

# Unique Aussie spray design offers management benefits for growers



The Taddei family operators – Rob, Carlo, Frank and Ned can see that they will be able to achieve what they did with two trailing sprayers with just this one unit.

Time and efficiency are two traits any citrus grower is keen to improve upon when carrying out management practices in an orchard. So when the Taddei family of Western Australia (WA) had the chance to adopt a more modern approach to their orchard's spray operation they jumped at the opportunity.

Liz Mecham explains how an Australian designed; unique self-propelled tractor sprayer has improved the Taddei family's time and efficiency and proved just as effective in spray coverage.

## snapshot

### The Taddei family Taddei's Orchard

Gin Gin (north of Perth), WA

#### PROPERTY:

- > citrus (mandarins and oranges)
- > stonefruit (peaches and nectarines)



Trailing a spray unit behind a tractor had always been the mode of operation on the WA orchards operated by the Taddei family.

But a four-year collaborative design process between a WA-based horticultural machinery importer and grower and an Italian engineering firm, has led to a unique self-propelled tractor sprayer now being used for the first time in Australia on the Taddei's orchards.

Specialist horticultural machinery importer, A & A Holdings, worked with Italian engineering firm, Andreoli Engineering, to develop the Atom3500 tractor sprayer – a machine developed specifically for Australian orchard conditions.

The first machine to hit Australian shores was snapped up by Ned Taddei for his family's 100 hectare orchard operations north of Perth.

"It's taken about four years of backwards and forwards between us and the company in Italy to get them to understand what needed to be changed on their existing models to make them work in our environment," WA grower and A & A Holdings owner, Garrie Vincenti said.

Now the machine has a bigger cabin, bigger tank but retains the manoeuvrability and small turning circle of the smaller-tanked models.

"We could have put a bigger tank on it, for sure, but then that turning ability would have been lost and that's what makes this machine so great," Garrie explained.

Ned Taddei's family orchard operation is north of Perth at Gin Gin where they grow citrus (mandarins and oranges) and stonefruit (peaches and nectarines).



Applying nutrients and fungicides had always been completed with trailing sprayers and while the job had been effective, Ned said they bought the machine once its time and application efficiencies were known.

"Garrie's been keen for us to be using a self-propelled model for a couple of years, but they really didn't suit our operation," Ned explained.

"Previously the Atom units only came in models with 2000 litre tanks, while the trailing tank models we used had tanks up to 4000 litres ... but both meant there was a lot of down time with filling tanks.

"With this model we have a 3500 litre tank, so we have conceded a bit in tank size, but made up for it with manoeuvrability, time efficiencies and a superior fan design."

Ned said while avoiding tricky turning issues encountered with trailing models was a big bonus, the fan design on the new model was one of its biggest benefits to their operation.

"The assembly on it just seem to atomise the spray better, it has more improved air flow and the penetration of the spray (into the tree) is superior to the units we had been using," he said.

"Even at low volume rates, it has a far superior coverage."

Ned said time efficiencies had been gained in being able to complete spraying in both blocks of orchard trees with one unit, rather than requiring two trailing units being operated.

The development of the fan set-up, Garrie said, came after some serious aerodynamic testing by the parent company, usually reserved for Formula One race cars.

"The fan is a bigger and better design," he said, "but not so much in more speed – in fact it has a slower speed than previous fans – but in more air flow ... it just has so much more air flowing out of it to exchange the air in the tree for whatever needs to be sprayed on it."

That increased air flow, Garrie said, gets within trees much more efficiently, particularly citrus trees renowned for being "hard to get into".

"There are no dead spots in the air flow – they (Andreoli Engineering) tested it with some pretty amazing aerodynamic equipment to make sure of it – and at the same time increased the fan's fuel efficiency by 15 per cent and made it quieter."

The Taddei family operations – Ned, brother Rob (in charge the packing shed) and brother-in-law Carlo (in charge of the orchard operations) – currently has Ned's son, Frank, operating the new machine.

"We can see that we will be able to achieve what we did with two trailing sprayers with this one unit and gain so many efficiencies with it, even just moving between blocks, the filling time, the not getting stuck at the end of rows in tight corners ... and getting what nutrients and fungicides we need to spray on the trees so much more effectively ... its solved a lot of issues," Ned said.

Currently harvesting their citrus crop and thinning their stonefruit trees, Ned said the machine had already been put through its paces during winter spraying, with more than 100 hours already on the clock despite having owned it only for a matter of weeks.

"It is definitely more user friendly," Ned said.

For Garrie, the development of the machine exceeded his expectations.

"The company delivered so much more than what we asked for," he said.

"I expected an agricultural machine and got an industrial machine." 🍌

The new spray machine can be viewed at [www.aahold.com](http://www.aahold.com)



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The boys from Taddei's Orchard in WA – (from left) Ned Taddei with brother-in-law Carlo and brother Rob.