



Go Organic!

Organic Farming in California—

HOW AN INNOVATIVE, WATER SAVING SYSTEM IS HELPING ORGANIC GROWERS WITH A VARIETY OF CHALLENGES

In spite of the worst drought California has seen in centuries, statistics from the California Certified Organic Farmers (CCOF) organization, indicate that organic farming is currently booming in the Golden State, with a significant increase in certified organic farms over the past several years. Since 2010, the CCOF has expanded by over 1.5 million acres—that's 2,343 square miles—of certified organic land.

How organic growers are not only weathering this water crisis, but also thriving during this time, is worth some exploration. Part of the answer lies with the alternative farming methods that organic growers employ. Using heavy mulches to reduce evaporation from the soil surface, better soil contouring, which reduces unintended runoff and also helps reduce erosion, and the use of artificial swales, (small depressions in the land designed to capture runoff and increase water infiltration) are some of the procedures used in organic farming to lessen the amount of water needed to grow healthy crops.

But in addition to these inventive organic farming methods, an increasing number of farmers are integrating a simple, innovative, non-chemical water treatment solution with their irrigation systems. It reduces the amount of water needed, helps keep moisture levels high in soil, and enhances the health and vitality of crops. According to the growers, themselves, this method of treating irrigation water is extremely effective in addressing a variety of issues that are challenging conventional and organic farmers. The solution is called Magnation Water Technologies.

“For the baby spinach... we typically got about 8,000 pounds per acre on average with normal irrigation. From the Magnation treated areas, we would end up with almost 9,000 pounds per acre.”

~Mike Thorp, California Organic Crop Consultant



BENEFITS OF “RAIN-LIKE” WATER

There are various scientific theories that explain just how Magnation Water Technologies products work. But as with so many scientific developments, it takes years of on-going testing and research to identify and verify the exact principles that are responsible for the results being reported. Simply put, the Magnation system creates “rain-like” water. What exactly is rain-like water? The National Aeronautics and Space Administration sheds some light on “The Anatomy of a Raindrop” in a short video on the NASA site. It describes a raindrop as the accumulation of moisture in clouds, high in the Earth’s atmosphere. As moisture builds, it forms round droplets, due to surface tension that makes the water molecules stick together. They stick together because they are more attracted to bonding with each other than they are to bonding with air. So, the water molecules in raindrops cling together forming drops, until they are acted upon by some external force. In the case of rain, the external force is present when the rain begins to fall from the clouds. The drops are affected by air pushing against them as they fall, because the airflow on the bottom of the raindrop is greater than the airflow on the top of the raindrop and creates pressure on the drop.

The bigger the raindrop, the faster it falls, and the more it is affected by air pushing against its bottom. The continued force breaks the drops up into smaller drops. By the time the droplets hit the earth, the water molecules are smaller, more agitated and accordingly, more vibrant and useful to growing crops. Farmers all agree, the very best water for irrigating their crops is RAIN water.

It is believed that, in this same way, as irrigation water passes through the Magnation system, its molecular structure is broken down into smaller, more bioavailable clusters, allowing a greater amount of oxygen and nutrients to infiltrate the soil. Scientists and farmers alike have theorized about the many different principles of physics that apply to the transformation of the water when it passes through a magnetic field. The use of the Magnation water treatment has consistently resulted in more vitalized, softened, “rain-like” water that more easily penetrates soil, “spreads” across a wider area of ground, helps soil retain moisture, stimulates soil nutrients and enhances plant growth and health.



EXAMPLES OF HOW MAGNATION IS HELPING ORGANIC GROWERS

Mike Thorp, an organic farm consultant based in Salinas, CA, has been farming for almost four decades. Having worked on his own farms and for large agricultural businesses such as Tanimura & Antle, one of the largest lettuce producers in the United States, and Duncan Family Farms, based out of Phoenix, AZ, Thorp has a long and varied history of experience in overseeing all aspects of creating, transitioning and maintaining organic grounds and crops. When he first heard about Magnation’s method of treating irrigation water, he was curious, but wanted to test it out for himself before deploying the system.

