Silicon-based materials have been used for decades for natural control of fungal plant pathogens, insects and spider mites. They feature multiple modes of action and multiple benefits.

When applied to plant foliage as a preventive, the silicon in Sil-MATRIX is taken into the plant cuticle and forms a silicon matrix that acts as a physical barrier. Pathogenic fungi (using infection pegs) and spider mites (with their piercing sucking mouthparts) have difficulty penetrating the silicon barrier. As foliar sprays of Sil-MATRIX dry, the potassium silicate that is not incorporated into the plant cuticle forms a layer of silicon crystals on top of the leaf surface. Like silicon-based diatomaceous earth products, the Sil-MATRIX silicon crystals create open wounds in the exoskeletons of spider mites and other small plant parasitic insects that encounter them. The wounds cause a fatal loss of water (desiccation) and death. Sil-MATRIX also helps plants regulate water, ensuring a healthier plant that can better resist an assault by fungi and mites.

Stable formulation. Sil-MATRIX is an easy-to-use liquid with a stable shelf life without special storage requirements.

REI/PHI. Sil-MATRIX can be used up to the day of harvest and work can resume in the treated area 4 hours post application. It is NOP Approved and OMRI® Listed.

Export friendly. Sil-MATRIX is exempt from residue restrictions.

Perfect fit for Integrated Pest Management (IPM). Because of its activity against fungi, spider mites and small piercing sucking insects, the option now exists for growers to reduce adding both a fungicide and insecticide at times when they are typically tank mixed.

Beneficial and plant friendly. Sil-MATRIX has been shown to be safe on beneficial arthropods and safe for plants.

Perfect fit for resistance management programs. Since Sil-MATRIX does not rely on an organism’s metabolic pathway for control but instead inhibits damage through physical barriers and desiccation, it will not increase the probability of resistance to currently registered fungicides or insecticides.

For best results. Apply Sil-MATRIX as a preventive at a rate of 0.5-1.0% volume-to-volume. The addition of a non-ionic surfactant has been shown to enhance efficacy against powdery mildew.

A liquid source of potassium and silica. Sil-MATRIX includes a nutrient bonus of 8% K₂O and 21% silicon dioxide (SiO₂) by weight. Most producers are familiar with the benefits of potassium as an essential plant nutrient.Silica is often a forgotten element that has many benefits, including strengthening cell walls for more resilient plants, improving photosynthesis, quality and yields, enhancing pollination and pollen fertility, and reducing the negative effects of excess aluminum, manganese, and sodium.
Sil-MATRIX®

**Control of Two-Spotted Spider Mite (Tetranychus urticae)**

*T in Strawberries*


- Untreated
- Sil-MATRIX® 0.75% v/v Agri-Mek® 10 oz/acre

Additional TSSM were transferred onto plants at 6 days after application.

**Control of Grape Powdery Mildew (Uncinula necator)**

*T in Chardonnay Grapes*

Eldorado Ag Consulting, Shingle Springs, CA (2004)

- Untreated
- Sil-MATRIX® 2 qt/100 gal
- Sil-MATRIX® 2 qt/100 gal alt w/Abound® 12.8 fl oz/acre and Flint® 2.0 oz/acre
- Micro Sulf® 5 lbs/acre alt w/Abound® 12.8 fl oz/acre and Flint® 2.0 oz/acre

**Control of Powdery Mildew (Leveillula taurica)**

*T in Tomatoes*

University of California, San Joaquin County 2009

- Untreated
- Sil-MATRIX 0.5%
- Sulfur Dust (98%) 40 lb/acre
- Sulfur DF 20 lb/acre
- Sil-MATRIX 1.0%

**Control of Powdery Mildew (Leveillula taurica)**

*T in Tomatoes*

University of California, San Joaquin County 2009

- Untreated
- Sil-MATRIX 0.5%
- Sulfur Dust (98%) 40 lb/acre
- Sulfur DF 20 lb/acre
- Sil-MATRIX 1.0%

**Percent Fruit Rot from Anthracnose, First Yield**

*T in Blueberries*

Michigan State University, East Lansing, MI (2010)

- Untreated
- Sil-MATRIX® 3 qt
- Indar® 6 oz, Captec® 2 qt, Pristine® 23 oz alternation
- Luna® Tranquility 16 oz

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(1) Sil-MATRIX treatments included 8.0 fl oz/100 gal No Foam®

(2) Alternated treatment dates are: Sil-MATRIX on April 9, 16 & 23; Abound® on April 30 and May 29; Flint® on May 14 & June 11.