



Agrizest



AGRIZEST

An Elicitor of the phenylpropanoid pathway for
healthy, productive vines and quality crops.

For Vineyards

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What is Agrizest?

Agrizest is an elicitor of the phenylpropanoid pathway to produce healthier, more productive vines.

Agrizest works indirectly to elicit phenylpropanoids. Phenylpropanoids support plants' repair, growth and defence systems and also function as aroma and flavour compounds.

Agrizest reduces stress, aids recovery from environmental, biological or mechanical damage and increases flavour compounds in wine.



01

Agrizest reduces stress, supports healthy growth and increases flavour compounds in wine.

02

Certified by BioGro for organic production

03

Used by leading growers for over 15 years

04

Developed, tested and proven in Kiwi orchards and vineyards



An Elicitor of the Phenylpropanoid Pathway



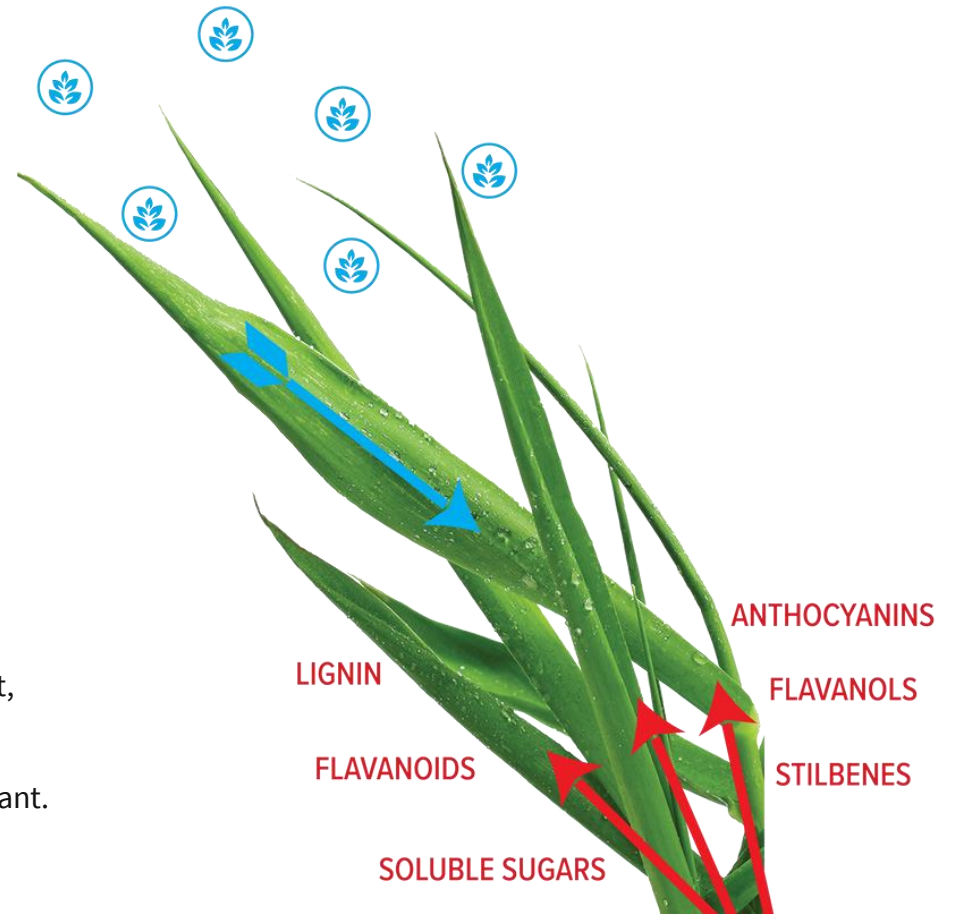
Introduction to the science

Agrizest works indirectly to elicit phenylpropanoids, which reduce stress, increase plant performance and improve crop quality.

All plants have receptors on their surfaces so, rather than directly feeding the plant or targeting a specific pest or disease, Agrizest is designed to be registered by these receptors, which then elicit, or trigger, a plant response.

