DUST AFFECTS GLYPHOSATE EFFICACY ON EASTERN BLACK AND HAIRY NIGHTSHADE. Jingkai Zhou and Calvin G. Messersmith, Department of Plant Sciences, North Dakota State University, Fargo, ND 58105.

Glyphosate is one of the most frequently used herbicides in the world. Adsorption on soil is one important property of this herbicide, which essentially inactivates on contact glyphosate. Weeds in the field are regularly covered with dust to some extent, which may decrease glyphosate efficacy. Greenhouse experiments were conducted to evaluate the effect of dust on efficacy of glyphosate on eastern black and hairy nightshade. Glyphosate efficacy decreased when dust accumulated on leaves, and the effect was greater from clay than loam dust. Dust pH did not influence the decrease of glyphosate efficacy. The adverse effect of dust on glyphosate efficacy was more on hairy nightshade than on eastern black nightshade. Ammonium sulfate, nonionic surfactant, and silicone surfactant adjuvants partially overcame the adverse effect of dust to glyphosate for eastern black and hairy nightshade control, which was silicone surfactant > nonionic surfactant ≥ ammonium sulfate.

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