Selecting the Right Spray Tip

The following chart has been designed to simplify selection of the correct spray tip type for the agrochemical to be applied. It is based on having good conditions for spraying and should be used in conjunction with the agrochemical manufacturer's label. Increased carrier rates may allow for coarser sprays to reduce risk of drift. Always follow the agrochemical label exactly.

Section	Code	Spray Tp	Common Use	Pattern	Technology	Orifice Material	Nominal Spray Angle	Pressure Range		ASABE Droplet Classificcation							
								PSI	BAR	XF	VF	F	M	C	VC	XC	UC
Broadcast	ULD	Ultra Lo-Drift	Weeds	Tapered Flat Fan	Air Induction	Polyacetal	120°	15-115	1-8								
	DB	Drift Beta	Weeds	Tapered Flat Fan	Air Induction	Polyacetal	120°	20-90	1.5-6								
	GAT	GuardianAIR Twin	Plant Health	Tapered Flat Fan	Air Induction	Polyacetal	110°	30-115	2-8								
	GA	GuardianAIR	Plant Health	Tapered Flat Fan	Air Induction	Polyacetal	110°	15-115	1-8								
	GRD	Guardian	Plant Health	Tapered Flat Fan	Pre-Orifice	Polyacetal	120°	15-115	1-8								
	LD	Lo-Drift	Plant Health	Tapered Flat Fan	Pre-Orifice	Polyacetal	80°, 110°	15-70	1-5								
	VP	Variable Pressure	General	Tapered Flat Fan	Elliptical Orifice	Polyacetal	80°, 110°	15-70	1-5								
	VPT	VPTech	General	Tapered Flat Fan	Elliptical Orifice	Polyacetal	80°, 110°	15-70	1-5								
	TR	Total Range	General	Tapered Flat Fan	Elliptical Orifice	Stainless Steel	80°, 110°	15-70	1-5								
	F	FanTip	General	Tapered Flat Fan	Elliptical Orifice	Polyacetal	80°, 110°	30-60	2-4								
	AVI	Air Injected Anti-Drift	Weeds	Tapered Flat Fan	Air Induction	Ceramic	80°, 110°	30-100	2-7								
	ATW	Air Injected Twin Fan	Plant Health	Tapered Flat Fan	Air Induction	Ceramic	110°	40-100	3-7								
	ADI	Drift Reduction	Plant Health	Tapered Flat Fan	Air Induction	Ceramic	110°	30-70	2-5								
	AXI	Wide Range Fan	General	Tapered Flat Fan	Elliptical Orifice	Ceramic	80°, 110°	20-70	1-5								
Wide	HF	Hi-Flow	Fertilizer	Tapered Flat Fan	Pre-Orifice	Polyacetal	140°	20-80	1.5-6								
	DT	DeflecTip	Weeds & Fertilizer	Flood	Deflection	Polyacetal	80°-160°	10-60	1-4								
	APM	Wide Angle Flood	Weeds & Fertilizer	Flood	Deflection	Ceramic	80°-160°	10-60	1-4								
Stream	ESI	Six Stream	Fertilizer	Streams	Pre-Orifice	Ceramic or Polyacetal	110° Equivalent	15-60	1-4							S	
	CM	Fanjet 0°	Fertilizer	Stream	Round Orifice	PVDF	0°	15-60	1-4							S	
	DC	Flow Regulating Disc	Fertilizer	Stream	Round Orifice	Polyacetal	0°	10-150	1-10							S	
	AMT	Flow Regulating Disc	Fertilizer	Stream	Round Orifice	Ceramic	0°	10-725	1-50							S	
Banding & Directed	DC/CR	SwirlTip Disc/Core	Plant Health	Hollow Cone	Swirl	Polyacetal	25°-110°	10-150	1-10								
	DCC/CRC	Disc and Core	Plant Health	Hollow Cone	Swirl	Ceramic	13°-93°	10-300	1-20								
	HCX	HollowTip Hollow Cone	Plant Health	Hollow Cone	Swirl	Polyacetal	80°	40-150	3-10								
	ATR	Hollow Cone	Plant Health	Hollow Cone	Swirl	Ceramic	80°	40-350	3-24								
	HCA	Hollow Cone	Plant Health	Hollow Cone	Swirl	Ceramic	80°	40-350	3-24								
	TVI	Hollow Cone	Plant Health	Hollow Cone	Air Induction	Ceramic	80°	70-360	5-25								
	AVI	Air Injected Anti-Drift	Plant Health	Tapered Flat Fan	Air Induction	Ceramic	80°	40-350	3-24								
	AXI	Wide Range Fan	Plant Health	Tapered Flat Fan	Elliptical Orifice	Ceramic	80°	40-350	3-24								
	FCX	Full Cone	Plant Health	Full Cone	Swirl	Polyacetal	80°	15-150	1-10								
	DCC/CRC	Disc and Core	Plant Health	Full Cone	Swirl	Ceramic	14°-71°	10-300	1-20								
	E	FanTip Even Flat	Weeds	Even Flat Fan	Elliptical Orifice	Polyacetal	80°	30-60	2-4								
	OC	Off-Center Flat	Unspecialized	Off-Center Fan	Elliptical Orifice	Brass	80°	30-60	2-4								
	OCI	Off-Center Ceramic	Unspecialized	Off-Center Fan	Elliptical Orifice	Ceramic	80°	30-60	2-4								
	AVI-OC	Air Injected Off-Center	Weeds	Off-Center Fan	Air Induction	Ceramic	80°	40-100	3-7								
Special	XT	Boom X Tender	Weeds	Boomless Fan	Pre-Orifice	Stainless or Polyacetal	105°	30-60	2-5								
	ACID F	FanTip	Acid Defoliants	Tapered Flat Fan	Elliptical Orifice	PVDF	110°	30-60	2-4								
	ACID LD	Lo-Drift	Acid Defoliants	Tapered Flat Fan	Pre-Orifice	PVDF	110°	30-60	2-4								
	MISTING	F, HAF, PF, AFD, AF	Cooling & Humidification	Fan or Hollow Cone	Elliptical Orifice or Swirl	Polyacetal	65°-110°	40-150	3-10								
	E	Even	Knapsack	Even Flat Fan	Elliptical Orifice	Polyacetal	80°	15-45	1-3								
	DT/AN	Deflect Tip/PoliJet	Knapsack	Flood	Deflection	Polyacetal	53.-127°	15-45	1-3								

