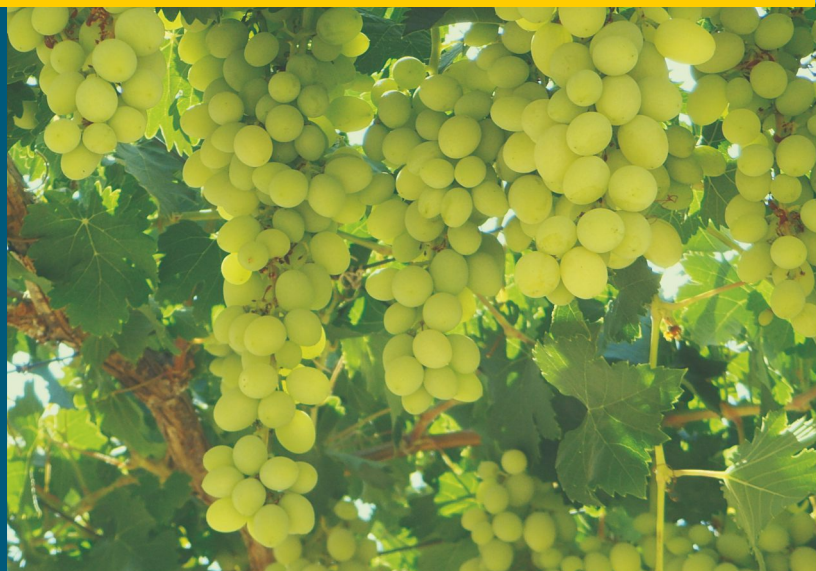


ELECTROSTATIC SPRAYERS

Latest Spray Technology from USA



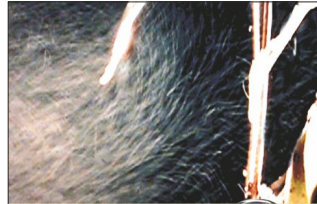
ESS MaxCharge™ Electrostatic Sprayers



The Air Assisted Sprayer delivers a high speed stream of charged droplets 15-20 feet from the nozzle. These directed spray droplets give a complete coverage to the spray target. Penetration within the canopy, deposition and underleaf coverage are greatly improved.

What is an 'Electrostatic Sprayer'?

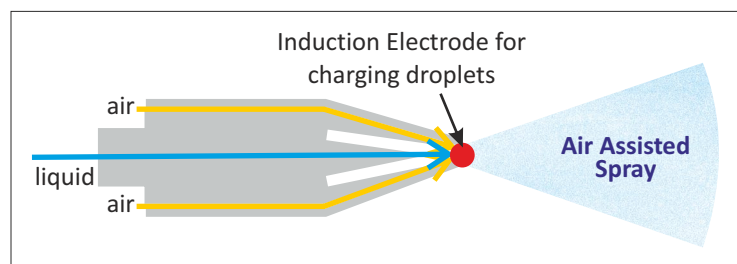
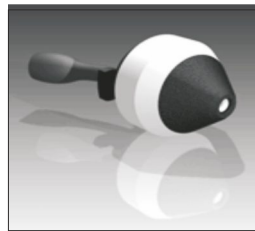
Electrostatic Spraying Systems (ESS) sprayer produces negatively charged spray droplets. Unlike electrical charges (-ve / +ve) attract each other. Due to -ve electrical charge on the surface of the spray droplet they are attracted to the +vely charged target. Charged spray droplets wrap around and coat all sides of the object.



Photograph showing Electrostatic charged droplets reversing direction, against gravity, towards underside of leaf.

The ESS MaxCharge™ Nozzle and it's working.

- ◆ The heart of the ESS sprayer system is the MaxCharge™ 'embedded' induction charging system.
- ◆ Air and liquid enter separately at the rear of the nozzle. The air moves at near-sonic speed through the nozzle and impacts the liquid at the tip, this causes the formation of optimum size spray droplets
- ◆ As the spray is atomized, the droplets pass by the electrode inside the nozzle. Electrons are induced onto the liquid stream and the droplets leave the nozzle with a high negative charge.
- ◆ The droplets are carried in an air stream towards the target. The closer the charged droplets get to the

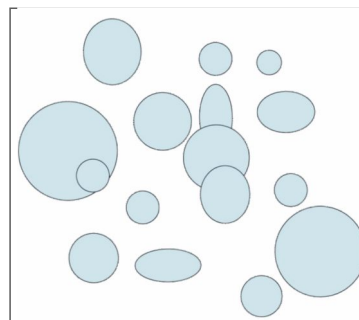


target, the stronger the electrostatic forces of attraction.

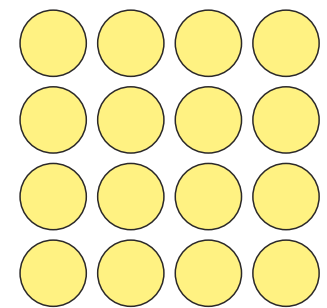
- ◆ Charged droplets travels long distances without losing the charge. The droplets follow electrical field lines of force and wrap around the target. Once droplets hit the target they immediately lose the electrical charge.
- ◆ Small (=30-40 microns) droplets having high charge have strong electrostatic attraction towards the plant surface. The droplets can reverse direction of flow and move upward against gravity to coat the underleaf and hidden surfaces.

