APPLICATOR'S GUIDE TO SPRAY DROPLET SIZE, DRIFT, NOZZLE SELECTION, AND SPRAY COVERAGE

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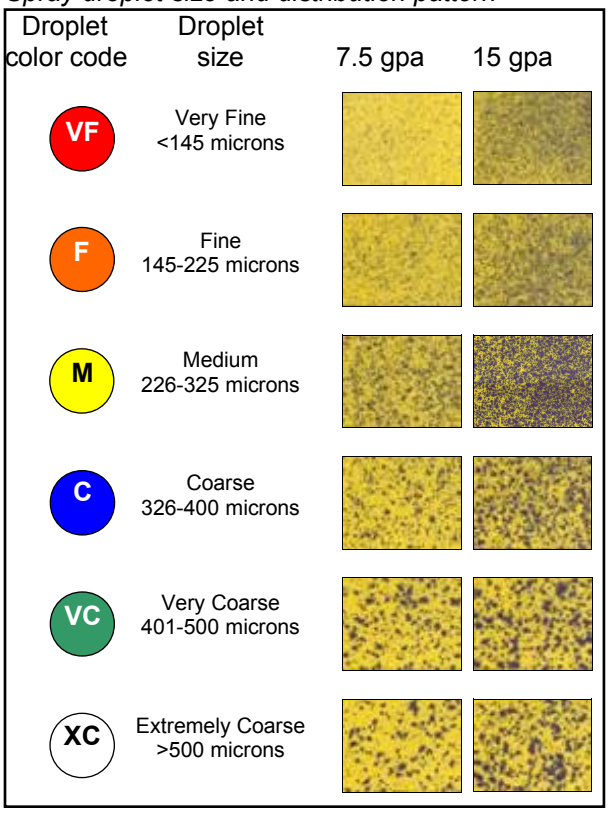
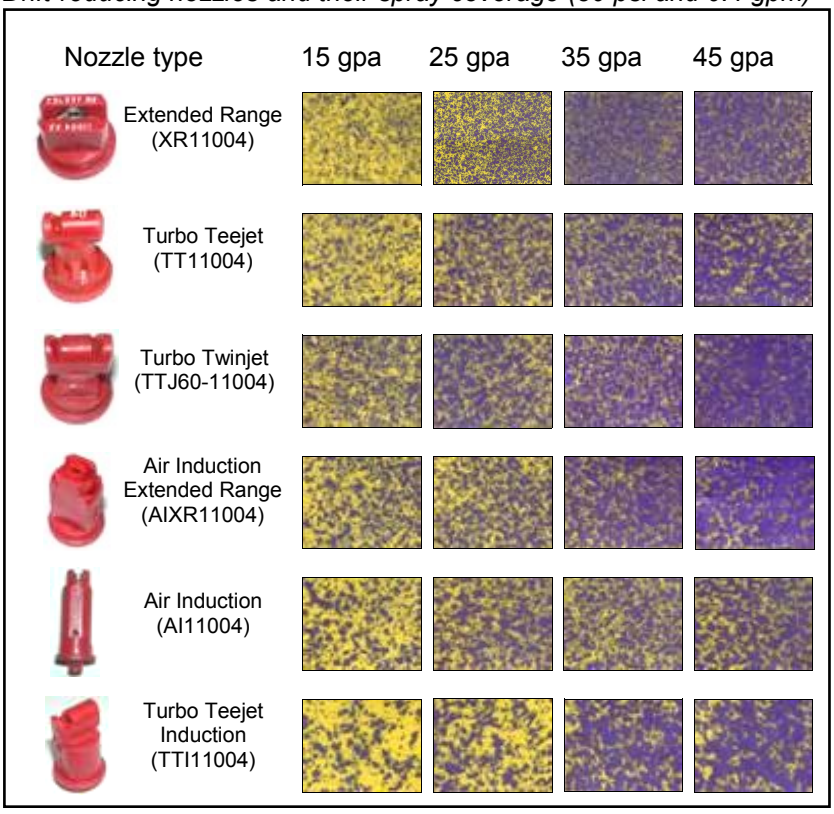
Successful weed control with herbicides hinges on the ability to apply weed sprays accurately, uniformly, and efficiently. Spraying with minimal drift and adequate coverage are important factors that influence herbicide performance and must be considered. Spray drift is the physical movement of spray particles through the air from the application site to an area where the treatment is not intended, usually resulting in non-target plant injury. Spray droplet size has the greatest influence on spray drift potential. Spray droplets <200 microns in diameter are light, remain airborne a long time, and are the most prone to drift, so should be avoided when using herbicides. Spray droplet size also influences spray coverage. Generally, as spray droplet size increases, spray coverage decreases. As a general rule, select nozzles, tip sizes, and operating pressures that produce large enough spray droplets (at least medium-sized) that reduce the risk of drift, while giving adequate coverage for the herbicide type (contact, systemic, or preemergent) used. Examples of different types of drift-reducing nozzles and the spray coverage they produce at different spray volumes are shown below. Also, spray when conditions are favorable and make sure spray tips are functioning properly.

Spray droplet size and distribution pattern



Drift-reducing nozzles and their spray coverage (30 psi and 0.4 gpm)



Application and environmental conditions affecting drift

Application factor	Favors less drift	Favors more drift
Spray droplet size	>225 microns	<225 microns
Spray height	Lower	Higher
Spray pressure	Lower	Higher
Spray tip angle	≤80°	>80°
Travel speed (mph)	<6	>6
Environment factor	Favors less drift	Favors more drift
Wind speed (mph)	3 to 7	0 to <3, or >7
Air temperature	<85 °F	>85 °F
Relative humidity	Higher (humid)	Lower (dry)
Air stability	Vertical mixing	Inversion layer

Spray tip delivery is critical for uniformity in coverage