Agrizest is manufactured from various plant-derived materials that, when applied to plants, mimic the impact of pest, disease and environmental stress without causing any actual damage to the plant.

The plant reacts to Agrizest applications by producing Phenylpropanoids, resulting in a stronger, healthier plants and a higher quality crop.

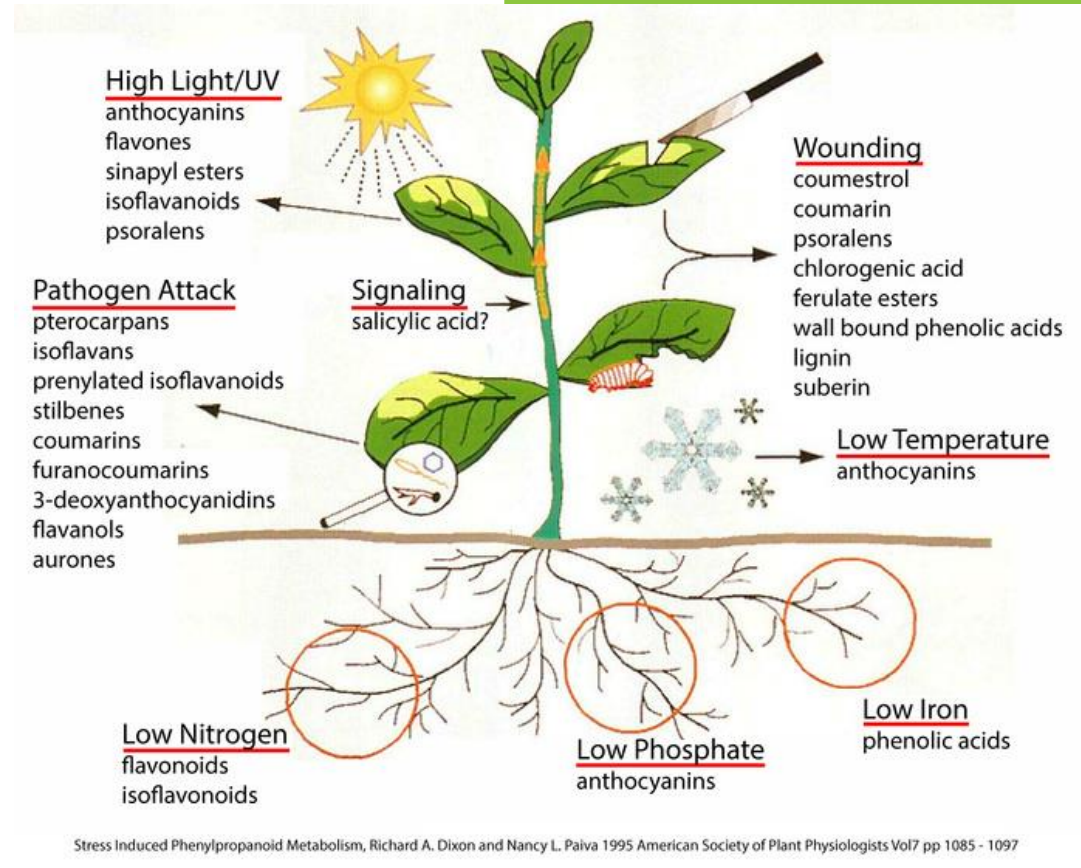


Intro to Phenylpropanoids

Phenylpropanoids are a range of bioactive molecules, naturally produced by all plants, responsible for important plant and fruit quality characteristics. They also support the repair, growth and defence systems (immune systems) of plants.

Examples include stilbenes (e.g resveratrol), lignin and suberin to harden cells and produce firmer fruit, flavanoids for improved flavour, anthocyanins for high colour and coumestrol and other oils to repair damage.

When Agrizest is applied to plants it triggers and elicits the production of these molecules, ultimately enabling optimal plant health and fruit quality.



