8% of respondents' black, 16% of their kidney, 22% of their navy and 11% of their pinto acres. Spring applied trifluralin was used on none of respondents' black, 5% of their kidney, 15% of their navy and 21% of their pinto acres. Spring applied Eptam was used on none of respondents' black, 10% of their kidney, 27% of their navy and 21% of their pinto acres. Poast was used on none of respondents' black, 14% of their kidney, 18% of their navy and 18% of their pinto acres (Table 18).

Post-applied bentazon was the most commonly used herbicide on 38% of North Dakota respondents' black bean acres, 53% of their navy, and 63% of their pinto bean acres. Spring applied trifluralin was used on 30% of North Dakota respondents' black, 61% of their navy and 32% of their pinto acres. Assure II was used on 26% of respondents' black, 15% of their navy and 27% of their pinto acres. Pursuit was used on 30% of respondents' black, 22% of their navy and 20% of their pinto acres. Fall applied Sonalan was used on 13% of respondents' black, 10% of their navy and 25% of their pinto acres. Spring applied Sonalan was used on 19% of respondents' black, 8% of their navy and 21% of their pinto acres. Poast was used on 2% of respondents' black, 3% of their navy and 10% of their pinto acres (Table 18).

Table 18: Herbicide use by bean class in 1998 in Minnesota and North Dakota

Herbicide	Black	Kidney	Navy	Pinto	State Total
	% of Acres Treated ^a				

Minnesota					
Bentazon (Basagran,others)	49.9	50.6	56.6	46.1	55.2
Sonalan, fall applied	0	30.7	27.1	32.6	25.6
Pursuit	20.8	29.1	18.1	28.7	24.5
Assure II	0	22.8	34.7	14.0	20.5
Prowl	28.9	16.4	30.3	13.9	18.7
Lasso	0	29.3	0	2.8	14.8
Sonalan, spring applied	7.9	16.4	22.1	10.5	14.4
Trifluralin, spring applied	0	5.0	14.9	20.6	13.8
Eptam, spring applied	0	10.4	27.1	21.4	13.8
Poast	0	14.4	17.7	17.7	13.7
North Dakota					
Bentazon (Basagran, others)	37.6	_ ^b	53.2	63.4	57.9
Trifluralin, spring applied	29.5	_ ^b	60.8	32.0	37.5
Assure II	25.6	_ ^b	15.0	26.8	28.0
Pursuit	29.7	_ ^b	21.6	20.1	25.8
Sonalan, fall applied	12.7	_ ^b	10.3	24.7	21.5
Sonalan, spring applied	19.1	_ ^b	7.9	21.2	19.6
Poast	2.1	_ ^b	3.3	10.4	9.5

^a % of respondents' acres for that class.

^bInsufficient data.

Inter-row cultivation was used once by 31% of Minnesota respondents who answered the question, twice by 58%, and three times by 10%. Inter-row cultivation was used once by 31% of North Dakota respondents who answered the question, twice by 57%, three times by 11% and four times by 1% (Table 19). These data are similar to those for 1997.

Table 19: Number of cultivations of dry beans in 1998 in Minnesota and North Dakota

	Number of Cultivations^a			
	1	2	3	4
Minnesota	31.3	58.3	10.4	0
North Dakota	30.7	57.4	10.9	1.0

^a % of respondents' answering question; excludes respondents who did not answer question.

Rotary hoe was used once by 69% of Minnesota respondents who answered the question, twice by 25% and three times by 6%; fewer respondents answered this and the previous question than some of the other questions. Rotary hoe was used once by 83% of North Dakota respondents who answered the question, twice by 13% and three times by 3% (Table 20). These data are similar to those for 1997.

Table 20: Number of times rotary hoe was used on dry

beans in 1998 in Minnesota and North Dakota

	Number of Times Rotary Hoe Used ^a		
	1	2	3
Minnesota	68.8	25.0	6.3
North Dakota	83.3	13.3	3.3

^a % of respondents' answering question; excludes respondents who did not answer question.

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