PAA: A Perfect Pairing for Winemaking

Fine wine requires rigorous attention to sanitation and disinfection. From the vine to the bottle, keeping products safe from contaminants is critical for product quality, brand reputation, and consumer confidence.

Discover how Peracetic Acid (PAA) is used at every stage of viticulture and winemaking processes and how it can safeguard wine production, solving the sanitation and disinfection challenges vintners face to deliver a delicious glass of wine.

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PAA: A Perfect Pairing for Winemaking
From the vine to the bottle, PAA ensures proper sanitation processes are met for wine safety, consistency, and quality.
PERACETIC ACID (PAA):
YOUR SAFEGUARD FOR WINEMAKING
CH3COOH + H2O2 ⇆ CH3COO-OH + H2O
ACETIC ACID
HYDROGEN PEROXIDE
PERACETIC ACID (PAA)
WATER
A colorless liquid formed by the mixture of acetic acid and hydrogen peroxide
USDA ORGANIC
Allowed by the National Organic Program (NOP) as a disinfectant
Effective as an antimicrobial at broad temperature (between 0-40°C) and pH (between 3.0-7.5 [Orr]) ranges
Irrigation Management
Drip irrigation systems used in vitiviniculture save water, reduce the potential for groundwater pollution, improve water use efficiency, and reduce disease.
Challenges:
Natural groundwater contaminants from the aquifier, sand, and silt; organic biosolids such as algae, bacteria, and slime; dissolved metal solids such as iron, sulfur, and calcium
pH level of the water
Salt loading
Water conservation
80%
of California winegrape vineyards use drip systems for irrigation (Ohmart, C.P.)
Solutions:
Peracetic Acid (PAA)
Prevents slime, bioscale, bacteria, and algae from lowering drip or spray irrigation performance
Doesn't contribute to wastewater TDS or total salt levels
Makes it possible to irrigate crops with recycled wastewater, saving water for growers
Soil & Vine Management
PAA can be used as a soil treatment
PAA prevents and controls bacteria, fungi, and powdery mildew
Harvest/Post-Harvest
Challenges:
Ability to kill microbes and sanitize surfaces "on contact"
Solutions:
Peracetic Acid (PAA) is:
A post-harvest cleaning and sanitizing wash that inhibits mildew and spoilage
Post-harvest diseases can cause up to
40%
product loss
(Journal of Wine Research)
A general sanitizer for grape storage, transport, and packing areas
A microbial growth inhibitor that minimizes contaminants
Harmless to human consumption (Orth 1998), and breaks down to form acetic acid, oxygen, and water (Kramer 1997)
A "water-keeper," it eliminates citric acid rinse, saving hundreds of thousands of gallons of water annually
Wine Production
Challenges:
Complex biofouling, cross contaminations
Biocontaminants that cause spoilage in wine production include:
Yeasts
Acetic bacteria
Lactic bacteria
Brettanomyces spp
Solutions:
Peracetic Acid (PAA)
Adds no measurable acetic acid to wines
Environmentally friendly, breaks down to acetic acid, water, and oxygen
Is a powerful oxidizer for cleaning fermentation vessels with no rinse required
Is an ideal sanitizer for bottles, equipment, and production premises
Is an effective CIP cleaner and sanitizer for tanks, pumps, lines and filters
Our Peracetic Acid (PAA) Formulations:
Meet necessary safety regulations
Release Zero Liquid Discharge — enabling wastewater reuse
Addresses environmental concerns to create a delicious and eco-friendly glass of wine
Won't form trichloroanisole (TCA, "cork taint") due to its non-chlorinated formulation
Won't add salinity to process water like bleach

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Sources: Penn State Horticulture and Extension | Heritage Systems. 2005. Advantages of Using Peroxyacetic Acid (PAA) in Winery Sanitation Operations | Kramer JF. 1997. Peracetic acid: A new biocide for industrial water applications. Materials Performance, 36 (8):42-50 | Elsevier [Orth R.J. 1998. International Biodeterioration & Biodegradation, 41:201-208 | Journal of Wine Research. 2016 | Infowine [Libretti/libretto 7855-01-1] | Eowinelab [Orr] PAA | Ohmart, C.P. 2011.

DOWNLOAD THE PAA WINEMAKING INFOGRAPHIC

LEARN MORE ABOUT PAA FOR WINERIES

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Enviro Tech and Arxada food safety products featured in booth #433 May 4, 2022 – Modesto, Calif. – specialty chemical manufacturer Enviro Tech Chemical Services (ETCS) – an Arxada company – is showcasing the world's first and only dry peracetic acid (PAA) floor and equipment sanitizer at the Food Safety Summit, May 10-12, 2022 in Chicago.

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