

PROJECT TITLE: Evaluation of Achieve for Wild Oat Control

PROJECT LEADERS: Bob Stougaard and Todd Keener, NWARC, Kalispell, MT.

OBJECTIVE:

To evaluate Achieve for wild oat control and determine if antagonism exist with various tank-mix combinations.

RESULTS:

The greatest degree of injury occurred with the Hoelon treatment due to the addition of crop oil concentrate. The addition of 2,4-D or MCPA to Achieve caused crop injury as well. This was probably due to the phenoxy component alone and is related to the advanced stage of crop development when the treatments were applied. Achieve alone provided 96% control of wild oat. The only tank-mix partner to cause antagonism was 2,4-D. Wild oat control was reduced to 74% when 2,4-D was added to Achieve. The addition of ammonium sulfate to the Achieve + 2,4-D combination reduced the level of antagonism, and improved wild oat control.

SUMMARY:

Achieve provides outstanding wild oat control and crop safety provided that 2,4-D is not used as a tank-mix partner. The antagonism from 2,4-D can be reduced by the addition of ammonium sulfate.

FUTURE PLANS:

Continue to evaluate surfactants for postemergence wild oat herbicides.

## Montana State University ACHIEVE TANK MIX STUDY - 1995 EFFICACY TRIALS IN SPRING CEREALS TO SUPPORT U.S. REGISTRATIONS.

Project Code:95-ACHTANK  
Cooperator :ZENECA AG PRODUCTS/ORR

Location :KALISPELL, MT  
By:Bob Stougaard

Weed/Crop Code  
Rating Data Type  
Rating Unit  
Rating Date

BARLEY INJURY PERCENT 5-29-95	BARLEY INJURY PERCENT 6-13-95	WILD OAT CONTROL PERCENT 8-4-95	BARLEY YIELD BU/A 8-23-95	BARLEY TEST WT LB/BU 8-23-95
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Trt No	Treatment Name	Form	Fm Amt	Rate Ds	Rate Unit	Grow Stg	Appl Code	BARLEY INJURY PERCENT	BARLEY INJURY PERCENT	WILD OAT CONTROL PERCENT	BARLEY YIELD BU/A	BARLEY TEST WT LB/BU
1	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	0	12	96.7	96.7	60.6
1	TF8035		.5	% v/v	POST	A	A					
2	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	7	7	98.3	103.0	61.1
2	TF8035		.5	% v/v	POST	A	A					
2	BRONATE	4 EC	1.5	pt pr/A	POST	A	A					
3	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	8	8	98.0	97.2	60.1
3	TF8035		.5	% v/v	POST	A	A					
3	BUCTRIL	2 EC	2.0	pt pr/A	POST	A	A					
4	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	12	20	95.7	90.4	61.0
4	TF8035		.5	% v/v	POST	A	A					
4	MCPA ESTER	4 EC	.5	lb ai/A	POST	A	A					
5	ACHIEVE	40 WG	.25	lb ai/A	POST	A	A	0	13	98.3	97.5	59.4
5	TF8035		.5	% v/v	POST	A	A					
6	HOELON	3 EC	1.0	lb ai/A	POST	A	A	12	55	94.3	89.8	58.4
6	COC		1.0	pt pr/A	POST	A	A					
7	ASSERT	2.5 EC	.47	lb ai/A	POST	A	A	0	12	95.3	91.8	60.2
7	NIS		.25	% v/v	POST	A	A					
8	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	2	5	98.3	107.6	60.9
8	TF8035		.5	% v/v	POST	A	A					
8	AMMONIUM SULFA		1.5	lb ai/A	POST	A	A					
9	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	37	20	86.0	89.9	59.2
9	2,4-D ESTER	4 EC	.5	lb ai/A	POST	A	A					
9	TF8035		.5	% v/v	POST	A	A					
9	AMMONIUM SULFA		1.5	lb ai/A	POST	A	A					
10	ACHIEVE	40 WG	.18	lb ai/A	POST	A	A	30	12	74.3	76.3	58.7
10	2,4-D ESTER	4 EC	.5	lb ai/A	POST	A	A					
10	TF8035		.5	% v/v	POST	A	A					
11	ASSERT	2.5 EC	.23	lb ai/A	POST	A	A	2	15	93.0	90.7	61.7
11	AVENGE	64 SG	.50	lb ai/A	POST	A	A					
11	NIS		.5	% v/v	POST	A	A					
12	NONTREATED							0	0	0.0	31.4	53.0
LSD (.05) =								8	9	5.3	12.2	1.9
Standard Dev.=								4.51569	5.42720	3.14506	7.21566	1.09516
CV =								50.02	36.38	3.67	8.15	1.84
Block F								1.669	3.701	0.390	4.079	8.099
Block Prob(F)								0.2115	0.0412	0.6814	0.0311	0.0023
Treatment F								22.176	19.576	235.579	23.269	13.220
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001	0.0001

Montana State University  
ACHIEVE TANK MIX STUDY - 1995 EFFICACY TRIALS IN SPRING  
CEREALS TO SUPPORT U.S. REGISTRATIONS.

Code:95-ACHTANK Location :KALISPELL, MT  
Cooperator :ZENECA AG PRODUCTS/ORR By:Bob Stougaard

Site Description  
Crop: BARLEY Variety: GALLATIN Planting Date: 4-21-95  
Planting Method: PRESSDRILL Rate, Unit: 60 , LB/A Depth, Unit: 1.5 , "  
Perennial Age, Unit: , Row Spacing, Unit: 7 , "  
Soil Temp., Unit: , Soil Moisture: Emergence Date: 5-1-95

Plot Width/Area, Unit: 10 , FT Plot Length, Unit: 15 , FT Reps: 3  
Site Type: Seed Bed Desc.: Ground Cover: NONE  
Tillage Type: Study Design: RCB  
Field Preparation/Plot Maintenance: FALL PLOW; SPRING DISC AND CULTIVATE;  
PACKED PRIOR TO SEEDING; HARROWED AFTER WEED SEED SPREAD.

Soil Description  
Texture: SILT LOAM % OM: 3 % Sand: 50 % Silt: 40 % Clay: 10  
pH: 7.7 CEC: Soil Name: CRESTON S. L. Fertility Level:

Moisture Conditions

Overall Moisture Conditions: Favorable soil moisture throughout cropping season

Application Information

	A	B	C	D	E	F
Application Date:	5-22-95					
Time of Day:	3:00 P.M.					
Application Method:	BACKPACK					
Application Timing:	POST					
Air Temp., Unit:	72 ,F	,	,	,	,	,
% Relative Humidity:	26					
Wind Velocity, Unit:	0 2 ,MPH	,	,	,	,	,
Dew Presence (Y/N):	N					
Water Hardness:						
Soil Temp., Unit:	65 ,F	,	,	,	,	,
Soil Moisture:	DRY TOP					
% Cloud Cover:	99					

Weed Species	Weed Stage, Density at Application					
WILD OAT	4.5 ,LF	,	,	,	,	,
BARLEY	6 ,LF	,	,	,	,	,

Weed Species	Weed Stage at rating date"			
	5-29 6-13 8-4			
WILD OAT	5-7 LF 8" Mature			
BARLEY	1TLR 6-9" Mature			

Application Equipment

Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A. BACKPACK	2.5	FLATFAN	11002VS	14"	20"	10'	20	H20	20

Note: Achieve 40 WG did not readily dissolve in spray solution at 59 degree water temp ( 15-30 second shaking/agitation period necessary ).