ZYLYM™ WFS Field Trials

Western Farm Service documented field trials in turf and agriculture. The following pages (sample case studies) document improved effectiveness of water use and desirable leaching effects for multiple growing applications using the ZYLYM™ technology.

ZYLYM™ Lake Circulation Unit

Advantages include clarity of the water greatly improves, filaminis algae lessens, and there is additional conditioning provided with multiple passes through ZYLYM™ lake unit.

ZYLYM™ Superior water delivery through drip irrigation

Executive Summary of More Water Per Hour To Roots with ZYLYM™

Results of ZYLYM™ project at: UNIVERSITY OF CALIFORNIA – RIVERSIDE, CA

A research project at the University of California, Riverside tested the impact of ZYLYM™ on water delivery through drip irrigation systems. The results: Tubing using ZYLYM™ treated water containing fertilizer delivers 230% more water per hour to the plants' root systems than the tubing without ZYLYM™.

ZYLYM™ delivers 46% more water containing fertilizer than tubing without ZYLYM™ and without fertilizer.

There was greater yield of the broccoli crop using ZYLYM™. Research done by: Dr. Jack Rible, University of California, Riverside

UNIVERSITY of CALIFORNIA Riverside

ZYLYM™ Improved Root Development

Improved root system growth occurs with ZYLYM™. Same amount of growing time, same soil. ZYLYM™ helps water leach into the ground, instead of evaporating off the soil surface.

Untreated Treated

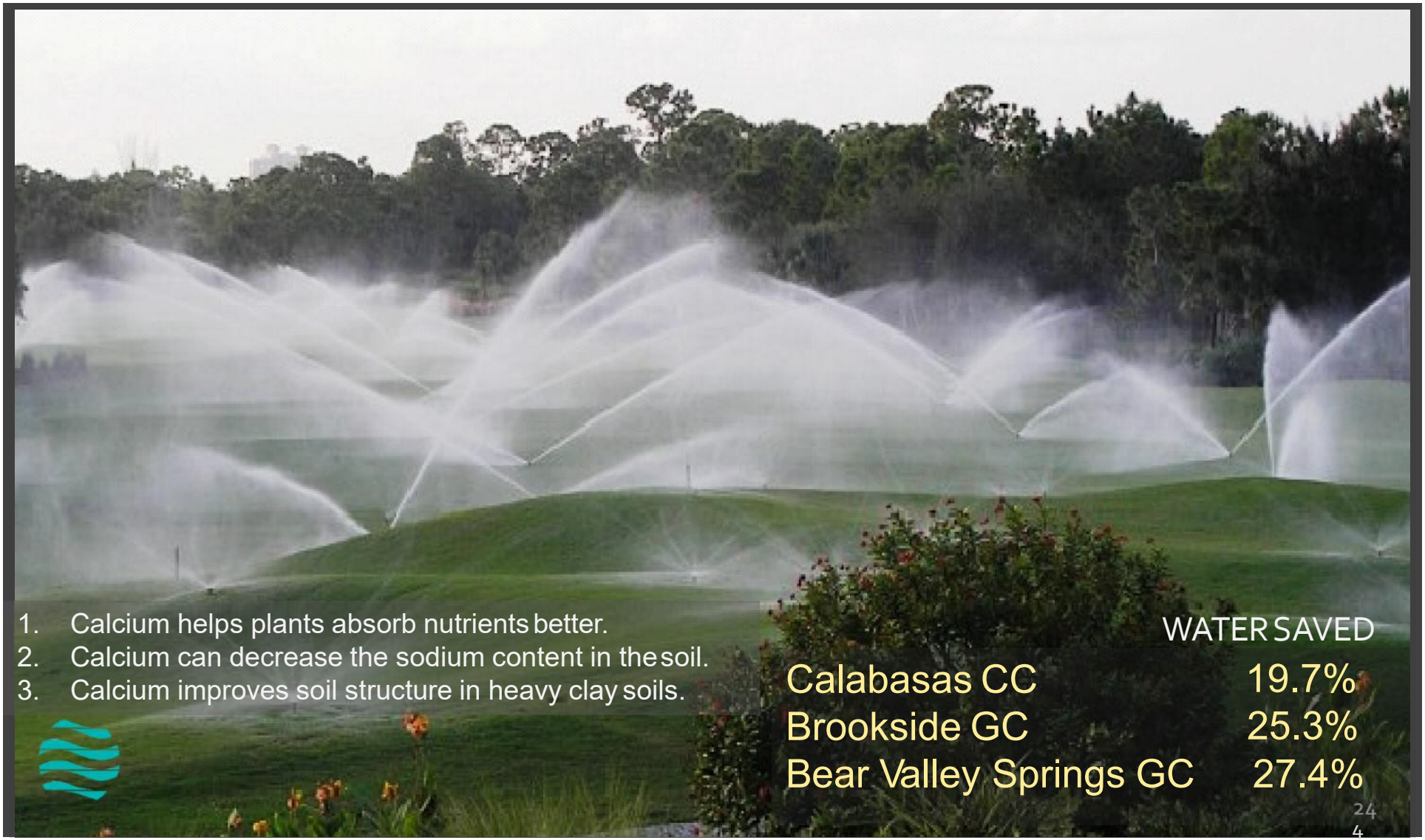
Root propagation with ZYLYM™ conditioned water (on right) is obviously better, with larger root structure and foliage development.

Documentation completed by:

Mt. San Antonio College

ZYLYM™ Results of Water Saved

Calcium helps regulate water and nutrient uptake by the roots



1. Calcium helps plants absorb nutrients better.
2. Calcium can decrease the sodium content in the soil.
3. Calcium improves soil structure in heavy clay soils.