S These nozzles produce streams to minimize atomization

Color Code	Classification
XF	Extremely Fine
VF	Very Fine
F	Fine
M	Medium
C	Coarse
VC	Very Coarse
XC	Extremely Coarse
UC	Ultra Coarse

ASABE S572.1 Droplet Size Classification

The American Society of Agricultural and Biological Engineers (ASABE) developed the ASABE S572.1 standard to measure and interpret spray quality from tips.

Spray Quality*	Size of Droplets	VMD Range (Microns**)	Color Code	Retention on Difficult to Wet Leaves	Drift Potential
Extremely Fine	Small	<60	Purple	Excellent	High
Very Fine		61-105	Red	Excellent	
Fine		106-235	Orange	Very Good	
Medium		236-340	Yellow	Good	
Coarse		341-403	Blue	Moderate	
Very Coarse		404-502	Green	Poor	
Extremely Coarse		503-665	White	Very Poor	
Ultra Coarse	Large	>665	Black	Very Poor	Low

The ASABE S572.1 standard uses eight droplet classification categories, six of which are common for agriculture and horticulture: Very Fine, Fine, Medium, Coarse, Very Coarse and Extremely Coarse. Most agrochemical applications recommend a fine, medium, or coarse spray.

Fine sprays provide enhanced retention for directed spraying on the target including:

- Foliar-acting weed control
- Contact-acting fungicides and insecticides

Medium sprays are the most widely used spray type.

- Used by default by most applicators when spray quality is not defined by the label.
- Systemic-acting fungicides, insecticides and herbicides.

Coarse sprays are used with systemic, residual, and soil-applied herbicides.