

# Indaziflam for Downy Brome and Ventenata Management

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Smoot Hill near Pullman, WA

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## Methods

The study was established at Smoot Hill near Pullman, WA. The goal of the study was to evaluate indaziflam for control of annual grasses (downy brome, *Bromus tectorum* and *Ventenata dubia*) and annual broadleaves (mustards, *Brassica* spp. and prickly lettuce, *Lactuca serriola*) in the Palouse prairie. Treatments were applied in the winter prior to perennial grasses breaking dormancy (PRE) as a broadcast foliar application, detailed in Table 1 and Table 2. The study was conducted in a randomized complete block with 4 replications. Plots were 10 ft by 30 ft long.

Weed control was visually assessed 98, 137 and 253 days after treatment (DAT) (Table 2). All data were subjected to an analysis of variance using the statistical package built into the Agricultural Research Manager software system (ARM 8.5.0, Gylling Data Management).

## Results

Indaziflam applied at any application rate or formulation provided significantly greater annual grass and broadleaf weed control compared to the nontreated control. Significant differences between treated plots and the non-treated control became more defined over time from the initial treatment until the final assessment 253 DAT. Greater control of downy brome and ventenata as well as broadleaf species was observed in the later assessments conducted in August and November when compared to the assessment conducted in June. Tables 2, 3 and 4. The observed pattern was a reduction in the density of population downy brome and ventenata amongst native perennial grasses.

**Table 1. Treatment application details**

<b>Study Application</b>	<b>A</b>
Date	Feb 25, 2016
Application volume (GPA)	15
Air temperature (°F)	54
Soil temperature (°F)	40
Wind velocity (mph, direction)	5, E

**Table 2. Percent weed control of various species following application of indaziflam at different application rates and formulations. Ratings taken June 2, 2016. Pullman, WA, 2016. Means followed by the same letter are not statistically significantly different ( $\alpha=0.05$ ).**

Treatment	Application Code	Rate	June 2, 2016			
			Ventenata Control	Brome Control	Mustard Control	P. Lettuce Control
			%	%	%	%
Nontreated	-	-	0 a	0 a	0 a	0 a
Esplanade	A	5 fl oz/A				
Roundup WeatherMax	A	12 fl oz/A	73 b	85 b	45 ab	51 bc
Induce (NIS)	A	0.25% v/v				
Esplanade	A	7 fl oz/A				
Roundup WeatherMax	A	12 fl oz/A	96 c	98 b	91 b	83 b
Induce (NIS)	A	0.25% v/v				
Rezilon	A	3 oz/A				
Induce (NIS)	A	0.25% v/v	100 c	89 b	65 b	38 ab
Rezilon	A	4 oz/A				
Induce (NIS)	A	0.25% v/v	100 c	91 b	66 b	28 ab
Indaziflam+Rimsulfuron	A	4.5 oz/A				
Induce (NIS)	A	0.25% v/v	100 c	92 b	58 b	46 bc
Indaziflam+Rimsulfuron	A	6 oz/A				
Induce (NIS)	A	0.25% v/v	100 c	94 b	90 b	61 bc
Plateau 2L	A	7 fl oz/A				
Induce (NIS)	A	0.25% v/v	100 c	85 b	91 b	30 ab
Plateau 2L	A	12 fl oz/A				
Induce (NIS)	A	0.25% v/v	54 d	79 b	0 a	0 a

**Table 3.** Percent weed control of various species following application of indaziflam at different application rates and formulations. Ratings taken August 19, 2016. Pullman, WA, 2016. Means followed by the same letter are not statistically significantly different ( $\alpha=0.05$ ).

Treatment	Application Code	Rate		Aug. 19, 2016				
				Ventenata Control	Brome Control	Mustard Control	P. Lettuce Control	Medusa Head Control
				%	%	%	%	%
Nontreated	-	-	-	0 a	0 a	0 a	0 a	0 a
Esplanade	A	5 fl oz/A	0.065					
Roundup WeatherMax	A	12 fl oz/A	0.420	72 b	97 b	100 b	97 b	99 b
Induce	A	0.25% v/v						
Esplanade	A	7 fl oz/A	0.091					
Roundup-WeatherMax	A	12 fl oz/A	0.420	99 b	99 b	100 b	95 b	100 b
Induce (NIS)	A	0.25% v/v						
Rezilon	A	3 oz/A	0.047	99 b	99 b	100 b	93 b	100 b
Induce (NIS)	A	0.25% v/v						
Rezilon	A	4 oz/A	0.0625	75 b	98 b	100 b	94 b	100 b
Induce (NIS)	A	0.25% v/v						
Indazaflam+Rimsulfuron	A	4.5 oz/A	0.118	96 b	100 b	100 b	94 b	95 b
Induce	A	0.25% v/v						
Indazaflam+Rimsulfuron	A	6 oz/A	0.157	96 b	100 b	100 b	88 b	100 b
Induce	A	0.25% v/v						
Plateau 2L	A	7 fl oz/A	0.109	97 b	100 b	100 b	85 b	100 b
Induce	A	0.25% v/v						
Plateau 2L	A	12 fl oz/A	0.420	97 b	100 b	100 b	92 b	100 b
Induce	A	0.25% v/v						

**Table 4.** Percent weed control of various species following application of indaziflam at different application rates and formulations. Ratings taken November 22, 2016. Pullman, WA, 2016. Means followed by the same letter are not statistically significantly different ( $\alpha=0.05$ ).

Treatment	Application Code	Rate		Nov. 22, 2016				
				Ventenata Control	Brome Control	Mustard Control	P. Lettuce Control	Medusa Head Control
				%	%	%	%	%
Nontreated	-	-	-	0 a	0 a	0 a	0 a	0 a
Esplanade	A	5 fl oz/A	0.065					
Roundup WeatherMax	A	12 fl oz/A	0.420	97 b	99 b	100 b	96 b	100 b
Induce	A	0.25% v/v						
Esplanade	A	7 fl oz/A	0.091					
Roundup WeatherMax	A	12 fl oz/A	0.420	100 b	100 b	100 b	87 b	100 b
Induce	A	0.25% v/v						
Rezilon	A	3 oz/A	0.047	100 b	100 b	100 b	92 b	100 b
Induce	A	0.25% v/v						
Rezilon	A	4 oz/A	0.0625	98 b	100 b	100 b	90 b	100 b
Induce	A	0.25% v/v						
Indazaflam+Rimsulfuron	A	4.5 oz/A	0.118	100 b	100 b	100 b	96 b	98 b
Induce	A	0.25% v/v						
Indazaflam+Rimsulfuron	A	6 oz/A	0.157	100 b	100 b	100 b	94 b	100 b
Induce	A	0.25% v/v						
Plateau 2L	A	7 fl oz/A	0.109	100 b	100 b	100 b	87 b	100 b
Induce	A	0.25% v/v						
Plateau 2L	A	12 fl oz/A	0.420	96 b	99 b	100 b	98 b	100 b
Induce	A	0.25% v/v						

**Some of the pesticides discussed in this presentation were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance.**