Key Results

Proven benefits



**Improved stress
resilience and
recovery.**




**Increased
flavour
compounds.**

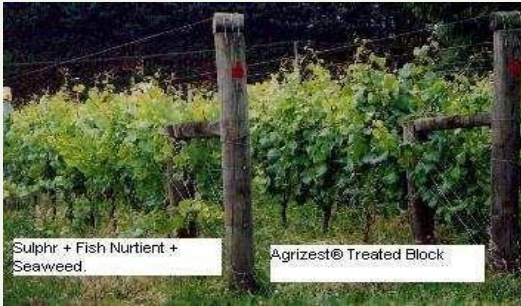


**Reduced
damage from
biotic & abiotic
stress**

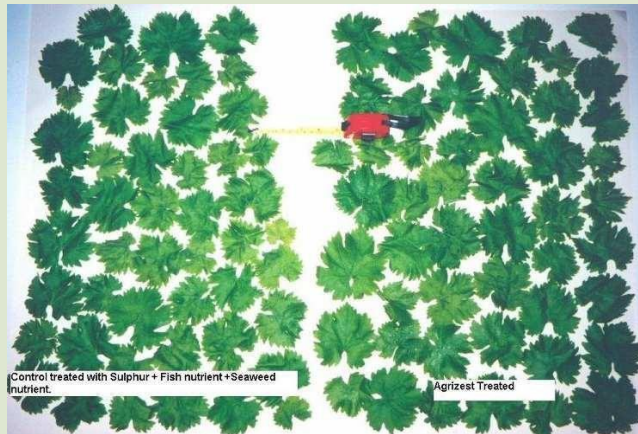


Agrizest strengthens the vine against pest, disease and other stress damage. Agrizest also results in internal physiological and biochemical improvements that lead to higher quality fruit and wine.

RESULTS				NOTES & INFERENCES
<p>Blister mites infestation</p> 				<p>Grape vine infested with blister mite. This vineyard consisting of Pinot Noir and Viognier varieties was split into blocks. Rows were treated with Agrizest and compared with the control rows which received sulphur + fish nutrient + seaweed sprays.</p>
Total leaf spots due to blister mite damage				
	Control	Agrizest	Difference	
Viognier	79	44	-44.30%	
				<p>Agrizest reduced pest damage. There was over 40% less mite damage in Agrizest block, compared to the control area which was treated with pesticide plus nutrient treatments. This represents a significant improvement in leaf health (and therefore productivity) and a cost saving.</p>



Agrizest enhanced growth. Treated plants had larger, healthier leaves, noticeably greener than the pesticide + nutrient treated plants.



There is a larger growth benefit between treatments in the mite infested Viognier variety compared to the Pinot Noir (which was relatively free of mites).

Compared to the conventional (pesticide + foliar nutrients) treated control block, the Agrizest leaves were larger, healthier and, therefore, more productive.

The combined effect of repair and growth stimulation by Agrizest resulted in treated plants having larger leaves than the control plants.

