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Agrizest

16 YEARS

AGRIZEST

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

For Vineyards

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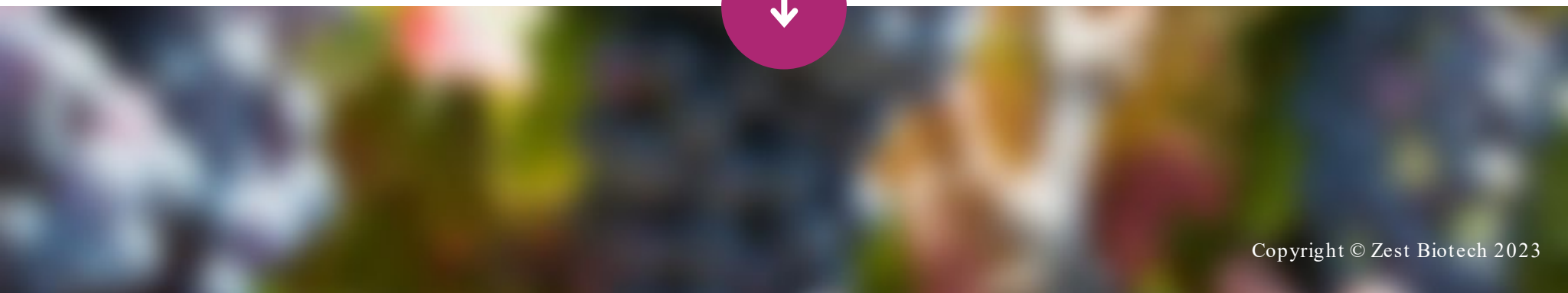


What is Agrizest?

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

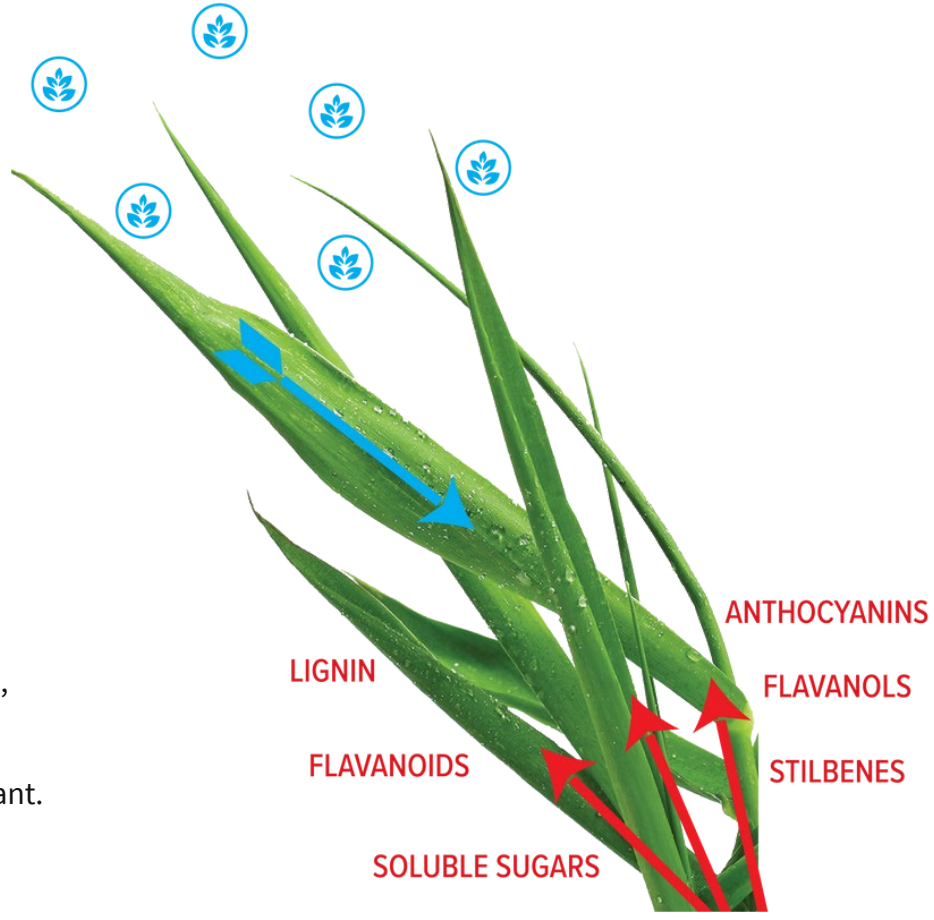
Introduction to the science

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.

