

Electrostatic sprayer hits the spot

A vineyard sprayer that works on the premise of 'opposites attract' has been given the thumbs up by one of Australia's most respected winemakers.

Vineyard technology

COMMONLY USED FOR table grapes in Chile and the US, the on-target sprayer is now gaining traction in the Australian winegrape industry.

It features a spray nozzle that uses an electrical charge to create a fine mist of positively charged droplets which are attracted to the negatively charged surfaces of the plant, resulting in thorough coverage.

Brian Croser, winemaker at Tapanappa Wines, has been comparing the machine against his air blaster for the past eight years, after a prototype was made specifically for his 1.5m vineyard rows.

He says the advantage of the on-target sprayer is that it provides coverage in hard-to-reach places at small volumes.

"What attracted me to this is that it's so targeted and doesn't require high volumes of spray material," said Croser, who bought the machine in 2004.

"We tested it against the air blaster using fluorescent dye and found it gave a much more thorough coverage, whereas with the air blaster, I struggled to get the spray on the backside of the bunches and the underside of the leaves."

Potential for huge water savings

Australasian distributor Greg Marshall, who designed the prototype for Croser,



The on-target sprayer is best suited to vineyards with narrow rows.

says the on-target sprayer is capable of savings of up to 90 per cent on water usage.

"A conventional sprayer wastes more than 40 per cent of chemicals due to runoff and drift. Drops are large and they drip off the plant," Marshall said.

"With on-target sprayers, charged particles wrap around crops like magnets, providing full coverage and reducing drift. The small droplet size and electrical attraction nearly eliminates runoff."

As a result of increased coverage, repeat applications are reduced, leading to savings in money, diesel, labour and chemicals, making them an idea choice for growers looking for a sustainable option.

They are also less noisy due to a rotary lobe blower, making them socially acceptable.

Marshall, who has been providing demonstrations of the machine in Australia over the past season, says

interest is growing and he is planning to hold more demos this month throughout Victoria and South Australia.

So how exactly does it work?

"Chemical is fed through a jet and as it leaves the jet, it is sprayed out through the nozzle where it picks up the air. As it leaves the air, it picks up an electrical charge which is positively charged.

"Because positive particles repel each other, when it hits the plant, it provides an even coating because the droplets don't hit each other. They don't form larger droplets that fall to the ground – they hit the plant, which is naturally earthed."

The on-target sprayer ranges in price according to type and size.

For a single row, the machine would require about five spray nozzles per head (of which there are four), and would cost about \$28,000. For sloping blocks where you can fit the machine to the back of a tractor or for the smaller vineyard (about 10ha), the cost is about \$40,000 – the most popular.

Croser says the machine would be best suited to vineyards with narrow rows. The only limitation, he says, is the need to ensure nozzles are clean and still working properly because they are so fine.

"It's not high maintenance, it's just a task that needs to be attended to. We clean the nozzles thoroughly after every spray," Croser said. **GW**

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