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Calendar of Events

California Weed Conference
January 22-24, 2014
Monterey, CA

www.cwss.org/conference.htm

AGRX Citrus/Avocado Meeting
March 2014 Date TBD

California Avocado Growers
Seminar Series 2014
Growing Avocados on Different Spacing

Feb. 4th San Luis Obispo 1-3 pm
Cooperative Extension Office/
Auditorium, 2156 Sierra Way,
San Luis Obispo

Feb. 5th Ventura 9-11 am
Cooperative Extension Office/
Conference Room, 669 County
Square Drive, Ventura

**High Density in the Field and
Uniconazole Use**

April 1st San Luis Obispo 1-3pm
Location TBA
April 2nd Ventura 9-11am
Location TBA

Well what has happened since the last newsletter ...

AGRX was once again at the Ventura and Santa Barbara County Fairs. Hopefully you were able to catch us at one of our booths. We were also at the livestock auction at the Ventura County Fair and have plenty of pictures of kids with their animals. We try to meet with all who have written us a letter and we usually come pretty close to accomplishing that.

Speaking of the fair leads me to my next subject. Many times I am asked what former AGRX employees are up to. Randy Malone

has become an award winning photographer, with one of his photos winning an award at the fair. You can look at some of his photos in this issue and I think you will agree they are beautiful.

We recently had our Customer Appreciation BBQ's in both Santa Maria and Oxnard. Everyone enjoyed the good food and company at both locations. The day after the BBQ, Santa visited with employees and their children at our Oxnard location. After pictures, passing out gifts and a hot dog

BBQ he was off to the North Pole.

I think we have some interesting articles in this issue, along with some photos, hopefully you find them helpful and informative.



Chris Oliva -Director of Sales

Merivon Xemium® Brand Fungicide

Xemium, a next-generation fungicide in the carboxamide family, was discovered by researchers at BASF headquarters in Limburgerhof, Germany. **Xemium** is a result of BASF experience in research and development, specifically in the carboxamide class of chemistry.

The active ingredient **Xemium** protects crops with three important characteristics:

- The high mobility of **Xemium** allows the product to systemically redistribute from the waxy layer of the leaf to areas of the leaf that are not directly sprayed, protecting the whole leaf and ensuring long-lasting and disease-stopping effects.

- **Xemium** blocks the respiratory Complex II, also known as succinate dehydrogenase (SDH). Blocking of Complex II disrupts the energy supply and biosynthesis of essential fungal building blocks, preventing new infections from developing.
- **Xemium** is active on a wide range of life stages of the fungus. Activity on multiple stages allows for a wider window of application and greater flexibility in product use.

Merivon is powered by **Xemium**® fungicide, a new active ingredient that continuously distributes its chemistry throughout the leaf to deliver more consistent disease protection. **Merivon** is a combination of **Xemium** and pyraclostrobin, the same active ingredient as in **Pristine**® fungicide. This combination delivers more continuous protection, Plant Health benefits and healthier,

higher-quality fruit.

As the active ingredient in **Merivon**, **Xemium** creates a reservoir on leaf surfaces that continuously distribute its unique chemistry throughout the leaf. This chemistry demonstrates extraordinary mobility and distribution throughout the leaf, reaching areas untouched by the initial application.

Field trials have demonstrated that **Merivon** consistently delivers Plant Health and high-quality disease control in target crops.

Merivon is currently registered for use on pome and stone fruit in CA. CA registration for strawberries, almonds and other crops is anticipated 1Q 2014.