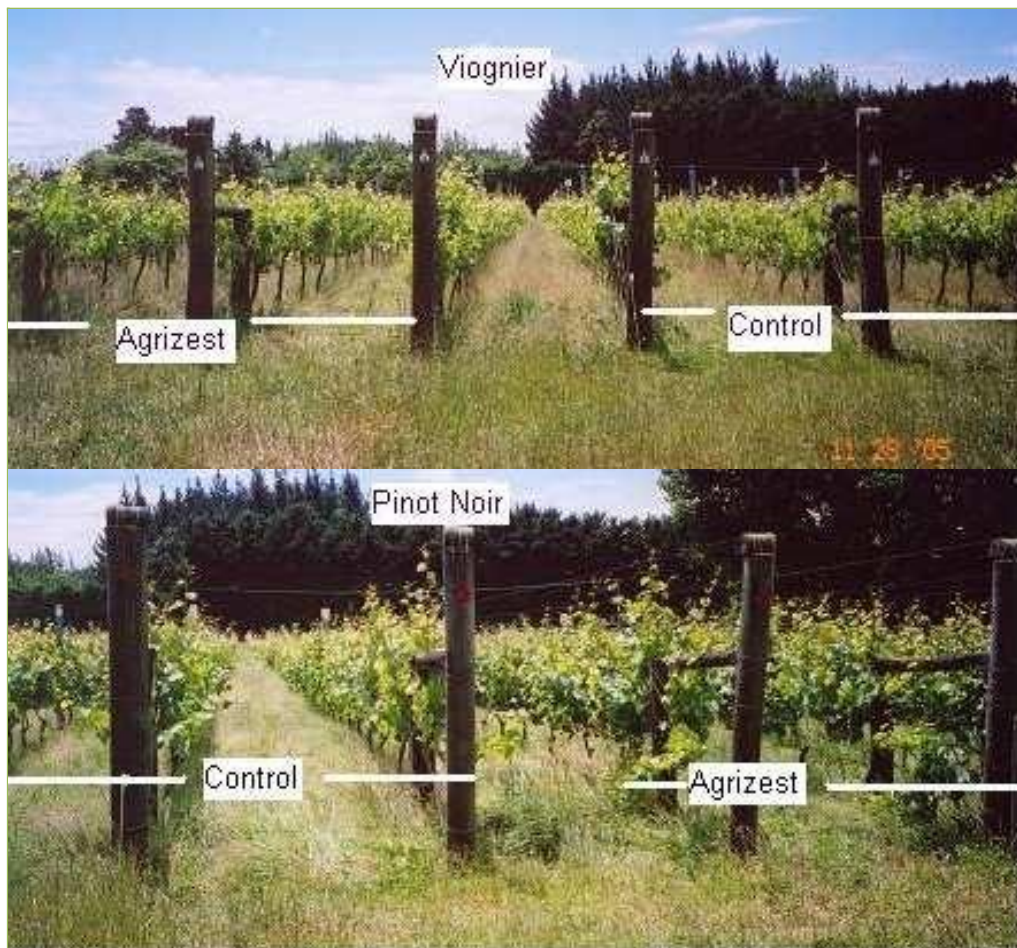
Leaf Width Index			
	Control	Agrizest	Difference
Viognier	7	7.6	8.60%
PinotNoir	8.9	9.1	2.20%

Brix Level			
Control	Agrizest	Difference	
19.8	21.2	7.10%	
20	20.7	3.50%	

Agrizest improved the sugar levels (Brix) in the berries, as well as enhancing the quality of grapes at harvest.

CONCLUSION: Agrizest was able to reduce pest damage, improve growth and enhance quality.

Agrizest treated plants remain primed the following spring.



These Pinot Noir and Viognier split blocks were treated the previous season (spring 04). The treated blocks produced larger and greener leaves the following season (spring 05). Agrizest was not sprayed in spring 05.

The innate growth system remained primed the following season.

Agrizest Improves Growth and Stress Tolerance.



This Pinot Noir block was split, and 0.57 hectares was treated 4 times with Agrizest at the recommended rate of 1 litre in 1000 litres of water per hectare. The rest of the block was used as the control.

Observations after harvest –

1. The Agrizest treated plants had larger leaves and they were darker green.
2. The control plants had suffered more from the mechanical harvest operations. The leaf damage symptoms (senescence) were more pronounced and covered a broader band along the rows.
3. The Agrizest treated plants had thicker canes.

CONCLUSION: Agrizest was able to stimulate healthy growth and strengthen the plants' ability to withstand stress.

Agrizest Increased Production Potential.

Clive River Vineyard Agrizest Trial Pruning 2006 Analysis AVERAGE BAY WEIGHT

(Bundle and weigh prunings from every 6th bay per row, Calculate average pruning weight per plant)

	Control Plants	Agrizest Treated Plants
Variety		
Pinot Noir 10-5	6.07	6.29
Chardonnay clone 6	5.17	5.2
Chardonnay clone 15 - 2001 plants	5.89	6.46
Chardonnay clone 15 - 2002 plants	2.14	2.46

Mike Lane conducted the above assessment in his vineyard:
“You will see in all cases the pruning weights were higher in the Agrizest treated plots as opposed to the control.”

