

AquaMate®

Organocatalytic Irrigation Line Cleaner & Water Conditioner

UC Davis Report Found AquaMate®, (US brand - Phyto-Cat™) to Benefit Growth, Hardiness and Yield in Winegrape Vines

The University of California Davis - Department of Enology and Vinology two-year study shows the treatment of irrigation water with AquaMate®, not only keeps irrigation lines clear of bio-film/slime but also improves carbon transport, accelerates plant metabolism, increases WUE, improves growth and increases yields.

Following is a summary of the study findings, with a link to the full report:



Reduced Water Use



39% Av. Increase Per Season in Yield Over Control Over 2 Seasons



Proven In The Field By UC Davis.



Increased rate of stem water potential, Photosynthesis, & water use efficiency

AQUAMATE® GUARANTEED ANALYSIS

Organocatalyst	90%	900 g/L
Organic Surfactants	10%	100 g/L



Summary of Findings

"For consistent production in water scarce areas... AquaMate® is recommended to be included in each irrigation cycle"

Improved Carbon Transport:

AquaMate® treatment affects the transport of sugars from source to sink organs in grapevines, resulting in healthier plants, higher yields and greater resilience to heat and water stress.

"sugar allocation to vegetative organs was highly affected by applied AquaMate® leading to different shoot to root biomass partitioning where shoot:root ratio, leaf non-structural carbohydrates, and photosynthetic pigments increased with greater applied AquaMate®."

Accelerated Plant Metabolism:

Treatment with **AquaMate®** correlated with increased rate of photosynthesis, stem water potential, and water use efficiency. 2 ppm treatment showed a **13% increase** in total chlorophylls over two years over control and a **78% increase** in total Carotenoids.

"Leaf gas exchange variables were measured during the two seasons and 2 ppm had the highest rates of photosynthesis (AN), stomatal conductance (gs) and better instantaneous water use efficiency (WUE); also resulting in higher leaf chlorophyll and carotenoid content. Mineral nutrient content for nitrogen and potassium increased linearly with the increase in applied AquaMate®."

Increased Growth:

2 ppm **AquaMate®** treatment **increased root mass by 36%, leaves by 107%, trunk by 22%, shoots by 100% and shoot to root ratio by 35%** over the control two years.

"Leaf, shoot and roots fresh weights increased with increased AquaMate® amounts... The bio-mass of leaf and root increased in the grapevines subjected to 4 ppm compared to 2 ppm and Control."

Higher Yield:

AquaMate® treatment of 4ppm showed increased yield over the control of 32% in 2019, and 78% in 2020 which saw significantly higher heat and water stress. Leaf area to fruit ratio was 68% greater after 2 years and berry mass was 35% greater.

"...grapevines that were not supplied with AquaMate® showed a reduced rate of photosynthesis, and water status, less photo-assimilates in source (leaves) available for new growth and export-ed to sinks, and a lower plant BM due to the water restriction. Conversely, 4ppm showed the highest photosynthetic performance and water status, which led to increased contents of soluble sugars and starch in leaves and greater yield. Finally, our data revealed that in 2ppm treatment, the enhancement of sugar transport, mainly sucrose and raffinose, could slow down the detri-mental effect of water deficits on yield."

To view and download the full study go to www.aquamate.farm

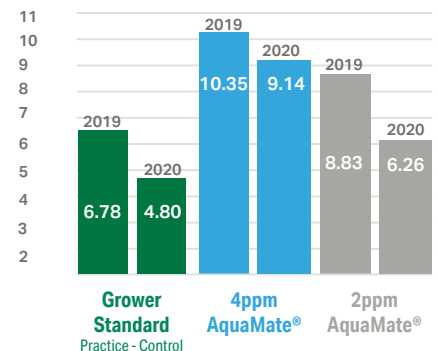
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**Yield Results Kg/Vine for
2019 & 2020 Seasons**



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