

Weed control and dry pea response to preemergence application of metribuzin and sulfentrazone.

A trial was conducted at Hettinger, ND, to evaluate weed control and dry pea response to preemergence applications of metribuzin and sulfentrazone applied alone and in combination (Table 1). Field pea “Pizzaz” was planted on May 1, 2024 at a depth of 2 inches using a John Deere no-till drill. Herbicide treatments were applied after planting on May 2 (Table 2). Peas emerged on May 14. Herbicide treatments included metribuzin (Tricor 75DF) at 4, 5.3, and 8 oz/A (product rate) and sulfentrazone (Spartan 4F) at 3.75, 5.25, and 6.75 oz/A (product). Dry pea were evaluated at 21 and 43 days after treatment (DAT); no visible injury was observed at either evaluation. Kochia, common lambsquarters, and green foxtail were evaluated for control at 43 DAT. Control of all three increased when metribuzin rate increased from 4 to 8 oz/A. Increasing the rate of sulfentrazone from 3.75 to 6.75 oz/A did not result in increased weed control for these three weeds. Combinations of metribuzin and sulfentrazone in most cases increased control of all three weeds compared with when these herbicides were applied alone. Dry pea stand was not affected by any of the herbicide treatments and was similar to the untreated control. There were slight differences in pea height when measured 8 WAT, but all treatments resulted in heights similar to the untreated control. Dry pea yield was greater in nearly all combination treatments compared with the untreated control. From this trial, it appears that under these growing conditions and soil, both metribuzin and sulfentrazone were not injurious to the pea variety tested in this trial. Some pea varieties are known to be sensitive to either metribuzin and/or sulfentrazone. If using these herbicides, check with seed supplier to verify that the pea variety you are planting have a known tolerance to these herbicides. The soil type in this trial is a loam with 37% sand, 39% silt, and 24% clay, with a pH of 5.9 and organic matter of 3.0%. Metribuzin should not be used for weed control in peas grown in coarse soils (sand, sandy loam, or loamy sand) with organic matter of 2% or less. Lower rates of metribuzin are recommended for all soils with organic matter of 2% or less. Similarly, the rate of sulfentrazone labelled for use in dry peas is dependent both on soil texture and organic matter. It is important to know these soil parameters in fields where these herbicides will be used for weed control in dry peas in order to apply the correct labelled rate and to minimize risk of injury to the dry pea crop.

Table 1. Weed control and dry pea response to preemergence application of metribuzin and sulfentrazone at Hettinger, ND, 2024

Treatment	Rate oz/A	Kochia % control	Lambsquarters % control	Green foxtail % control	Dry pea		
					Stand plts/ft ²	Height IN	Yield LB/A
1 Untreated		0	0	0	6.6-	19ab	2341cd
2 Metribuzin	4	77f	91c	67f	6.9-	19ab	2149d
3 Metribuzin	5.3	85de	99ab	74ef	6.6-	19ab	2715a-d
4 Metribuzin	8	97ab	96b	82cd	7.6-	18b	2321cd
5 Spartan	3.75	84def	99ab	78de	7.6-	19ab	2603bcd
6 Spartan	5.25	80ef	100ab	82cd	6.0-	20a	2847abc
7 Spartan	6.75	80ef	99ab	82cd	6.8-	20a	2803abc
8 Metribuzin	4	89cd	98ab	76de	6.7-	19ab	2583bcd
Spartan	3.75						
9 Metribuzin	4	90bcd	100a	86bc	6.4-	20a	2747abc
Spartan	5.25						
10 Metribuzin	4	86cde	100ab	82cd	6.2-	20a	2956ab
Spartan	6.75						
11 Metribuzin	5.3	93abc	100ab	88bc	6.6-	20ab	3006ab
Spartan	3.75						
12 Metribuzin	5.3	89cd	100a	92ab	6.7-	19ab	3182a
Spartan	5.25						
13 Metribuzin	5.3	89cd	100ab	89bc	6.6-	20ab	3145ab
Spartan	6.75						
14 Metribuzin	8	94abc	100a	92ab	7.1-	19ab	3125ab
Spartan	3.75						
15 Metribuzin	8	94abc	100ab	88bc	5.9-	19ab	2805abc
Spartan	5.25						
16 Metribuzin	8	98a	100ab	97a	6.3-	20ab	2843abc
Spartan	6.75						
LSD P=.05		7.2	4.0	6.6	1.13	1.6	557.00
Standard Deviation		5.1	2.8	4.6	0.80	1.1	391.56
CV		5.75	2.84	5.4	11.94	5.93	14.18
Treatment F		6.098	2.544	9.286	1.439	1.984	3.072
Treatment Prob(F)		0.0001	0.0121	0.0001	0.1709	0.0403	0.0017

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).

Table 2. Application environment and equipment for preemergence application of herbicide treatments for weed control in dry peas.

Application Description	Application equipment		
Date	May-2-2024	Equipment Type	Tractor mounted
Start Time	7:33 AM	Operation Pressure	38 PSI
Stop Time	8:26 AM	Nozzle Model	11002DG
Air Temperature Start, Stop	40.6, 42.2 F	Nozzle Spacing	20 IN
% Relative Humidity Start, Stop	69.4, 75.8	Boom Length	100 IN
Wind Velocity+Dir. Start	4.1 MPH, W	Boom Height	20 IN
Wind Velocity+Dir. Stop	5.2 MPH, W	Ground Speed	4 MPH
Wind Velocity+Dir. Max	10.8 MPH, W	Carrier	WATER
Wet Leaves (Y/N)	Y, yes	Application Amount	10 GAL/AC
Soil Temperature	42 F	Propellant	CO2
% Cloud Cover	100	Tank Mix (Y/N)	Y, yes