Features of ESS Electrostatic Sprayers

- ◆ Fairly Uniform droplet size of 30-40 micron
- ◆ High Charging Level of 6 mC/lit



Conventional Sprayers, Uncharged droplets are attracted to each other, coalescing to form even larger droplets leading to run off.

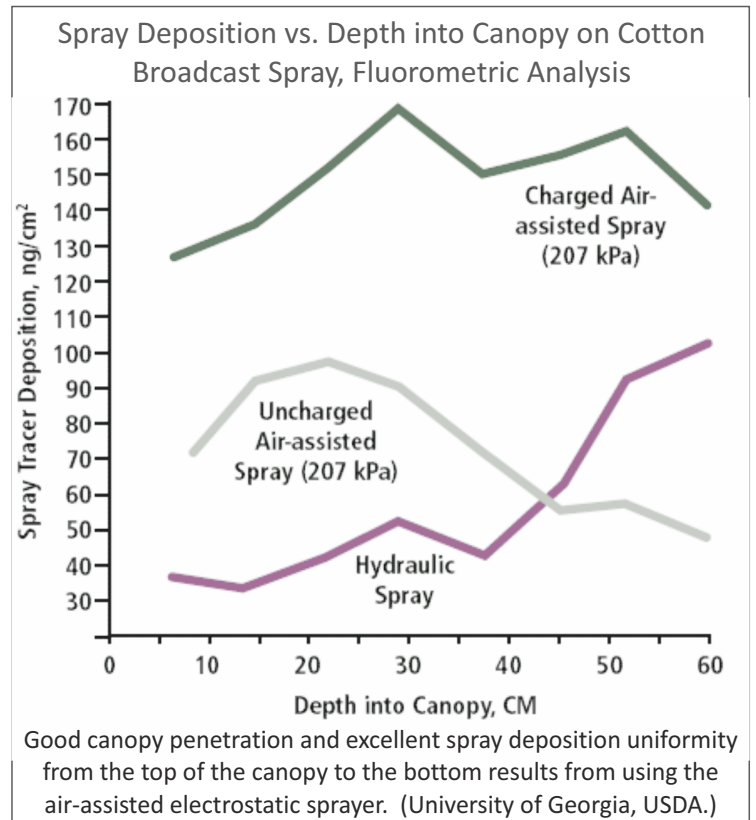
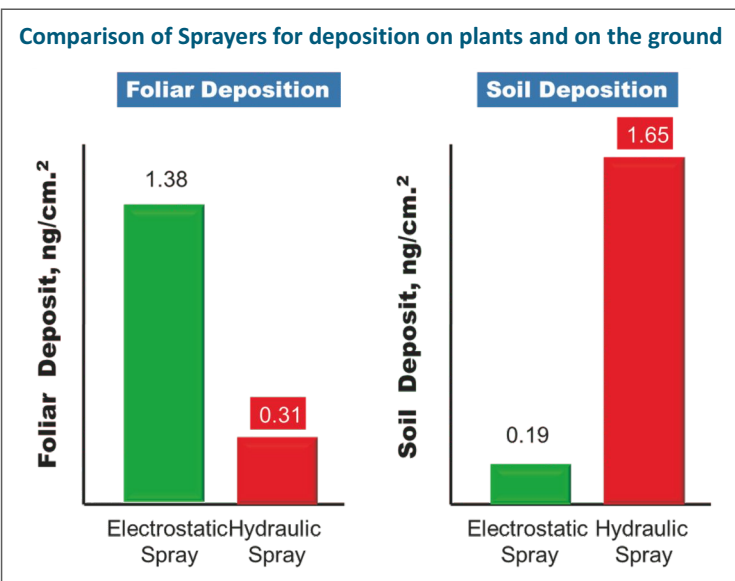
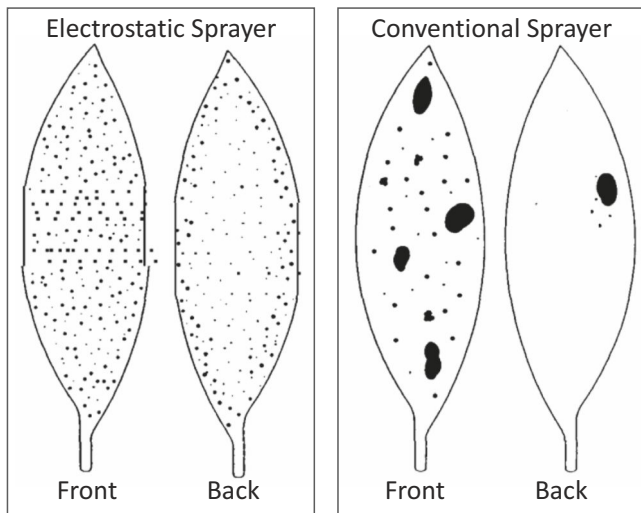


Electrostatic Spray, Droplets with the same electrostatic charge repel each other, keeping equally spaced.

