

Heat Ranger Ltd

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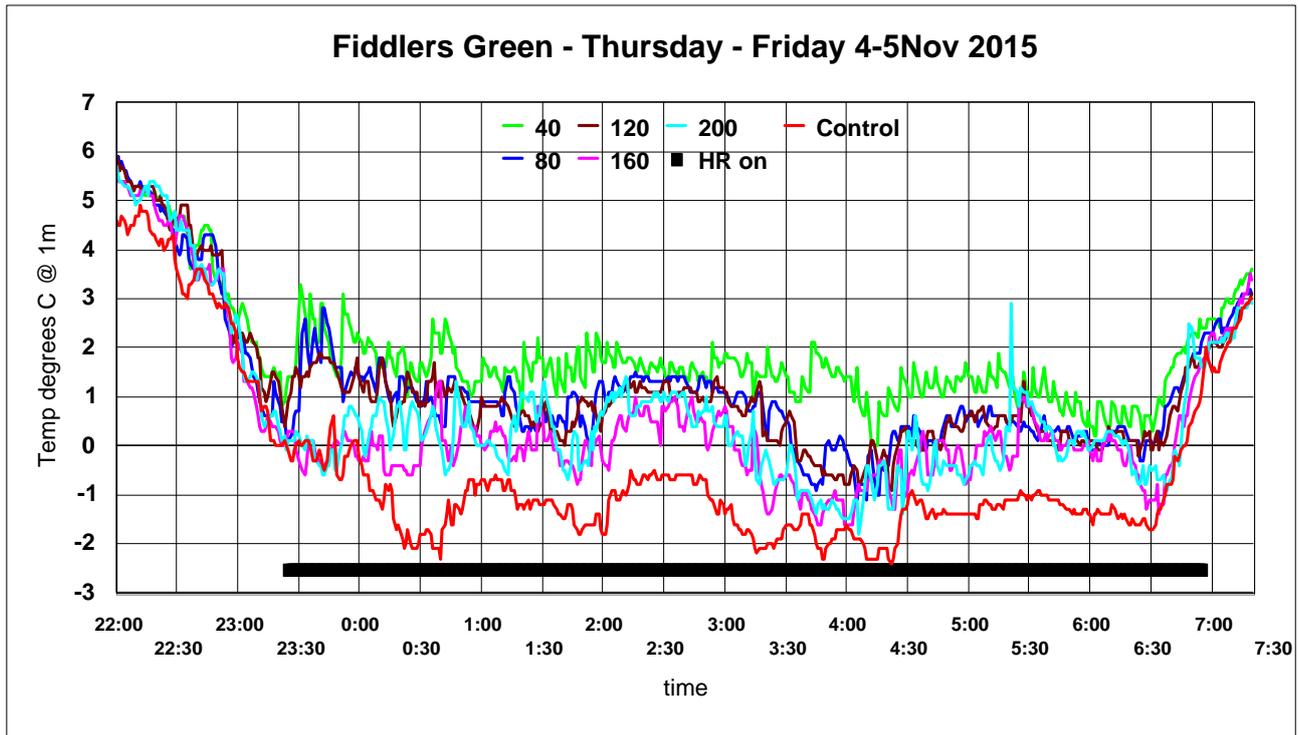
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New Zealand

Warm Air is an Alternative to Frost Protection Sprinklers

Results from Fiddlers Green Vineyard – Waipara - HR from 11:30p.m. - 6:50a.m.



One of the challenges in setting up trial areas and external control sites is to establish an appropriate control monitoring site that has equivalent temperature profiles to use for comparisons. Because Heat Ranger has such a large radius of influence our control station has to be at least 500m away from the machine. In this instance we had the control in a separate block.

In this particular event at round 6:00 a.m. the temperature of the nozzle output had fallen to 18 degrees and kept dropping over the next hour as the gas supply ran down. On re checking when shutting down, Ross noticed that one of the two isolating valves connecting the pallets had not been turned on and he had been running on one pallet only. Yet another learning experience and is reflected in the temp decline from 5:30a.m.

Elgas was able to refill the bottles later in the morning thanks to the efforts of Steve Lousich, who has been excellent to deal with throughout the project.

From our trial operation in Cromwell in 2014 we came to terms with the reality that many small, orchard tractors struggled to lift and drive Heat Ranger, so we have added wheels for easier manoeuvring and an engine, powered with LPG, to take the hassle out of having to top up tractor diesel tanks, half way through a frost event and of course this enables us to use the automatic start option.

The 2015 Test Programme confirms the changes made to the airflow and direction have been successful
We have had very good results at Fiddlers Green and both the Power Take off drive model and the internal engine driven model have been very reliable.

Response from our trial sites

Ross Trowsdale believes that by having it on site he was able to protect his 10 ha grape area despite the frost and the hiccups and believes that he would have been severely damaged without it. At Waipara this was a normal frost season (with damage where vines were not protected). He ran the machine on through 2 serious frosts as well as testing in low temperature conditions for reliability. We are satisfied that the operational issues are working as they should and that the machine has done what we set out to do and that has been to raise the temperatures by incorporating heat to “protect” his vineyard area. The ability of Elgas to resupply on demand has been great.

At Cromwell Earnscy Weaver likewise believes that the machine is doing the job and is very happy with how it has performed both mechanically and in terms of the effect that it has had on the young cherry trees. The site provided exposure opportunities and was sufficiently different to cause an Otago Daily News reporter to call in and he published a story on it complete with a photo in the OTD on the 4th of November. This was picked up by radio NZ which did a segment on 9 til Noon and TV3 filmed a news story at Waipara which went to air two weeks later.

<http://www.3news.co.nz/nznews/kiwi-inventions-set-to-revolutionise-horticulture-industry-2015111318>

Noise levels

At Pisa the adjoining windmills at a distance of 180m were rating at 75 – 82 decibells whereas at Waipara at 160m the decibel range was between 49 – 58 with the tractor PTO drive and 39 – 54 at 200m. The engine driven model is quieter again. The Marlborough district Plan states
Noise levels measured at 200 metres from the wind machine shall not exceed 60 dBA

Input parameters

The 30 degree heated air temp and 4 minute rotation speed appears to be working well
Doing Evaluation work in frost conditions is never easy but the results speak for themselves. The interest is certainly there as growers appreciate that there is a viable alternative out there.

Fred Phillips
Operations Manager

www.heat-ranger.com