Testing Magnation On Organic Baby Spinach

Thorp’s test was to compare an untreated area of planted baby spinach to the same size area that was irrigated with water treated by Magnation. Each area was between one and one and a half acres. The ground in the middle that separated the two parcels of land was disregarded. According to Thorp, “We did four of those kinds trials during the course of one year and we were able to get very specific results. On the areas that were treated with the Magnation unit, there was an 8-10% increase in crop yield. In addition, I observed that on really hot days the crops in the non-treated area were wilting and looking tired, whereas the crops in the treated area looked quite perky and healthier. I believe that the Magnation treated ground retained more water. On really hot days, the treated crops didn’t seem to be

affected and the weight of the crops were good. So even after they were picked they retained their weight. I also believe that the shelf life of the crops was extended with the Magnation treatment. For the baby spinach... we typically got about 8,000 pounds per acre on average with normal irrigation. From the Magnation treated areas, we would end up with almost 9,000 pounds per acre.”

MAKING WATER MORE “AVAILABLE” FOR PLANTS

Paul Frey, President and Winemaker at Frey Vineyards in Hopland, CA, attended UC Santa Cruz, as a physics major, and soon after college began to apply his knowledge of science to his work at his family’s Vineyards. Frey Vineyards is America’s first organic winery and the first maker of certified Biodynamic® wines in the U.S. Today, Frey is regarded as one of the world’s leading experts in organic winemaking. He constantly experiments with new techniques and keeps informed of all the latest innovations in winemaking and beyond. That’s how he discovered Magnation. Having done a lot of research about water, Frey was curious how Magnation worked and still interested in exploring the possibilities. So far he has a few theories:

“Water is a polar molecule. One side is positively charged and one side is negatively charged. It’s well known in standard physics that when you move a charge through a magnetic field, it will be deflected. That’s standard physics. So there is a rotation or force that is exerted on water molecules when water



goes through a magnetic field. There are also theories that water molecules form together in clusters. One could say that a strong magnetic field could definitely have an effect on these clusters, though there needs to be further research on all of the ways that it does affect it. It's well known that magnetics have been applied to water to help hard water become 'softer'. It makes sense that using Magnation helps water become more 'available' for plants."

TRANSFORMING BAD WELL WATER TO USABLE IRRIGATION WATER

Magnation has demonstrated its effectiveness in growing healthy, chemical-free crops a variety of ways. The water treatment not only lessens the need for irrigation water by making it more efficient and "rain-like", it also stimulates the water so impurities and non-essential mineral components are flushed away. Take, for example, Pat Herbert's experience with using Magnation for his organic farm in Hollister, CA.

Herbert has been farming his entire life. His family has farmed in the area since 1868. When he was faced with no longer having access to Federal

water several years ago, he knew he would need explore other options to irrigate his farm. "Our main problem has always been the high Boron levels in the ground water," said Herbert. "Going all the way back to the 1940's... we've never been able to grow anything with that water."

When Herbert heard about the Magnation Water treatment system, he was extremely doubtful that it would solve a problem that had existed for so long. "We first tried the treatment on our house well, and we tested it by planting some strawberries and peppers, which are typically very sensitive plants." For the first time ever, the Boron had no effect on the plants, which grew healthy and strong. It was after that experiment that Herbert decided to drill a well for his farm; hoping that the water treatment would eliminate the long-standing Boron issues. "Now we're growing a lot of peppers—one of the most sensitive plants—and we have absolutely no problem with the water since using this treatment," said Herbert. When he shares this experience with other growers, they have a hard time believing it. "It's like a miracle, as far as I'm concerned," said Herbert.



FACILITATING SEED GERMINATION

As the use of Magnation for organic farming flourishes, the more farmers are experimenting with new and different ways that the treatment can benefit their crops. The company has numerous examples of growers who are using the Magnation method to expedite seed germination in addition to treating their water.

Wayne Gularte has first-hand experience with using Magnation to help with seed germination. He and his family have been farming in the Salinas Valley for 25 years. With a keen interest in science (he studied quantum mechanics and other science-related subjects in college), his interest was piqued when he first heard about the Magnation water treatment and he decided to test it out on his organic farm.

“At the time, I was looking for something to help me get better seed germination, and the results we got after using Magnation were really impressive,” said Gularte. “Not only was the seed germination faster, but the plants were healthier and we were able to get the crops to harvest more quickly. After using Magnation for a couple of years with such a good outcome, I was convinced enough to have units installed on all of my irrigation pumps.”

MAKING THE MOST OF YOUR WATER

Since Magnation is a low-cost, easily-deployed option for farmers, more and more organic growers are choosing to make the small investment that is required for them to reap the benefits of this simple, but powerful solution.

