

200  
PROJECT TITLE: Herbicide Combinations for Broadleaf Weed Control in Barley

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

OBJECTIVE:

To evaluate reduced rate, tank-mix herbicide applications for broadleaf weed control in barley.

RESULTS:

Although applications of Banvel and SAN 845H initially caused significant crop injury, the crop eventually recovered without suffering yield loss. Common lambsquarters was the most prevalent weed in this study and was easily controlled by all treatments evaluated. Tough failed to control wild buckwheat and shepherdspurse, whereas Banvel and San 845H treatments provided excellent control. There were no yield differences even though weed pressure was heavy.

SUMMARY:

Banvel in combination with reduced rates of Harmony Extra, 2,4-D, Tough, or Buctril, provided excellent broadleaf weed control. Banvel applications will need to be applied earlier in order to avoid crop injury.

FUTURE PLANS:

Continue to evaluate reduced herbicide rates for broadleaf weed control.

## Montana State University Banvel/Tankmix Combinations on Small Grains

Project Code: BANVEL  
Cooperator : Wayne Belles

Location : Kalispell, MT  
By: Bob Stougaard

Weed/Crop Code	BARLEY	BARLEY	LMBQTR	BUCKWHT	SHEPURSE	BARLEY
Rating Data Type	INJURY	INJURY	CONTROL	CONTROL	CONTROL	YIELD
Rating Unit	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	BU/A
Rating Date	5-29-95	6-13-95	6-13-95	6-13-95	6-13-95	8-22-95

Trt No	Treatment Name	Form	Fm	Rate	Unit	Grow Stg	Appl Code						
1	NON-TREATED							0	0	0	0	0	69.0
2	BANVEL	4	SL	.094	lb ai/A	P01	A	5	0	100	100	100	80.4
2	2,4-D DMA SALT	3.8	SL	.25	lb ai/A	P01	A						
2	HARMONY EXTRA	75	WG	.0078	lb ai/A	P01	A						
2	NIS	1	EC	.25	% v/v	P01	P						
3	BANVEL	4	SL	.094	lb ai/A	P01	A	13	3	100	100	100	78.4
3	2,4-D DMA SALT	3.8	SL	.25	lb ai/A	P01	A						
3	HARMONY EXTRA	75	WG	.0156	lb ai/A	P01	A						
3	NIS	1	EC	.25	% v/v	P01	P						
4	BANVEL	4	SL	.094	lb ai/A	P01	A	22	10	100	99	100	81.6
4	2,4-D DMA SALT	3.8	SL	.25	lb ai/A	P01	A						
4	TOUGH	3.75	EC	.47	lb ai/A	P01	A						
4	NIS	1	EC	.25	% v/v	P01	P						
5	BANVEL	4	SL	.094	lb ai/A	P01	A	17	3	100	98	100	81.1
5	2,4-D DMA SALT	3.8	SL	.25	lb ai/A	P01	A						
5	TOUGH	3.75	EC	.235	lb ai/A	P01	A						
5	NIS	1	EC	.25	% v/v	P01	P						
6	BANVEL	4	SL	.094	lb ai/A	P01	A	20	7	100	100	100	75.8
6	2,4-D DMA SALT	3.8	SL	.25	lb ai/A	P01	A						
6	BUCTRIL	2	EC	.25	lb ai/A	P01	A						
6	NIS	1	EC	.25	% v/v	P01	P						
7	BANVEL	4	SL	.094	lb ai/A	P01	A	17	2	100	96	100	78.7
7	2,4-D DMA SALT	3.8	SL	.38	lb ai/A	P01	A						
7	NIS	1	EC	.25	% v/v	P01	P						
8	SAN 845H	70	WP	.094	lb ai/A	P01	A	20	3	100	99	100	68.2
8	2,4-D DMA SALT	3.8	SL	.38	lb ai/A	P01	A						
8	NIS	1	EC	.25	% v/v	P01	P						
9	SAN 845H	70	WP	.094	lb ai/A	P01	A	22	0	100	99	100	83.4
9	WARRANT	85	WG	.38	lb ai/A	P01	A						
9	NIS	1	EC	.25	% v/v	P01	P						
10	TOUGH	3.75	EC	.47	lb ai/A	P01	A	3	7	99	0	20	74.8
10	NIS	1	EC	.25	% v/v	P01	P						

LSD (.05) =	8	8	1	3	19	12.7
Standard Dev.=	4.64479	4.44097	.641180	1.80842	10.9545	7.34442
CV =	33.58	126.88	0.71	2.29	13.36	9.52
Block F	2.588	2.408	1.541	0.581	1.000	10.783
Block Prob(F)	0.1028	0.1183	0.2412	0.5695	0.3874	0.0011
Treatment F	9.189	1.732	7260.189	1595.539	36.556	1.496
Treatment Prob(F)	0.0001	0.1535	0.0001	0.0001	0.0001	0.2309

NIS was Activator-90

202

Montana State University  
Banvel/Tankmix Combinations on Small Grains

Code: BANVEL Location : Kalispell, MT  
Cooperator : Wayne Belles 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 THROUGHOUT CROPPING SEASON

Application Information

	A	B	C	D	E	F
Application Date:	5-18-95					
Time of Day:	11:00 A.M					
Application Method:	BACKPACK					
Application Timing:	POST					
Air Temp., Unit:	61 ,F	,	,	,	,	,
% Relative Humidity:	50					
Wind Velocity, Unit:	0 2 ,MPH	,	,	,	,	,
Dew Presence (Y/N):	N					
Water Hardness:	N					
Soil Temp., Unit:	59 ,F	,	,	,	,	,
Soil Moisture:	GOOD					
% Cloud Cover:	50					

Weed Species	Weed Stage, Density at Application
WILD BUCKWHEAT	2 LF, 3/FT
LAMBSQUARTERS	6 LF, 3/FT
SHEPERDSPURSE	10LF, 2/FT
BARLEY	4-5LF

Application Equipment

Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A. BACKPACK	2.5	FLATFAN	110OVS	14"	20"	10'	20	H20	20

Weed Stage at rating dates:

	5-29-95	6-13-95
BARLEY	7 LEAF, 5"	E. BOOT
WILD BUCKWHEAT	6 LF, 4" TALL	, 5-7"
LAMBSQUARTER	10 LF, 5" TALL	, 8"
SHEPHERDSPURSE	15LF, 5" TALL	, 9"