Planetary CARE

Building Global Resilience through Regeneration

ASAM APPLICATIONS GUIDE

ASAM Applications for Orchards & Vineyards

Seasonal Guide for Perennial Crops — ASAM-C & ASAM-A

VOLUME II • ORCHARDS & VINEYARDS

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These recommendations are generalized guidelines for using ASAM-C and ASAM-A in orchards and vineyards. For custom programs that consider soil type, climate, current fertility, cultural techniques, and economic analysis, contact TerraFerm for consulting services.

INTRODUCTION

About This Guide

This guide is written for orchard and vineyard managers, perennial-crop growers, and agricultural consultants who wish to incorporate ASAM (Advanced Syntropic Antioxidative Microbes) into their soil health and crop management programs. ASAM products — widely known in the field under the EM (Effective Microorganisms) umbrella — have been used in orchards and vineyards globally to improve soil biology, foliar health, disease suppression, and post-harvest quality.

TerraFerm supplies pre-measured ASAM dry and liquid ingredient kits. When combined with ASAM-C (the commercial culture), blackstrap molasses, and water, these kits produce a high-quality brewed ASAM-C concentrate ready for field use. For cost-effective field applications at scale, ASAM-C is further extended into ASAM-A (Activated ASAM) following TerraFerm's activation protocol.

This guide covers foliar and soil applications for perennial crops, divided into two primary sections: foliar treatment and soil treatment. In order to reduce cost per acre, it is recommended to use ASAM-A for all field applications. See TerraFerm.org for activation instructions.

What Are ASAM-C and ASAM-A?

ASAM-C (Commercial ASAM) is the full-strength brewed ASAM-C concentrate — the complete fermented microbial product produced using TerraFerm's ASAM ingredient kits combined with ASAM-C starter culture, blackstrap molasses, and water. ASAM-C has a shelf life of 2+ years when stored properly and is the base product for all field applications.

ASAM-A (Activated ASAM) is produced by extending ASAM-C with water and blackstrap molasses and allowing the mixture to ferment under anaerobic conditions for 5–10 days. The result is a larger volume of active product at a fraction of the cost of ASAM-C. ASAM-A must be used while still active — a pH below 3.8 and a pleasant fermented aroma are quality indicators. For activation ratios and full instructions, see TerraFerm.org/education.

Important Disclaimer

- Application ratios and frequencies given here are starting points, not prescriptions. Soil type, climate, crop variety, water quality, disease pressure, and management history all require adaptation.
- When increasing ASAM-A concentration for foliar applications, treat a small test plot first and monitor crop response for 24–48 hours before treating the full orchard or vineyard.
- Regulatory requirements for microbial products vary by state, province, and country. Buyers are responsible for confirming labeling, registration, and compliance requirements for their finished ASAM product.

FOLIAR APPLICATION

Seasonal Application Schedule

Consistent, season-long foliar treatment is the foundation of an effective ASAM program for orchards and vineyards. Each season has distinct goals: suppressing disease carryover in winter, protecting vulnerable new growth in spring, supporting fruit quality in summer, and maximizing post-harvest recovery in fall.

WINTER

Apply ASAM-A once a month as a foliar treatment to dormant trees or vines and to the leaf and fruit litter from the previous year. Many fungal and bacterial diseases overwinter in this residue — inoculating and composting this material early breaks the disease cycle. Remove and compost treated residue with additional ASAM-A applications.

SPRING

When bud swell begins, increase ASAM-A foliar application frequency to every 2–3 weeks. During wet springs or when temperatures become conducive to mildews, rots, or fire blight, increase to every 7–10 days. Spray blossoms at a dilution rate of 1:250 (ASAM-A:water). Do not apply at concentrations stronger than 1:250 to open blossoms, as this may interfere with pollination.

SUMMER

Apply ASAM-A every 2–4 weeks as fruit matures. With more frequent treatments, fruit may develop improved color, size, and overall quality. Continue monitoring for disease pressure and adjust frequency accordingly. ASAM-A applications during this period support soil biology and root health in addition to foliar protection.

FALL / POST-HARVEST

Spray ASAM-A on trees or vines within 48 hours before harvest to maximize post-harvest fruit quality and storage life. Resume the winter schedule (monthly foliar) after harvest. Fall is also an ideal time for soil applications to re-establish microbial populations in the root zone before winter dormancy.

Note: During the first year of treatment, it is critical to apply ASAM-A on a consistent basis to ensure initial establishment of beneficial microorganisms in the soil and on plant surfaces. Gaps in application during Year 1 will slow establishment and delay the full benefits of the program.