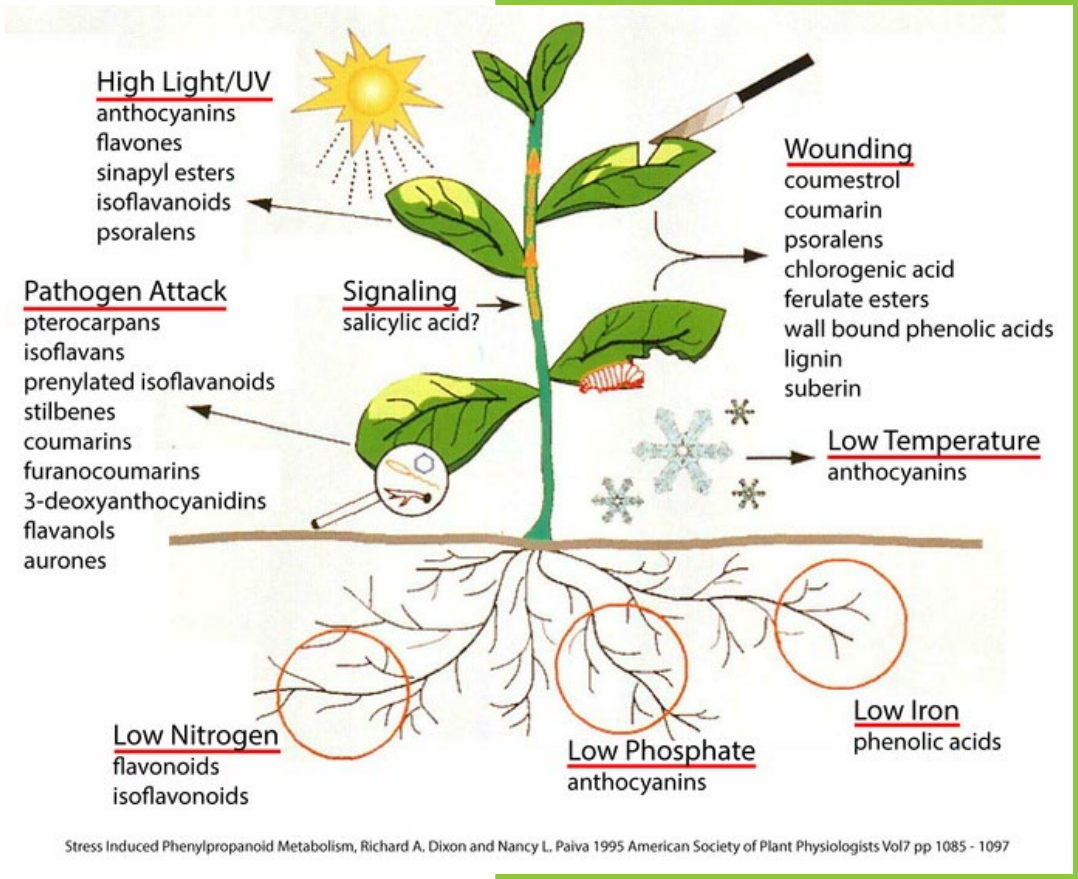


Intro to Phenylpropanoids

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.



Stress Induced Phenylpropanoid Metabolism, Richard A. Dixon and Nancy L. Paiva 1995 American Society of Plant Physiologists Vol7 pp 1085 - 1097

Key Results

Proven benefits

Improved stress resilience and recovery.

Increased flavour compounds.

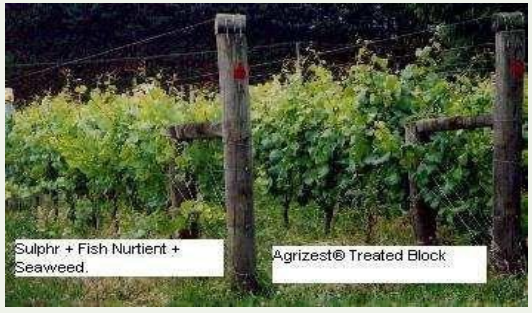
Reduced pest pressure and damage.

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.

