

# Herbicide Efficacy and Crop Safety of Affinity Broadspec and Aim EC for Broadleaf Weed Control in Spring Wheat

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The study objective was to evaluate broadleaf weed control and crop response to Affinity Broadspec® (thifensulfuron + tribenuron; group 2 + 2) and Aim® EC (carfentrazone; group 14) applied to spring wheat with other broadleaf herbicides. Tumble mustard (SSYAL) and common lambsquarters (CHEAL) were the primary weeds present in the study.

The study was established at the WSU Wilke Farm near Davenport, WA. Treatments were applied postemergence to spring wheat at Feekes 6; detailed in Table 1 and Table 2. Treatments were applied with a CO<sub>2</sub> powered backpack sprayer and a 5-ft boom with 4 Teejet 11002VS nozzles, calibrated to deliver 15 gallons per acre (GPA). The study was conducted in a randomized complete block design with 4 replications of 10 ft by 30 ft long plots.

Broadleaf weed control was visually rated 2, 6, and 8 weeks after treatment (WAT). Crop injury (chlorosis and leaf bleaching) were rated 2 WAT. All plots were harvested using a 5 ft wide plot combine on August 22, 2019. All data was 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).



**Figure 1.** Leaf bleaching on spring wheat present in Huckie + MCPA ester treatment 2 WAT.

**Table 1.** Treatment application details for ICB2119

Study Application	Application
Date	June 12, 2019
Application volume (GPA)	10
Crop Stage	1 <sup>st</sup> node
Air temperature (°F)	73
Soil temperature (°F)	52
Wind velocity (mph, direction)	4.5, NE
Cloud Cover	50

## Results

No significant crop chlorosis was observed 2 WAT.

Leaf bleaching was present on spring wheat plots treated with Huskie® (14%), compared to all other plots which had 0-1% leaf discoloration (Table 2).

At 2 WAT, for all treatments, except Starane Flex® alone (55%), control of common lambsquarters (CHEAL) and tumble mustard (SSYAL) was greater than 85%. By 6 WAT, there were no differences in the observed control of CHEAL and SSYAL for any treatment, although Starane Flex alone had the lowest control at 76% CHEAL and 88% SSYAL. Similar results were observed at 8 WAT (Table 2).

Yields were similar to the nontreated. However, the nontreated control yielded the lowest (23 bu A<sup>-1</sup>) concluding all treatments improved yield by reducing broadleaf weed pressure. Starane Flex + Affinity Broadspec (37 bu A<sup>-1</sup>) and Brox® 2EC + Aim 2EC + Affinity Broadspec (34 bu A<sup>-1</sup>) had the highest yields (Table 2).

**Table 2.** Percent broadleaf control, crop chlorosis, and leaf bleaching, and yield for spring wheat following application of Affinity Broadspec, Aim 2EC, Talinor, Brox® 2EC, and Starane Flex for broadleaf weed control. Davenport, WA, 2019. Means followed by the same letter are not significantly different ( $\alpha=0.05$ ).

Treatment	Field Rate	lb ai/A	June 25, 2019 (2 WAT)			July 25, 2019 (6 WAT)		August 9, 2019 (8 WAT)	August 22, 2019
			Broadleaf Control	Crop Chlorosis	Leaf Bleaching	CHEAL Control	SSYAL Control	Broadleaf Control	Yield
			%	%	%	%	%	%	bu A <sup>-1</sup>
Nontreated	-	-	-	-	-	-	-	-	23
CoAct+ Talinor NIS	2.75 fl oz/A 13.7 fl oz/A 0.25% v/v	0.0332	79 a	0	0 b	100	100	98	31
CoAct+ Talinor Aim 2EC NIS	2.75 fl oz/A 13.7 fl oz/A 0.5 fl oz/A 0.25% v/v	0.0332 0.0002	89 a	0	4 b	100	98	98	31
CoAct+ Talinor Aim 2EC Affinity Broadspec NIS	2.75 fl oz/A 13.7 fl oz/A 0.5 fl oz/A 1 oz/A 0.25% v/v	0.0332 0.0002 0.0156	93 a	0	1 b	100	100	99	30
Brox 2EC Aim 2EC Affinity Broadspec NIC	24 fl oz/A 0.5 fl oz/A 1 oz/A 0.25% v/v	0.3750 0.0002 0.0156	88 a	1	1 b	98	85	94	34
Brox 2EC Affinity Broadspec NIC	24 fl oz/A 1 oz/A 0.25% v/v	0.3750 0.0156	79 a	5	0 b	100	95	97	28
Starane Flex Affinity Broadspec NIS	13.5 fl oz/A 1 oz/A 0.25% v/v	0.0880 0.0156	81 a	4	0 b	100	100	98	37
Starane Flex Aim 2EC Affinity Broadspec NIS	13.5 fl oz/A 0.5 fl oz/A 1 oz/A 0.25% v/v	0.0880 0.0002 0.0156	94 a	5	0 b	94	100	99	32
Starane Flex NIS	13.5 fl oz/A 0.25% v/v	0.0880	55 b	0	0 b	76	88	84	28
Huskie MCPA Ester NIS	13.5 fl oz/A 1 pt/A 0.25% v/v	0.0327 0.4620	95 a	0	14 a	100	100	98	28
Brox-M Affinity Broadspec NIS	14 fl oz/A 1 oz/A 0.25% v/v	0.2190 0.0156	94 a	3	0 b	100	100	98	32
		<i>LSD</i>	10.75	NS	3.25	NS	NS	NS	NS