

NOZZLE TYPES and SUGGESTED USES

Nozzle Type	Spray Pattern	Pressure (psi)	Suggested Use(s)
Flat fan	Fan-like pattern of medium droplet size. Not uniform across the pattern, overlap required	20-40 (15-40 psi for LP nozzle)	Pre or Post broadcast booms. Numerous types available. 30% overlap of spray pattern required for uniform coverage.
Even Fan	Fan-like pattern similar to flat fan, except volume is uniform across the entire width.	20-40	Pre and postemergence. Good for banding.
Flooding Fan	Wide, flat pattern of coarse droplets.	10-30	Broadcast applications. Good for chemical-fertilizer mixtures or layby. Requires 100% overlap.
Off-center flat fan	Flat fan pattern. Directed to one side of tip. Swath width of 12 to 144 inches.	20-40	Post-directed, low profile spraying.
Large off-center flat fan	Swath width directed to one side from 12 to 33 feet wide.	30-40	Herbicide application to ditches and roadsides.
Cone	Circular with heavy concentration of droplets on outside of pattern.	40-60	Good coverage of foliage. Insecticides, fungicides, and growth regulator applications.
Whirl chamber	Hollow cone pattern.	5-20	Incorporation equipment.
Rotary atomizers	Flat plane similar to hollow cone. More uniform droplet size.	Device dependent	Low volume applicators.
Boomless nozzle cluster	Wide swath up to 60 feet. Pattern easily distorted by wind. High spray trajectory.	20-40	Pastures and broadcast sprayers where obstructions to booms exist.

RECOMMENDED PROCEDURES for REDUCING PESTICIDE DRIFT¹

Recommended Procedure	Example	Explanation
Select a nozzle that produces coarse droplets	Raindrop, wide-angle full cone, flooding.	Use droplets as large as practical to provide necessary coverage.
Use the lower end of the pressure range.	Use 20 to 40 psi for Raindrop; less than 25 for other types.	Higher pressures generate more small droplets, increasing drift potential.
Lower the boom height.	Use as low a boom height as possible to maintain uniform distribution.	Wind speed increases with height. Lowering boom height a few inches can reduce off-target drift.
Increase the nozzle size.	If normal spray volume is 15 to 20 gpa, increase to 25 to 30 gpa.	Larger capacity nozzles reduce off-target deposits.
Spray when wind speeds are less than 10 mph and moving away from sensitive plants.	Leave a buffer zone if sensitive plants are downwind. Spray buffer zones when wind speed is lower.	More of the spray volume moves off-target as wind increases.
Do not spray when the air is completely calm.	Absolutely calm air generally occurs in early morning or late afternoon.	Absolutely calm air reduces air mixing, and spray can move slowly downwind.
Use drift-control additive when needed.	Several long-chain polymers are available.	Drift-control additives increase the average droplet size produced by the nozzle.

¹Prepared by the University of Illinois Cooperative Extension Service