- ◆ Range of nozzle: 15-20 feet.
- ◆ Low spray volume of 25-40 litres/acre
- ◆ Low Drift, No Run-off
- ◆ Single Self Contained Unit having petrol engine / electrical motor, compressor and spray hose and spray gun.
- ◆ All commonly used formulations of Insecticides / Fungicides / PGR such as EC, WP, SE, SP can be used with Electrostatic Sprayer.
- ◆ Long lasting and easy to clean nozzles
- ◆ Simplicity of operation and low maintenance.

Benefits of ESS Sprayer

- ◆ Net chemical savings of 40-50%. Saving in pesticide use is the direct effect of drastic reduction of excessive spray volume & of the reduced drift & no dripping to ground.
- ◆ **4 times Better Coverage on Leaves**
- ◆ **6 times Better Penetration into canopy.**
- ◆ **9 times Reduction in Soil Deposition**
- ◆ Labor savings due to reduced spraying time and less tank fills, which means more area per day.
- ◆ Longer intervals between sprays, and possibility of substituting less expensive contact pesticide instead of systemic, due to increased spray efficacy.
- ◆ Less humidity in micro-climate due to low spray volume.
- ◆ No additional expenditure in use of wetter / spreader / sticker.
- ◆ Improved crop quality and overall appearance.



Pest control is all about coverage !!!

Insects & Microorganism live & multiply on in-accessible surfaces and continue to survive if coverage is spotty. To overcome this problem complete & uniform coverage is required. The extraordinary bonding of the charged droplets to the target and the complete, uniform coverage achieved are distinct advantages of Electrostatic Spray Systems.

Application of GA in Grapes (With ESS Electrostatic Sprayers and conventional sprayers)

- ◆ **Results of trials conducted in grape concluded that:**
- ◆ Berry diameter and length, as well as berry mass, was increased significantly by applying ProGibb® 3 sprays with an ESS electrostatic spray applicator (60 L water / ha), compared to a conventional spray system (1500 L water / ha).
- ◆ The percentage berries meeting the criteria of X-large (>19 mm diameter) was significantly higher.
- ◆ Berry distribution exhibited a shift towards the larger diameter groups.
- ◆ In addition, the berry uniformity within the bunch was improved.

FEW MODELS FROM THE RANGE OF ESS ELECTROSTATIC SPRAYERS

ESS GPS 5 (With 6.5 HP Petrol Engine) / ESS EPS-5 (With 3 HP Electric Motor)



Nozzles	1 (Standard)
Standard hose length	150 ft. (45.7 m.)
Weight empty	230 lbs. (104.3 kg.)
Weight full	270 lbs. (122.5 kg.)
Main tank capacity	5 gal. (18.9 ltr.)
Air line pressure	50 to 60 PSI
Dimensions	40" H x 22" W x 42" L
Tank Pressure	12 – 15 PSI
Flow rate 1 Nozzle	10.6 L./hr.
Flow rate 2 Nozzles	19.7 L./hr.
Drop size	40 microns
Spray range	15 to 20 ft.
Available options	2-headed spray gun
Additional hose up to	250 ft. (76.2 meters) max.

The Mountain Man (With 6.5 HP Petrol Engine)



Nozzles	1 (Standard)
Standard hose length	100 ft. (30.5 m.)
Weight (full)	120 lbs. (54.4 kg.)
Dimensions	45" H x 25" W x 72" L
Flow rate: 1 nozzle	9.5 ltr./hr.
Flow rate: 2 nozzle	15 ltr./hr.
Drop size	40 microns
Spray range	15 to 20 ft.
BP 4 (Back Pack) capacity:	15 lit
Empty Weight of Back Pack:	3.2 kg
Available options	2-headed spray gun
Additional hose up to	250 ft. (76.2 meters) max.



ESS 80SR (For Grapes/Capsicum)



ESS SC1 (For Disinfection and Sanitation)



Range of ESS Spray Guns

Imported & Marketed in India by



**ECO
AGRO SERVICES**

Gat No. 789, A/4, Wadki Nala,
Near Sakal Press,
Pune-Saswad Road, Pune-412308, MH, India.
+91 20 25380160



Manufactured by:
Electrostatic Spraying Systems, Inc.,
62 Morrison St, Watkinsville,
GA 30677, USA

ESS 80 SR 14GB

Electrostatic Spraying System



TECHNICAL SPECIFICATIONS

- 14- MaxCharge™ air-assisted electrostatic nozzles
- 32 inches (80 cm) in width, perfect for narrow rows and green house operations
- 113 liters capacity poly tank
- 105 kg dry weight
- Efficient and effective ultra low volume sprayer (30-40 micron droplet size) with minimum drift
- Supercharged blower means the spray goes higher and further
- Control lever with valve control and easy-to-see electrostatic charge indicators
- Compatible with most conventional chemicals and fungicides
- Excellent foliage and "under the leaf" coverage
- Double, adjustable boom option available.
- "Category I" lift class; under 20 HP consumption