Eliminating Sulphur as a Yield Limiting Factor

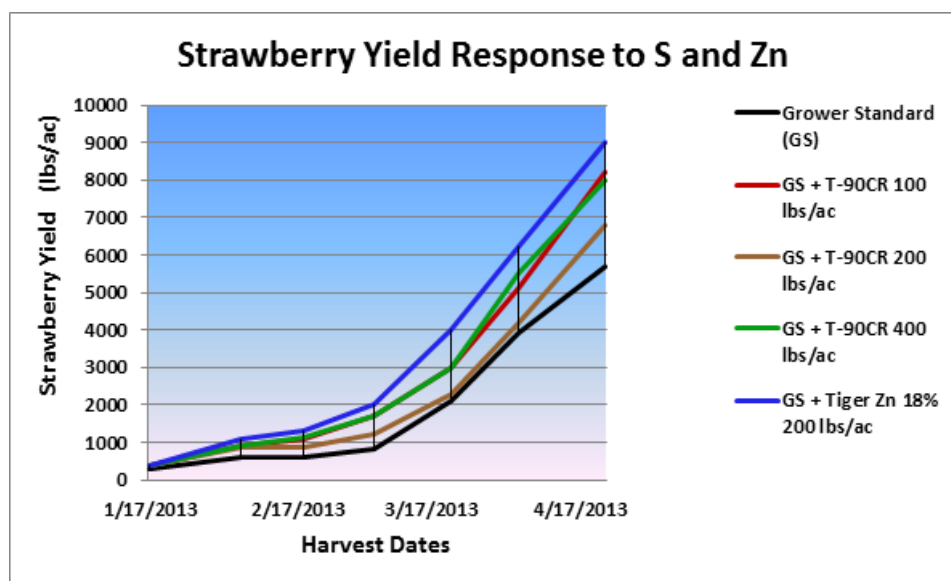
Understanding plant and soil interactions provides the foundation to effectively manage all plant nutrients. High cropping intensity and greater yields has accelerated sulphur removal from the soil and potentially result in more soils developing sulphur deficiency. A crop nutrient management program requires attention to more than just nitrogen, phosphorus, and potassium (NPK).

Sulphur has become the 4th essential nutrient that needs specific attention to previous crop draw-down. Sulphur is critical to plant growth as it is a component of amino acids and vitamins. Optimum crop production requires a balanced supply of nutrients. Unfortunately, there are differences in plant uptake of each nutrient due to various loss/fixation mechanisms in the plant-soil system. Therefore, nutrients probably will not be available to the crop in optimum proportions at all times. Several factors influence availability and nutrient balance within the soil system. Some of the influential factors on plant available nutrients and specifically sulphate include:

- 1) Sulphate is weakly adsorbed in most soils and displaced by phosphorus.
- 2) Leaching losses can occur with sulphate and other nutrients including nitrate, borate, and molybdate.
- 3) Sulphur deficiency in plants result in reduction of protein synthesis.
- 4) Nitrogen fixation in legumes requires ample supply of sulphur and phosphorus.

Granted, the impact of one or more of these interactions will depend on the crop. It is these types of interactions that result in “hidden hunger” of a nutrient. Hidden hunger occurs when plant nutrient concentration drops below optimum levels but is above the threshold that triggers physiological deficiency symptoms. Therefore, a crop that is not showing symptoms of nutrient deficiency may still not have a sufficient supply of nutrients to maximize yield potential. Oftentimes crop yields decline before deficiency symptoms are visible.

A research trial was established to evaluate possible sulphur hidden hunger issues in strawberries. This trial utilized the farmer’s normal soil fertility practices and compared the addition of Tiger 90CR® sulphur and Tiger Micronutrients® Zn 18% (graph 1.0). The addition of Tiger 90CR® and Tiger Micronutrients® Zn 18% reflected a significant advantage in strawberry yield. Observations of the crop revealed no obvious crop nutrient deficiencies. Although; this trial was one year and one location, it does illustrate the potential need to place more attention to details in eliminating yield limiting factors.



Wesley Haun; CPAg, CPSS, CCA
Research Agronomist
Fertilizer & Tiger-Sul Products
H.J. Baker & Bro

Office: 1-937-666-9122
 Cell: 1-203-451-3305
 Fax: 1-937-666-9123

Graph 1.0 Tiger 90CR® at 100 lbs/ac. and Tiger Micronutrients® Zn 18% at 200 lbs/ac resulted in significant yield response compared to the grower standard.
 (Research conducted by Holden Ag Research, Oxnard, CA 2013)

The Increasing Importance of Food Safety in Today's Society

Fresh fruits and vegetables are often thought of as healthful, nutritious foods having no risk of food borne illness associated with their consumption. The probability of getting sick from eating a raw fruit or vegetable is very low but a small probability does exist, especially in this day and age. The world around us, especially the agricultural world, is full of potential health and safety threats. The every day actions performed by individuals pose reason for something to potentially go wrong and this is becoming more relevant each and every day. Risks can occur at any stage of the process: growing, shipping, processing or consuming and this is the reason for more concern.

