

What Everyone Should Know About Air-Assisted Electrostatic Spraying:

ESS air-assisted electrostatic sprayers produce spray droplets 900 times smaller than those produced by conventional sprayers. After the tiny droplets are given an electrical charge they are carried in a turbulent air stream. The heart of the air-assisted electrostatic sprayer is the patented Maxcharge™ air-atomizing induction-charging” nozzle, which was invented at the University of Georgia.

Air and liquid enter the rear of the nozzle separately. The air moves through the nozzle under pressure and meets the liquid at the nozzle tip, causing the formation of spray droplets that are 30 to 60 microns in diameter. At the tip of the nozzle is a tiny electrode which applies an electrical charge to the spray. The electrical charging causes a natural force of attraction between the spray droplets and target surface. The electrical charging causes a natural force of attraction between the spray droplets and target surface. The charge on the droplets though small, pulls the spray towards the target at 75 times the force of gravity. The spray droplets literally reverse direction and move upwards, against gravity, when passing a target surface.

The remarkable phenomenon by which the spray coats the undersides and the backsides of the spray target is known as electrostatic “wraparound”. In practical terms, this means that spray reaches even the smallest nooks and crevasses of the object.

With so many documented advantages and the ability to pay back the investment in as little as less than one year, the air-assisted electrostatic sprayer has become an essential piece of equipment for customers who want to succeed in today’s marketplace.

See Figure 1 for relative and total recovery of applied pesticide on greenhouse bench areas and target foliage.

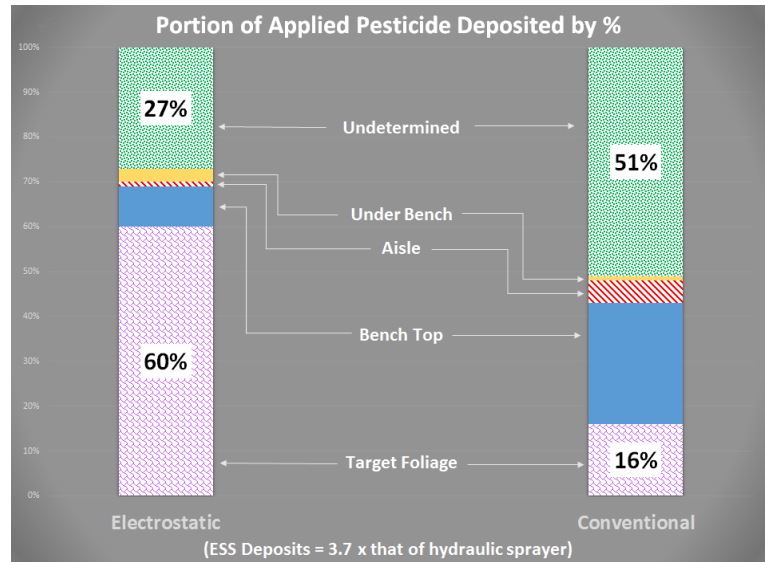


Fig. 1 - Foliar and nontarget deposition from conventional and reduced-volume pesticide application in greenhouses. D. Ken. Giles, T. Craig. Blewett, Steven G. Saiz, Angelica M. Welsh, and Robert I. Krieger. *Journal of Agricultural and Food Chemistry*. 1992, 40 (12), 2510-2516.

Documented Advantages:

- ◆ **Less Chemical Waste:** Testing by four major universities comparing ESS with conventional and air-blast sprayers shows 300% better spray penetration and coverage onto hidden areas of dense foliage. These studies also show that **only 15% to 20% of the spray from conventional or air-blast sprayer ends up on the plants**, with 51% of chemical wasted on the ground and less than 3% reaching the undersides of leaves and other hidden areas.
- ◆ **Quick Payback:** Better spray coverage equates to lower chemical consumption and faster investment payback. Most users can reduce costs by 30-60% and still see effective results from their spray program.
- ◆ **Environmentally Sound:** Environmental benefits include reduction of chemical waste and the improved results from low-toxicity chemicals. ESS is safer for workers – exposure is reduced since the frequency of tank filling is much less than conventional sprayers.
- ◆ **Dependable, Maximum Spray Charge Nozzles:** ESS systems use the MaxCharge™ spray nozzle – the most effective electrostatic nozzle available and the easiest to work with. MaxCharge means maximum charging for the best spray coverage.