FOLIAR APPLICATION

Dilution Rates by Crop Age

Dilution rate varies by the age and maturity of the tree or vine. Young plants have more sensitive tissue and require more dilute ASAM-A applications; mature trees and vines can tolerate — and benefit more from — stronger concentrations. All rates below use ASAM-A diluted in water. Blackstrap molasses may be added at an equal ratio to ASAM-A if desired.

Seedlings — Year 1 (1 year old or less)

- Foliar application rate: 1:500 (ASAM-A:water)
- Apply every 2–4 weeks during the growing season, and once monthly in winter.
- Young tissue is sensitive — do not exceed 1:500 without a test plot trial.
- Focus Year 1 applications on building soil biology around the root zone rather than aggressive foliar programs.

Saplings — Years 2–3

- Foliar application rate: 1:250 (ASAM-A:water)
- Apply every 2–3 weeks during growing season; monthly in winter.
- During high disease pressure (wet spring, cool temperatures), apply every 7–14 days.
- Test new batches of ASAM-A on a small section before full-block treatment.

Mature Trees & Vines — Year 4 and Older

- Foliar application rate: 1:100 (ASAM-A:water)
- Apply every 2–4 weeks during the growing season; monthly in winter.
- Under high disease pressure, apply every 7–10 days.
- At these concentrations, soft-bodied pest insects on foliage are commonly suppressed within 24–48 hours of application.
- Do not spray at concentrations stronger than 1:100 without a test plot trial first.

Vineyard Sulfur Alternation Program

For grape vineyards using bi-weekly sulfur applications throughout the growing season for powdery mildew management, ASAM-A can be integrated into the spray program in alternation with sulfur:

- Apply ASAM-A at 1:100 every other week, alternating with the standard bi-weekly sulfur application.
- This approach maintains protective foliar coverage every week while reducing sulfur application frequency by approximately 50%.

- Many growers report that consistent ASAM-A use over one or more seasons allows further reduction in sulfur inputs as vine health and surface microbial ecology improve.
- Do not tank-mix ASAM-A with sulfur or copper fungicides — apply on alternating days.

FOLIAR DILUTION REFERENCE — BY CROP AGE

Seedlings — year 1	**1:500 (ASAM-A:water)**
Saplings — years 2–3	**1:250 (ASAM-A:water)**
Mature trees & vines — year 4+	**1:100 (ASAM-A:water)**
Blossoms & open flowers	**1:250 (do not exceed)**
Vineyard sulfur alternation	**1:100 ASAM-A, every other week**

BEST PRACTICES

Application Tips

Effective ASAM-A application in orchards and vineyards depends on timing, consistency, and technique. The following practices maximize results and avoid common pitfalls.

Timing for Disease Pressure

Timing of ASAM-A application can be critical during periods of high disease pressure. When possible, make applications 24 hours before potentially damaging climate changes — warm rain events, expected frosts, high winds, extended heat, or high humidity conducive to mildew. This allows the ASAM-A microbial community to establish on leaf and bark surfaces before the stress event, providing competitive exclusion against pathogenic organisms.

First-Year Establishment

During the first year of treatment, consistent application is critical. ASAM microorganisms must establish in the soil profile and on plant surfaces before the full ecosystem-level benefits emerge. Gaps or interruptions during Year 1 significantly slow this process. Even a simple monthly application is far better than irregular bursts followed by weeks of absence.

Time of Day

Apply ASAM-A in the morning or evening when the solar index (UV intensity) is lowest. Morning application is preferred because leaf surfaces are often wet with dew, which helps spread and absorb the spray. High midday sun and heat can degrade beneficial microbes before they establish on leaf surfaces.

- Mornings: preferred — dew provides ideal conditions for microbial contact and adhesion.
- Evenings: acceptable — foliage cools as temperature drops, reducing evaporative loss.
- Midday: avoid during summer heat — high UV and heat reduce viability of applied ASAM-A.

Test Plot Protocol

When increasing ASAM-A concentration or switching to a new batch, always treat a smaller test area first and monitor crop response for 24–48 hours before treating the entire orchard or vineyard. This is especially important at concentrations stronger than 1:250, in early spring when new growth is tender, and when mixing ASAM-A with other spray program inputs.

What to Watch for After Test Applications

- Leaf tip or margin burn — may indicate concentration is too strong for current tissue stage.
- Wilting or chlorosis — rare at recommended rates but possible if ASAM-A quality is poor or application is made in very high heat.
- No adverse response within 48 hours — proceed with full-block treatment at that rate.
- Positive response (improved color, turgidity, pest knockdown) — confirm the rate is effective and continue.