REDUCING PEST AND DISEASE DAMAGE



Trial Design

The following trial was carried out in Blenheim by one of New Zealand's leading wine companies.

The trial is a fully replicated trial; a continuation of an observational trial started during the previous season.

Spray Programme

The trial compared two treatments (Agrizest and the "RSF" nutrient treatment) and a control treatment.

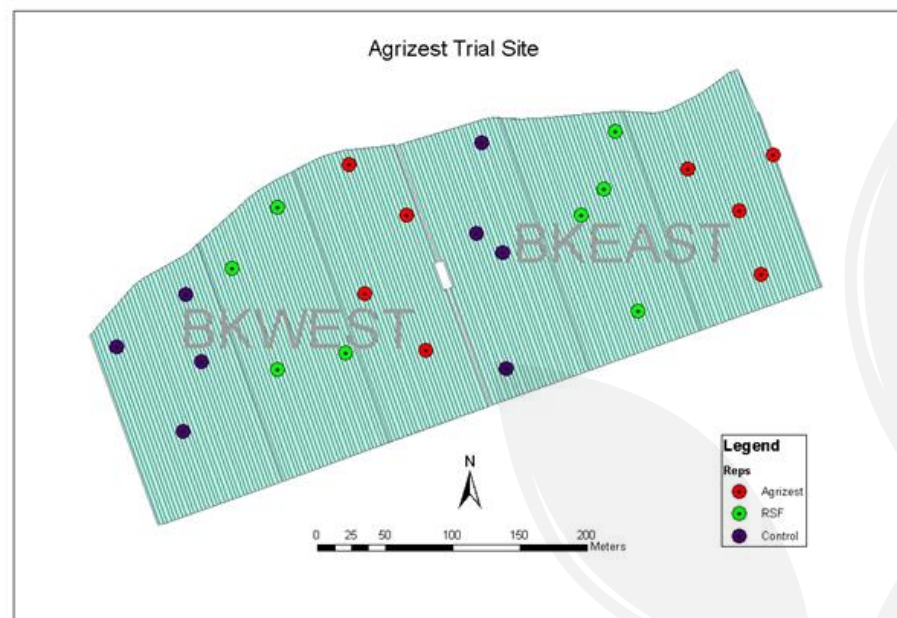
The recommended (named vineyard) pest and disease spray schedule was carried out as usual on all treatments. The treatment areas were the same as those used in the previous season with the intent that any multi-season effects would be captured.

SUMMARY:

- **Agrizest reduced berry splitting** compared to the nutrient treatment and control.
- Agrizest reduced botrytis.
- Agrizest treatment was **1/3 the cost** of the "RSF" treatment regime per hectare.

Trial Details

Each treatment was applied to approximately a third of each section and within each treatment bays were selected at random as treatment reps on which measurements were carried out. The treatments are foliar applied sprays so two treatment areas of approximately 30 rows each were sprayed every time a formulation was used throughout the season. There were eight reps per treatment marked out in early October. The total area per treatment was approximately 3.2 hectares. For some measurements e.g. inflorescence numbers, the yield estimation segments, from the standard Vineyard yield estimation program, were used instead of the bay reps. For this reason 54 yield estimation segments were set up instead of the normal 50 to ensure that the same number, nine, were set up in each treatment area.



