

FACTORS AFFECTING SPRAY DISTRIBUTION AND COVERAGE. Gregory K. Dahl, Joe V. Gednalske, and Eric Spandl Research Manager, Manager of Product Development and Agronomist, Winfield Solutions LLC, St. Paul, MN 55164.

The demand for reducing risks from herbicides has focused attention on reducing off target movement of herbicides with drift reducing technologies (DRT). It is important to minimize spray drift, but it is equally important to make sure that the herbicide performs satisfactorily. Many technologies were used to evaluate changes in spray distribution and drift reduction. Spray droplet size was the most important factor influencing spray drift.

Field studies and laser droplet analysis were done with various nozzle types, sizes and spray pressures. Spray mixtures included water alone or glyphosate, glufosinate and other herbicide mixtures. A modified vegetable oil deposition aid and drift control adjuvant or a guar-type adjuvant was added to the water or herbicide mixtures. Spray patterns were recorded with a high-speed video camera and played back in slow motion to demonstrate droplet distribution and movement. Field evaluations were done by applying treatments in windy conditions and measuring distance of movement downwind.

Nozzles, spray mixtures, and wind significantly impacted results. The proper nozzle and a drift reducing adjuvant significantly reduced the amount of fine droplets.