2010 Research Report to the
Agricultural Research Foundation
and the
Oregon Processed Vegetable Commission

Title: Strategies and tools to establish wildlife habitat adjacent to agricultural land

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Background

Truitt Bros requires its farmers to meet Food Alliance standards. NORPAC, as of this season, is requiring that all their farmers meet their sustainability standards (previously sustainability certification was voluntary for NORPAC growers). Both Food Alliance and the NORPAC sustainability standards include a wildlife conservation component, which is one of the more difficult components for many processed vegetable growers to meet as few growers have expertise or experience.

Based on the experiences of Kenagy and Pearmine Farms, two farms with experience in establishing riparian borders and other conservation installations, one of the most important obstacles to the establishment and maintenance of conservation plantings is weed control. Cook Farm is currently working to meet the NORPAC standards; as part of their effort, they installed a riparian conservation planting of shrubs (ocean spray) and trees (alder and Doug fir) in March 2010 in cooperation with Theresa McGovern of Linn Co NRCS.

Objectives

1. Develop strategies to manage weeds in newly constructed wildlife habitat using registered and unregistered PRE and POST herbicides.
2. Pursue Special Local Need registration of promising herbicides if test results warrant advance.

Methods

Weed control plots were established in Dever Conner in a planting of Doug fir, ocean spray, and Oregon ash that was established in February. Herbicides treatments were applied on April 16. All herbicides were tankmixed with glyphosate. Plots were 20 by 20 and replicated one time in each species. Ocean spray and alder were protected with plastic cover because buds were close to opening. The entire plot was moved in October. Weed control and tree response was measured on July 2 and November 2.

Results

All treatments improved weed control substantially through July. By November control with simazine and rimsulfuron had dissipated and was similar to the untreated check. Chateau and Alion provided exceptional weed control through November. Trees in the Chateau treatment were the most healthy, but it is unclear whether this was a response to less competition or whether trees were less sensitive to this herbicide.

Table 1. Preemergence soil applied treatments tested in a newly planted wild-life habitat to reduce competition with Doug fir, ocean spray, and alder seedlings.

Herbicide	AI	Site of action	Product Rate	Notes , Buffers to water
Preemergence soil residual				
Pendulum Aquacap ie ie Prowl	Pendimethalin	3 Microtubule inhibitor	2 qt	none
Surflan AS Spec Herb	Oryzalin	3 Microtubule inhibitor	3 qt	none
Diuron	Diuron	5 PSII inhibitor 5	4 lbs	apply one year after trees planted
SureGuard (ie Chateau)	Flumioxazin	14 PPO inhibitor	12 oz	filter strips suggested
Tower (ie Outlook)	Dimethenamid-P	15 Long chain fatty acid inhibitor (LCFA)	32 oz	none on label; 35 ft to endangered species
Callisto*	Mesotrione	28 HPPD	6 oz	High potential for runoff, but low ecotox
Alion	Indaziflam	Unknown	5.1 oz	very good ecotox profile

Table 2. Weed control in a conservation planting of ocean spray, alder, and Douglas fir.

	PRE Herbicide	Product Rate	Rate		Form-ulation	Weed control										Tree/ shrub survival
						2-Jul					2-Nov					
						Lambs-quarters	Shepherds purse	Blackberry	Chickweed	Composite rating	Grasses	Cottonwood	Asteraceae	Chickweed	Composite rating	Average
			lb ai/A		*lbs/gal*	*%*										*%*
1	Pendulum Aquacap	2 qt	1.90		3.8	100	100	100	100	99	80	100	90	90	95	83
2	Surflan AS Spec Herb	3 qt	3.00		4	100	100	100	100	98	100	100	60	60	90	58
3	Direx	2 lbs	1.00		4	100	100	100	100	95	100	99	95	95	85	67
4	Chateau	12 oz	0.38		0.51	100	100	100	100	98	95	100	98	98	99	83
5	Buccaneer	0.66 qts	0.50	ae	3	80	100	10	0	70	100	0	50	50	30	58
6	Tower (ie Outlook)	32 oz	1.50		6	95	100	100	95	95	100	90	50	50	50	42
7	Callisto	6 oz	0.19		4	95	100	100	90	95	100	0	0	0	0	75
8	Alion	5.1 oz	0.07		1.67	95	100	100	90	95	100	100	98	98	95	67
9	Matrix	4 oz	0.06		0.25	0	100	100	100	90	0	0	0	0	0	75
10	Simazine	2 qt	2.00		4	0	80	100	80	60	0	0	0	0	0	75
11	Untreated check					-	-	-	-	-	-	-	-	-	-	75
	glyphosate tankmixed on all treatments (0.5 ae/A)															