Treatment Programme

Nutrient	Intended timing	Date done	Application contents
Agrizest	7-10 days before flowering	25/11/2007	Agrizest
	3-7 days after 1 st spray	5/12/2007	Agrizest
	14 days after 2 nd spray	29/12/2007	Agrizest
	7 days after 3 rd spray	9/1/2007	Agrizest
RSF	Late November	25/11/2007	Biomin Magnesium; Biomin Boron; Mobiliser
	Fruitset	29/12/2007	Biomin Calcium; Mobiliser
	2 weeks before veraison	9/1/2007	Biomin Magnesium; Mobiliser
	Veraison	15/2/2007	K-Forte
	4 weeks before harvest	28/2/2007	Biomin Calcium; Mobiliser
	2 weeks before harvest	16/3/2007	K-Forte
	Post-harvest	Not done	Biomin Booster V; Biomin Magnesium; Mobiliser

Table 1: The calendar of applications for Agrizest and RSF treatments during the 2006/2007 season

RESULTS

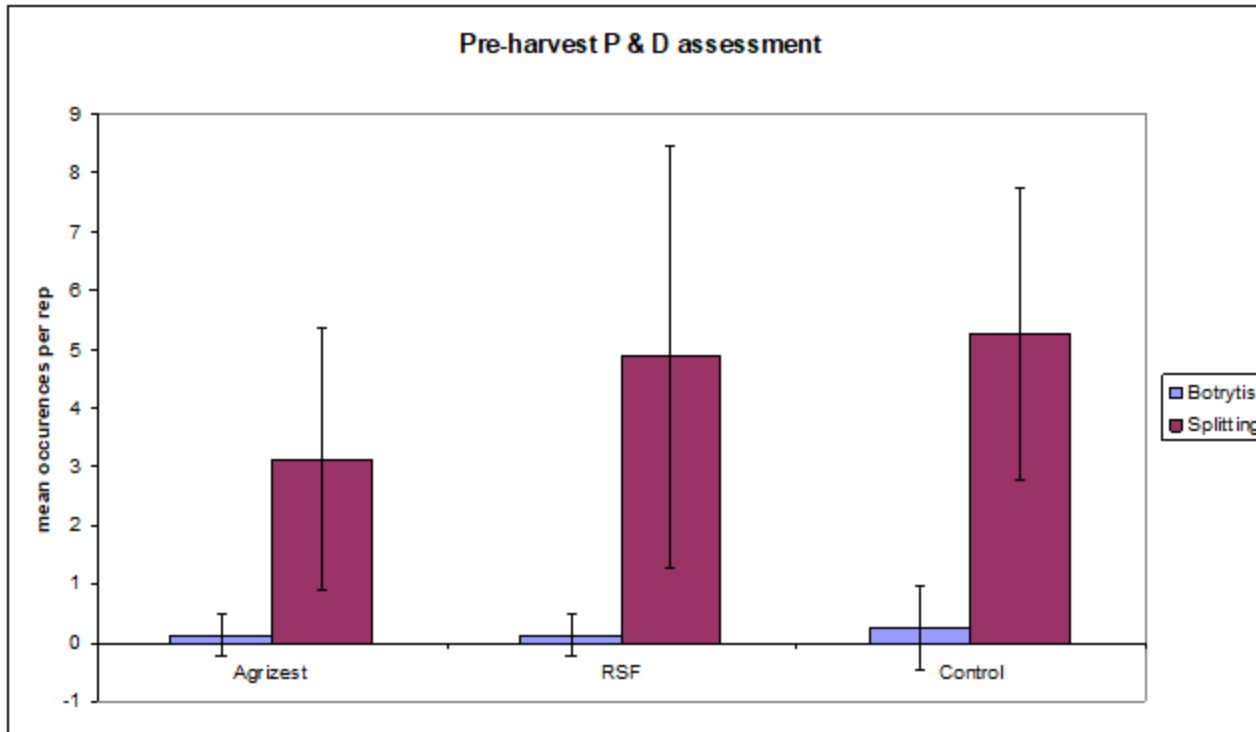


Figure 7: The pre-harvest pest and disease assessment results. Ten bunches were assessed per rep. n=8. Error bars show ± 1 standard deviation.

Costs

	Total Cost (\$)	Cost per ha (\$)
Agrizest	825.09	258
RSF	2520.60	764

Table 2: Total and per hectare cost of the Agrizest and RSF products for the trial area.

