



Individual row units zap spray droplets with negative electrical charge, which are then attracted like magnet to positively charged plants.

POSITIVELY ATTRACTED TO PLANTS LIKE METAL TO A MAGNET

Electrostatic Sprayer Uses 50% Less Chemical

An electrostatic sprayer that reportedly uses 50% less chemical by creating an electrical field that energizes each chemical droplet will be field tested this year by the FMC Corporation, Jonesboro, Ark.

The sprayer mixes air and chemical solutions under pressure in a nozzle, then zaps the mixture with an electrical charge. Each droplet is given negative charge as it's blown through the spray cloud is atomized. Because they are grounded, plants at which the spray is aimed have a natural positive charge and thus attract the negative droplets.

Air and liquid, held at 20 to 40 psi by a compressor mounted on the sprayer, are pumped into the nozzles through two small tubes. An electronic power unit mounted on each nozzle steps up the low battery voltage to 500-1000 volts. This low amperage high voltage charges each droplet as it's blown through the tiny hole in the end of the nozzle.

That combination of liquid and electricity may sound dangerous, but Dr. Ed Law, who pioneered the electrostatic concept at the University of Georgia, says the charge put out by each nozzle is no stronger than the spark produced by a spark plug. "There is a lot of voltage but there's very little power—only about 1/3 of a watt—so there's no danger," he told FARM SHOW.

Having a power supply on each nozzle means that there are no high voltage cables running across the sprayer. The system runs off any 12-volt system and that's the most voltage any exposed cables carry, the manufacturer explains.

FMC is manufacturing the new electrostatic sprayer under a licensing agreement with The Research Corporation, a non-profit firm in New York which holds the patent. The company has developed a prototype 12-row sprayer which was field tested last year. Company officials plan to test market the sprayer this



year and have a model commercially available by 1980, according to Marion Merideth, FMC advertising manager.

The new technology sprayer has been used only for insecticides, and mainly on cotton. Its developers say there is no reason it should not work with herbicides — they just haven't had time to experiment with them. They say that any chemical that will hold an electrical charge can be effectively run through the sprayer. FMC plans to test the sprayer in other crops this year, according to Merideth.

The sprayer requires 50% less chemicals than conventional sprayers because the spray is actually attracted to plants — like metal to a magnet — and little chemical is wasted. "We've found that with half the material, we've had a good or better results as with conventional sprayers and full applications," says Merideth.

An important part of the sprayer is a control panel mounted near the driver. The panel regulates voltage, air pressure, liquid flow and monitors all aspects of the system, including battery level.

For more information, contact: FARM SHOW Followup, FMC Corporation, 5601 Highland, Jonesboro, Ark. 72401 (ph 501 935-1970).



Inflated solar collector panel is 8 by 12 ft. and provides about 20,000 btu's. Also available in 24 and 36 ft. long models.

GOES ANYWHERE NEEDED; FOLDS INTO A 30 LB. BUNDLE FOR STORAGE

New Inflatable Solar Collector

Most convenient new solar collector we've seen is the new Solar Pak II, manufactured by the Chicago Solar Corporation, Castle Rock, Minn. The Pak II is made entirely from plastic and folds down from its 8 by 12 ft. collecting size into a compact, 30-lb. bundle.

Lance Crombie, the well known alcohol-maker featured in FARM SHOW last fall when his solar still was confiscated by federal agents, is also inventor of this new solar collector.

"Most collectors use steel or glass collector plates. They can weigh thousands of pounds and cost thousands of dollars," says Crombie. "We have 4 layers of plastic rippled through our collector that do the collecting. It's an efficient, convenient and lightweight system."

The unit uses black polyethylene and insulating cushions of air to trap the sun's rays. It has the capacity to raise outside air temperature 50°, according to Crombie. For example, if the temperature is 30°, the Solar Pak will deliver the air inside at 80°.

"My main objective in inventing this was to find low cost heat for our house, which now costs us a fortune to heat," says Crombie. At about \$350, he says his collector is one of the least expensive on the market.

In each panel, there are 6 layers of 8 mil. plastic — first 2 clear layers to let the sun in, and then 4 black. Air is trapped between the two outer layers to act as insulation while air travels freely through the "absorber" layers inside. Air is channeled through the collector through ribs, formed by heat sealing joints within.

A window unit, containing a thermostat and blower and outfitted with expansion plates, fits into just about any window, according to Crombie. Insulated ducts run from the window unit to the collector.

An 8 by 12 ft. collector will provide about 20,000 btu's, explains Crom-



Crombie shows how collector folds to compact, 30 lb. bundle for storage, transport.

bie. He says that's enough to keep an uninsulated garage at 40 to 50° when the outside temperature is 0°. The Solar Pak II is also available in 24 and 36 ft. long, 8 ft. wide models. When the size is doubled, the number of btu's provided is also doubled.

When in use, the Pak II can be placed on the roof, on the walls, on the ground or wherever else is the best place to collect the sun's rays. When not in use, the collector folds into a 30-lb. bundle.

A Solar Pak II collector only, without the window unit and insulated duct work, sells for \$195, while the total package is about \$350.

For more information, contact the company's Chicago marketing office: FARM SHOW Followup, Chicago Solar Corp., 5151 N. Harlem Ave., Suite 207, Chicago, Ill. 60656 (ph 312 358-1918).