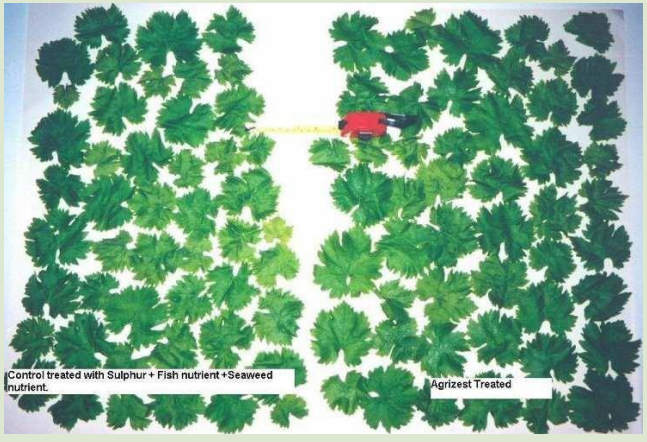
RESULTS	NOTES & INFERENCES
Blister mites infestation 	Grape vine infested with blister mite. This vineyard consisting of Pinot Noir and Viognier varieties was split into blocks. Rows were treated with Agrizest and compared with the control rows which received sulphur + fish nutrient + seaweed sprays.

Total leaf spots due to blister mite damage			
	Control	Agrizest	Difference
Viognier	79	44	-44.30%

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.



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



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

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.

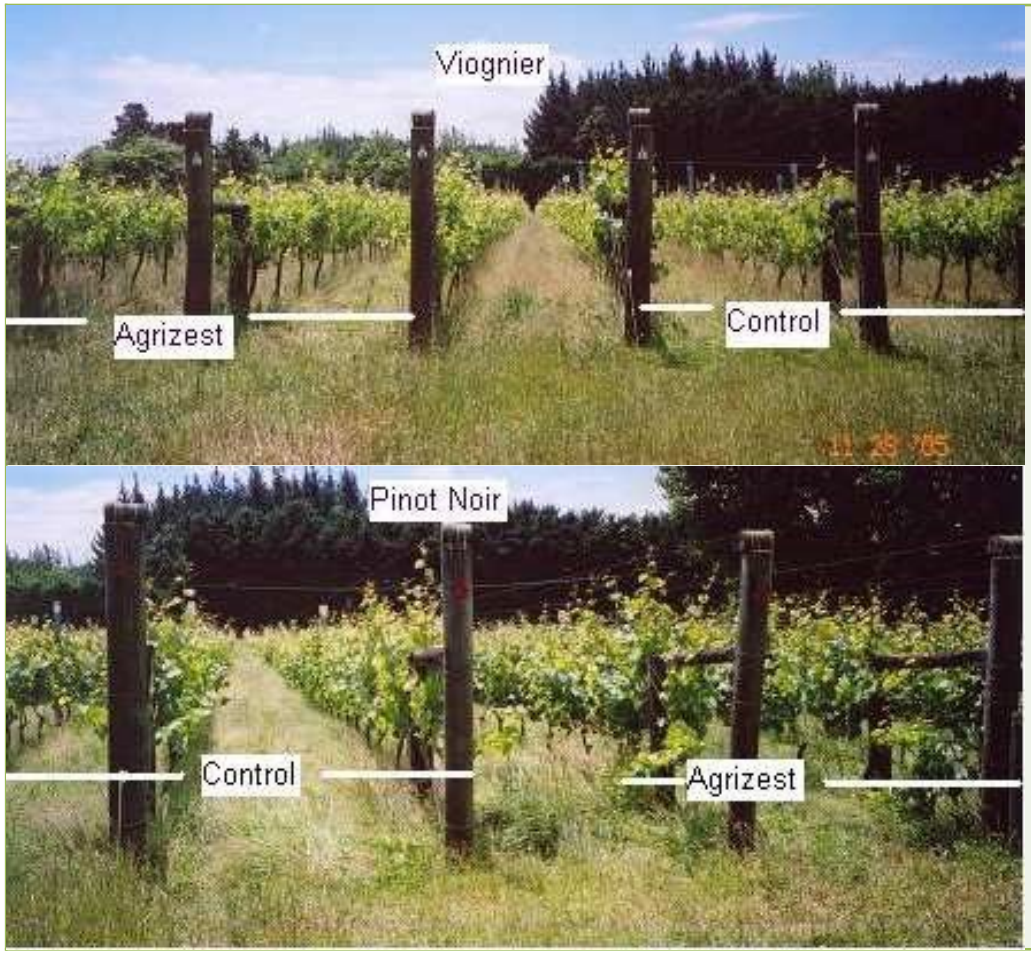
The combined effect of repair and growth stimulation by Agrizest resulted in treated plants having larger leaves than the control plants.

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.

Clive River Vineyard - Pinot Noir - CONTROL - Post harvest - 16 March 06

Clive River Vineyard - Pinot Noir - AGRIZEST TREATED 4X - Post Harvest - 16 March 06

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.”

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 phytogenic 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

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