DEPOSITION ADJUVANTS FOR ENHANCING DOWNY BROME AND WILD OAT CONTROL. Michael H. Ostlie and Kirk A. Howatt, Graduate Student and Associate Professor, Department of Plant Sciences, North Dakota State University, Fargo, ND 58105.

Deposition aids primarily are used to control spray particle size and to reduce the amount of spray drift. Studies were conducted with wild oat and downy brome to determine if using a deposition aid will enable increased activity under adverse conditions. To account for this, studies were established to compare the three-fourths rate of an herbicide with and without a deposition aid with the full rate of the herbicide with and without a deposition aid. Herbicides evaluated in field studies were propoxycarbazone, propoxycarbazone + mesosulfuron, and fenoxaprop for wild oat control; propoxycarbazone + mesosulfuron, and flucarbazone were used for downy brome control. Adding a deposition aid to fenoxaprop at the three-fourths rate increased wild oat control to 85% compared with 76% without the deposition aid. For downy brome control, adding a deposition aid tended to increase activity with the full rate of flucarbazone. In the greenhouse, propoxycarbazone, flucarbazone, sulfosulfuron, propoxycarbazone + mesosulfuron, imazamox, fenoxaprop (for wild oat only), and clethodim (for downy brome only) were applied to seedling grasses. Sulfosulfuron activity generally was increased by the use of a deposition aid in both wild oat and downy brome, with wild oat control improved by up to 24 percentage points. There was little difference in herbicide activity when applying at a three-fourths rate plus deposition aid versus a standard rate without deposition aid, while the three-fourths rate of herbicides with deposition aid also tended to increase activity in wild oat over three-fourths rate without deposition aid.

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