	WATER SAVED
Calabasas CC	19.7%
Brookside GC	25.3%
Bear Valley Springs GC	27.4%

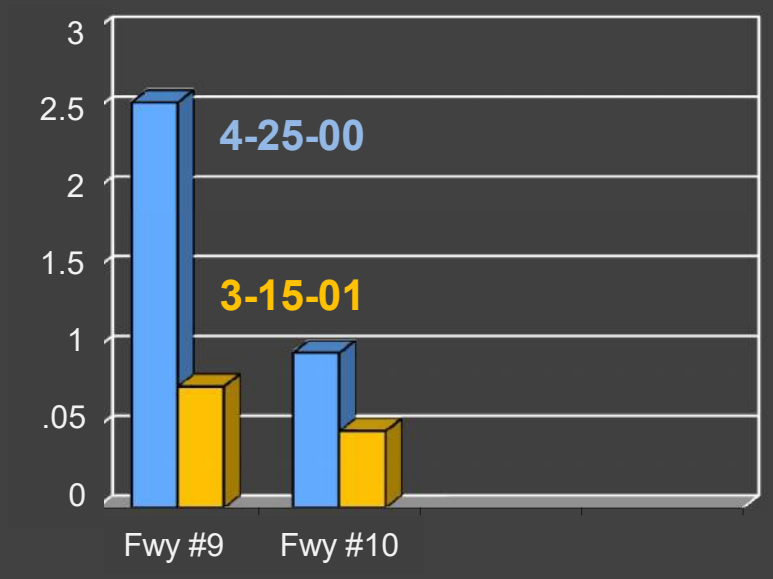
ZYLYM™ Cypress Ridge Golf Course

Soil ElectroConductivity

Soil ElectroConductivity

Mil Equivalents Per Liter in the Soil

Before / After



With ZYLYM™, over 50% reduction in soil EC in one year in top 6” of soil is giving the big advantage of lowering harmful salts, allowing for better turf growth.

ZYLYM™ Barney Swartz Ball Park

Before and After

Un-treated field (before)

Brown patches and growth before ZYLYM™

Treated with ZYLYM™ (after)

Healthy green grass in baseball diamond

New park started with high soil ElectroConductivity (EC). In less than one year with ZYLYM™, greatly reduced soil EC indicates much improved soil quality. Sodium in the soil is reaching a much more desirable equilibrium with the irrigation water, allowing healthier turf growth.

ZYLYM™ Grapes and Vineyards

Grapes with NO ZYLYM™ Treatment

- Sulfuric acid treated Cabernet Sauvignon
- Poor growth indicating chlorosis
- Fewer leaves
- Reduced flower spikes per vine

The skin of the grapes in the untreated ZYLYM™ control area broke easily and often while they were being harvested.

ZYLYM™ Grapes and Vineyards

Grapes with ZYLYM™ Treatment

- Treated Cabernet Sauvignon
- Darker more vigorous growth
- More leaves
- More flower spikes per vine

The grapes in the ZYLYM™ test area were larger and the skin of the grape was firmer. The larger grapes meant bunches from the ZYLYM™ test area weighed more even if the bunches had the same number of grapes. The larger grapes were probably the major cause of the increase in yield between the ZYLYM™ test area and the control area.

ZYLYM™ Strawberry Shelf Life Test Results
Certified Test Site

Side-by-Side Shelf Life Comparison

The side-by-side comparison of strawberries grown in the same field, side-by-side beds in Oxnard, California. The grower isolated just one bed and installed a ZYLYM™ Model ZT-1 with a flow rate of 4.3 to 7.5 GPM. All other parameters remained the same. Please see next slide of actual photo of test area. Note the superior plant canopy coverage with ZYLYM™ treated water.

Calcium is essential for drought and stress tolerance, root development and plant growth. These tests were done at the start when the ZYLYM™ units were installed. Soil samples were repeated after just 45 days of the ZYLYM™ installation.

Track **7-Day** results…..

Strawberry Shelf Life Test Results

Certified Test Site

DAY 1 Shelf Life Results

ZYLYM™ increases calcium and improves cell structure

CONTROL

ZYLYM™ TEST

Research shows increased calcium prevents physiological disorders, increases resistance to disease, delays ripening and thus, improves quality and shelf life of crops.

DAY 7 Shelf Life Results

ZYLYM™ increases calcium and improves cell structure

CONTROL

ZYLYM™ TEST

The involvement of calcium in the regulation of fruit maturation and ripening is well established. It has been reported that fruit containing low calcium levels are sensitive to many physiological and pathological disorders, and consequently have short shelf-life.

ZYLYM™ ALFALFA

ZYLYM™ treated

Un-treated

ZYLYM™ treated alfalfa is denser and healthier.
Calcium is essential for drought and stress tolerance, root development and plant growth.

ZYLYM™ Sweet Potatoes

Calcium can mitigate heat stress effects on potato plants

ZYLYM™ Treated

Non-Treated

The ZYLYM™ sweet potatoes were larger and of better quality. The ZYLYM™ conditioned water supplies a continuing flow of calcium to facilitate calcium uptake by the tuber. Data from studies suggests that higher calcium tubers store better and have reduced incidence and severity of soft rot. It's well recognized that the cell membrane health is very crucial to the survival and health of the plant cell. It is now well established that the health of the cell membranes cannot be maintained in the absence of a critical level of calcium around the membranes. If the level of calcium associated with the membranes is reduced, the membranes become leaky resulting in an unabated loss of cellular salts and organic compounds. Such loss, if not reversed, leads to the eventual death of the cell. Studies also show that an appropriate level of calcium in the water can mitigate heat stress effects on potato plants.