Agriculture

Case Study

SA-1000 + SoilGuard™ Na

Driving Soil Health & Pistachio Yield with SA-1000 & SoilGuard™ Na

A 5,000-acre pistachio operation in Kerman, California was experiencing salinity and sodium infiltration challenges that threatened root health, water infiltration, and nutrient uptake across several blocks. Elevated sodium and bicarbonates were reducing infiltration, causing nutrient tie-up, and impairing tree vigor. The grower sought a cost-effective program to reclaim soil health and maintain long-term productivity.

Benefits

- **Reduced Sodium Hazard**
- **Improved Nutrient Mobility**
- **Enhanced Water Infiltration**
- **Sustainable Cost Management**

Background

A mid-season evaluation in July 2025 across six pistachio blocks tracked the impact of Apex Ag Technologies' soil amendments. Treatments included SA-1000 banded applications and Soil Guard Na continuous feed. Data integrated soil, tissue, and water analysis to measure impacts on sodium displacement, calcium mobility, phosphorus availability, and iron balance

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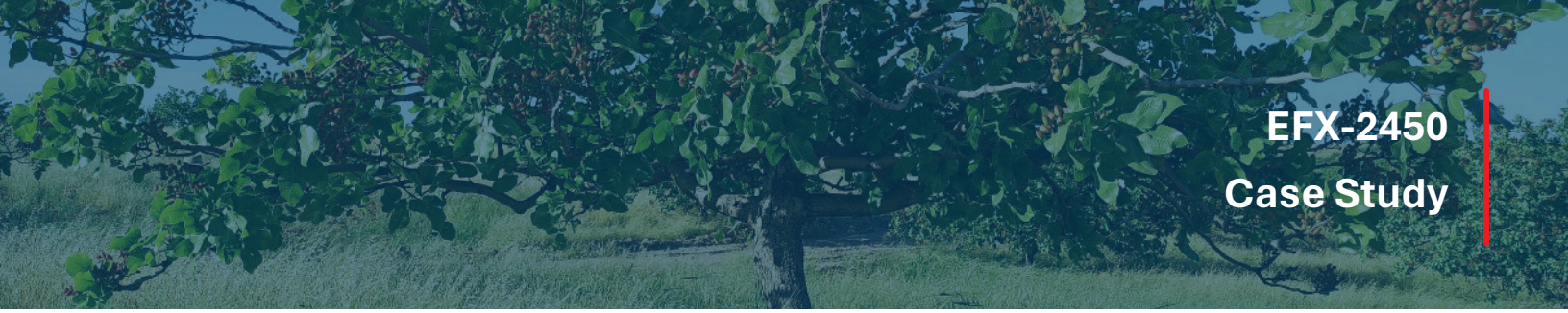

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Case Study

Challenges

A 5,000-acre pistachio operation in Kerman, California was struggling with elevated sodium and bicarbonates in its irrigation water. These conditions reduced infiltration, tied up key nutrients like calcium and iron, and created variability across blocks, with some sections showing SAR values nearly double others. Left unmanaged, the soil imbalance threatened long-term tree health, yield, and profitability.

Solutions

The grower adopted a two-part treatment program using SA-1000 and Soil Guard Na to displace sodium, mobilize calcium, and improve phosphorus availability. SA-1000 was applied in band treatments while Soil Guard Na was delivered continuously in select blocks, supported by a line maintenance program. Ongoing sampling tracked improvements, and a winter leaching project is planned to flush residual sodium and strengthen soil structure before the next crop.

Results

The treatment program delivered measurable improvements across the pistachio blocks. Compared to 2024, SAR and ECe levels declined, showing that sodium was being displaced and salinity reduced. Calcium and phosphorus became more available in the root zone, supporting stronger nutrient uptake. Depth-based soil analysis confirmed progress, with sodium levels dropping and calcium increasing at deeper layers — evidence of improved infiltration and soil structure. Tissue tests reflected balanced nutrition, particularly in phosphorus, while iron tie-up began to ease. Economically, the program cost averaged $130/acre, with efficiency gains expected through fewer remediation needs. Encouraged by these results, the grower plans to expand with a winter leaching project to further reduce surface salts and strengthen long-term soil health

- ✓ Reduced SAR & ECe vs. 2024 baseline
- ✓ Mobilized calcium & phosphorus in root zone
- ✓ Improved nutrient balance and infiltration
- ✓ Cost-effective treatment with scalable leaching strategy