AGRIZEST INCREASED FRUIT QUALITY, YIELD, JUICE AND WINE QUALITY



Trial Design

The following trial was carried out by one of New Zealand's leading wine companies.

The trial employed a duplicated split block design. Each block measured 1.5 hectares or more.

Spray Programme

The recommended spray programme was followed:

- 1st spray 7 days before flowering.
- 2nd spray 3 days later
- 3rd spray at end of flowering
- 4th spray 7 days later (was delayed to 14 days).

SUMMARY:

- Agrizest produced better juice quality characteristics.
- Agrizest increased yield by 12% (via larger berries)
- Agrizest produced better wine quality characteristics (thiols increased by 10%).

RESULTS

Juice Analysis

	Control Block	Agrizest Treated Block
Juice in tank Brix	22.8	22.5
Juice in tank pH	3.19	3.2
Juice in tank TA	8.8	9.9
YAN (ppm)	399	338

CONCLUSION: Agrizest produced better juice quality characteristics.

Yield and Yield Components

	Control Block	Agrizest Treated Block	% Difference
Berry weight (g)	1.2	1.5	25% heavier
Berries/bunch	56.0	51.0	9% less
Bunch weight (g)	64.9	74.2	14% heavier
Yield t/ha	5.9	6.6	12% more

The yield increase is due to larger berries rather than higher bunch or berries load. Agrizest appears to increase yield through improved quality production rather than through higher bunch or berry loads.

CONCLUSION: Agrizest increased yield by 12%.

Wine Quality

Three thiols (4MMP, 3MHA, & 3MH) were analysed as flavour characteristics indicators. The 4MMP sample was affected during the test period and no result was obtained.

RESULTS: Agrizest increased thiols (about 10%.)

CONCLUSION: Agrizest produced better wine quality characteristics.

Safety/Approvals

Agrizest is manufactured from phytogetic extracts, fatty acids, phospholipids, plant compatible organic acids and wetting agents.

Agrizest can be used on all crops with no withholding period and no waiting period.



ORGANIC

Agrizest is certified by BioGro for use in organic wine production.



Agrizest is approved for use on Sustainable Winegrowing NZ-certified vineyards.



Agrizest is authorised by MPI (under the ACVM Act) as exempt from registration.

User Guidance

The Agrizest spray programme has been scientifically developed based on years of field trials.

Agrizest must be applied 4 times per season at key stages of physiological development - timing is key.

All 4 sprays are required to maximise improvements in both yield and quality.

- No wetting agent required.
- Water rates: dependent on sprayer and canopy - ensure product application rate is 1L per hectare. Typical rates: 1 litre of product to 500-1000L of water per hectare.
- Compatibility: Agrizest is compatible with most commonly used orchard sprays. Combinations should be tested prior to use. Always read the label.
- Agrizest can be sprayed on days when it is breezy or rain is expected - when other sprays, such as pesticides cannot be used. This is because Agrizest is effective on leaf contact, does not require full cover, and does not require drying time.

Directions

1+2 2 Sprays Pre Blossom:

- Rate: 2 sprays of Agrizest at 1L/ha.
- Timing: 1st spray 3 weeks before flowering. 2nd spray 3-7 days later.

3+4 2 Sprays Post Blossom:

- Rate: 2 sprays of Agrizest at 1L/ha.
- Timing: 3rd spray post flowering – immediately after the bees are removed. 4th spray 7 days later.

•Total cost per hectare:
\$368+gst



A vibrant photograph of red bottlebrush flowers with green foliage, set against a clear blue sky. The flowers are in sharp focus, showing their characteristic cylindrical, brush-like structure.

CONTACT US

Our Postal Address

Zest Biotech
PO Box 384
Pukekohe 2340
Auckland

Our Offices

1974 Great South Road,
Bombay 2675
Auckland

Our Manufacturing

Facility: Unit 4
Waiuku Business Park
23 Kitchener Road
Waiuku 2123

Call Or Email

info@zestbiotech.co.nz
0274114332