As Paul Frey emphasizes, water research is still in its infancy. However, he is willing to agree that there is something to the Magnation approach: “For organic farmers... there’s certainly potential. Magnetic fields are natural. We live in magnetic fields... when you pump water, in general, it’s already moving through a magnetic field, albeit a weak one. Water cascading down mountains and rain falling is already being affected by the earth’s magnetic field. Water has moved naturally through magnetic fields for billions of years.”

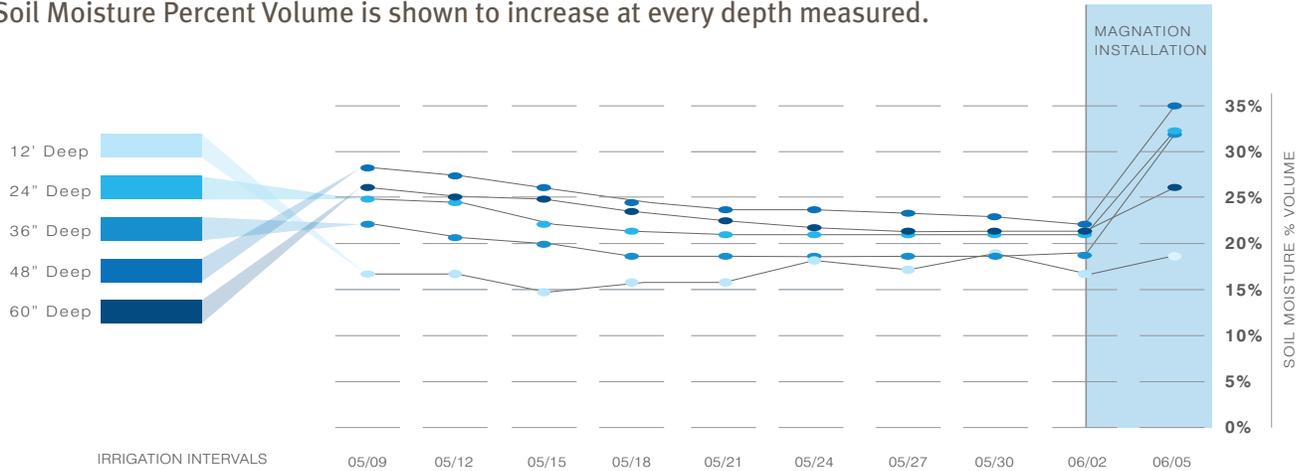
The way Mike Thorp sees it, “Especially in these times of drought, it’s important to try something new. Desperate times call for different measures. I tell people, ‘I’d like to know how it works, but that’s really less important than the fact that it does work ... *and it does work.*”

In the same way that organic farming takes a proactive approach as opposed to treating problems after they emerge, Magnation believes that its “pure” way of treating irrigation water to make it as naturally efficient as rain, is the key to minimizing issues with water, soil and crops. As evidenced by the organic farmers cited here, this approach is not only working on individual farms, but also supporting the growth of sustainable, organic agriculture for the future.

DATA: MAGNATION INCREASES SOIL MOISTURE RETENTION AT 12", 24", 36", 48" AND 60" DEPTHS

CONDUCTED BY MAGNATION CUSTOMER IN CHOWCHILLA, CA, 2013

Magnation installation shown in right column, below. Using PureSense® meter by Magnation customer, Soil Moisture Percent Volume is shown to increase at every depth measured.



“Got the tests back from the lab. Magnation’s system reduced the water hardness from 94.3 to 65.8 grains. A 30% reduction in hardness is significant in terms of percentages.”
~ Don Taylor, Fertilizer Manufacturer, TX

“Our results have been remarkable. Where we installed the Magnation unit, the corn out-yielded our other irrigated corn but used 30% less irrigation water.”
~ Lee Fintel, Superior, NE

“A dramatic difference with our boron toxicity and sulfur. With high boron levels we were able to grow strawberries and peppers; and our sulfur smell went away after installing Magnation’s water systems.”
~ Pat Herbert, Hollister, CA

“Noticing more nitrogen nodules fixation on the treated production with more credits in the soil for next year.”
~ Scott Borman, Schuyler, NE



For more information about Magnation Water Technologies

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For up-to-date information, connect with us!