SOIL APPLICATION

Soil Treatment Schedule

Soil treatment is the foundation of a long-term ASAM program for perennial crops. While foliar applications address immediate disease suppression and fruit quality, consistent soil applications build the microbial ecology of the root zone, improve soil structure, and create the biological diversity that makes orchards and vineyards more resilient over successive seasons.

Benefits of Soil ASAM Applications in Orchards & Vineyards

- Improved soil structure and water infiltration in compacted inter-row zones
- Increased populations of beneficial bacteria and mycorrhizal fungi in the root zone
- Reduction in pathogenic soil microbes that carry over season to season
- Increased nutrient availability and Brix in fruit over time
- Greater vine and tree resilience to drought, salinity, frost, and disease
- Improved breakdown of crop residues and cover crop biomass
- Accelerated compost maturation when ASAM-A is applied to windrows on-site

Overview & Application Rate

Apply (inject) ASAM-A into irrigation water at a rate of 5 gallons per acre, 4 to 8 times per year depending on soil health, organic matter levels, and the overall biology program in place. Orchards and vineyards with poor baseline soil biology should apply at the higher frequency (6–8 times) until soil health indicators improve. Established programs can reduce to 4 times per year.

Irrigation Injection

Inject ASAM-A directly into drip or micro-irrigation systems using a venturi injector, peristaltic pump, or proportional injector. A ratio of 1:100 to 1:500 (ASAM-A in the irrigation supply line) is appropriate for most systems, targeting uniform distribution through the root zone.

- Do not mix ASAM-A with chlorinated water — flush chlorine or treat supply water first.
- Inject ASAM-A near the beginning of the irrigation cycle, allowing 15–20 minutes of regular flow after injection to push ASAM-A fully through the system.
- Do not mix ASAM-A with chlorine, copper, or hydrogen peroxide in irrigation lines.

Cover Crop & Ground Cover Application

Spray ASAM-A at a 1:100 dilution on cover crops or inter-row ground cover before or after mowing, or before incorporation (ploughing in) of the cover crop. This accelerates surface biomass decomposition and inoculates the soil with beneficial microbes simultaneously. Timing the application 24–48 hours before mowing allows the microbes to begin establishing before the physical disruption of incorporation.

For vineyards using composted pomace or other winery by-products as soil amendments, applying ASAM-A to compost windrows at 1:400 during turning accelerates maturation and produces a finished product with higher microbial diversity.

SOIL TREATMENT — DILUTION REFERENCE

Irrigation injection — drip/micro	**1:100 to 1:500 (ASAM-A in supply line)**
Soil application rate	**5 gal ASAM-A per acre**
Application frequency — establishing	**6–8 times per year**
Application frequency — established	**4 times per year minimum**
Cover crop spray	**1:100 (ASAM-A:water), before mowing**
Compost windrow treatment	**1:400 (ASAM-A:water), at each turn**

About TerraFerm

TerraFerm is the agricultural biologicals division of Planetary CARE.org (PCARE), a mission-driven organization focused on regenerative approaches to soil health, food security, and ecological resilience. TerraFerm provides pre-measured ASAM brewing ingredient kits, educational resources, and consulting services to help growers, distributors, and entrepreneurs establish effective ASAM programs on their farms and properties.

TerraFerm does not sell ASAM-C starter culture as part of a packaged kit. Buyers source ASAM-C independently through TerraFerm's recommended affiliate suppliers, then combine it with TerraFerm's ASAM ingredient kits, molasses, and water to brew their own ASAM-C product. Custom consulting programs for orchards and vineyards are available — contact TerraFerm for details.

Contact & Resources

- **Website:** TerraFerm.org
- **Education & Training:** Online courses covering ASAM brewing, ASAM-A activation, soil biology, and batch documentation — TerraFerm.org
- **Consulting:** Custom orchard and vineyard ASAM programs, discovery calls, and ongoing support — TerraFerm.org/consulting
- **Shop:** ASAM Dry Kit, Liquid Concentrate Kit, and enhancement add-ons — TerraFerm.org/shop

Disclaimers: *Application methods and results may vary by crop variety, soil type, climate, water quality, management practices, and local regulations. Buyers are responsible for confirming labeling, registration, and compliance requirements in their state, province, or country. Organic certification claims should only be made after confirmation with the buyer's certifier or applicable certifying body. This material is educational and does not replace professional agronomic, regulatory, or legal advice. ASAM products are not marketed as drugs, medications, or pesticides.*

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