

ADJUVANT CLASS SCREENING WITH PROPOXYCARBAZONE FOR CONTROL OF DOWNY BROME. Angela J. Kazmierczak and Kirk A. Howatt, Graduate Research Assistant and Associate Professor, Department of Plant Sciences, North Dakota State University, Fargo, ND 58105.

Adjuvants can enhance activity of herbicides to achieve better weed control. Achieving this improved weed control can depend on the adjuvant class, herbicide, or target weed species. Greenhouse experiments were established to evaluate which adjuvant class provides the greatest enhancement of activity with propoxycarbazone when applied to downy brome. Herbicide treatments were applied to downy brome with two-tillers. Treatments included propoxycarbazone at 30 g/ha with one of nine different adjuvants representing different classes. Downy brome was evaluated 21 and 35 d after treatment. Plants were harvested 35 d after treatment and fresh and dry weights were recorded. All treatments provided better than 70% control 21 d after treatment and greater than 68% control 35 d after treatment. Methylated seed oil (MSO), methylated seed oil basic pH blend, and methylated seed oil with nitrogen source provided greater than 82% control at 21 d and 85% control 35 d after treatment. Fresh weights for the above mentioned treatments were reduced by 96% when compared to the control. Petroleum oil concentrate and surfactant with nitrogen provided only 70 to 72% control at both evaluation timings although fresh weights were reduced by as much as 92%. Overall, the addition of an adjuvant system that included a MSO component provided greater control when compared to the other treatments.