The main pathogens that are most commonly associated with fresh produce are: *Clostridium botulinum*, *Listeria monocytogenes*, *Salmonella spp.*, *Shigella spp.* and *E. coli* O157:H7. *Clostridium botulinum* is spore-forming rod that produces a potent neurotoxin. The spores are heat-resistant and can survive in foods that are incorrectly or minimally processed. The organism and its spores are widely distributed in nature. They are found in both cultivated and forest soils; bottom sediments of streams, lakes, and coastal waters. *Listeria monocytogenes* is among the leading causes of death from food borne illness. *L. monocytogenes* is hardy; it is salt-tolerant and not only can survive in temperatures below 1°C, but also grow in these conditions, unlike many other pathogens. It is also notable for its persistence in food-manufacturing environments. The bacterium is ubiquitous in the environment and can be found in moist environments, soil, and decaying vegetation. *E. coli* O157:H7 is also very prevalent and dangerous. The largest O157:H7 outbreak on record took place in Japan; radish sprouts were implicated and about 10,000 people were affected. Since then, O157:H7 has been implicated in numerous outbreaks that involved lettuce, salads, various types of sprouts, and, in 2006, bagged spinach.

However, the government and other organizations are working to help educate as many as possible about food safety and its importance regarding fruits and vegetables so the amount of those affected negatively by pathogens such as these begins to dwindle. For example, under the Food and Drug Administration (FDA), the Food Safety Modernization Act (FSMA) has been put into affect. This act has “set science-based standards for the safe production and harvesting of fruits and vegetables that the Agency determines minimize the risk of serious adverse health consequences or death” according to the FDA. Standards are set that correspond with identified routes of contamination of produce due to microbes; these include: water used for agricultural purposes, biological soil (such as manure), health and hygiene, animals in the area of production, as well as equipment, tools and buildings used.

Along with the FSMA, past land use also needs to be taken into careful consideration. If the production land was previously used for agricultural purposes, pesticide records must be obtained before new production begins to ensure that proper pesticide management practices were followed. This in itself will help to avoid many issues caused by a lack of precautionary measures, and if the land was previously used for hazardous waste disposal, industrial purposes or for grazing of livestock many serious issues could arise. Employee hygiene as well as sanitary work environments are also extremely important regarding food safety. The produce may be completely safe for consumption when harvested, but if the individual who places the produce in the shipping containers forgot to wash their hands after using the restroom or used a harvesting knife that was not properly cleaned and sanitized there is possibility for many pathogens to contaminate the product and grow, especially the pathogens previously mentioned.

In conclusion, there are a great number of negative side effects and illnesses that can occur if proper procedures are not abided by. The case with the bagged spinach in 2006 is a great example of this as 199 cases of illness due to *E. coli* O157:H7 infection occurred and were reported to Centers for Disease Control (CDC), including 31 cases of Hemolytic Uremic Syndrome (HUS), 102 hospitalizations and three deaths. If those who are unaware of situations like this become informed and everyone who comes into contact with any type of produce becomes educated about food safety and the risk factors that are involved, less and less of these horrible incidents will occur. There is no way to stray away from germs and microbes as they are all around us and always will be; however, if we as a society learn how to deal with them and be as safe as possible, we are moving in the right direction and doing as much as we can to promote a safe and healthy environment for all. - Written By Natalie Baldwin.

Natalie Baldwin is a senior at Cal Poly San Luis Obispo majoring in Dairy Science Processing with a minor in Agribusiness. She is a member of Agriculture Ambassadors, Los Lecheros Dairy Club, Collegiate FFA and California Women for Agriculture. Upon graduation in June she hopes to pursue a career in the food safety field.



Pesticides and Food Safety

Having worked in the research and development of new pesticides now for over thirty years, I think I can confidently say that the development side of new pesticides is providing much safer and more effective pesticides for use in the agricultural production of food and fiber. The problem though continues to be the perception that we in the industry do not handle these materials safely and that we are providing food that is tainted with dangerous products. The focus has been removed a little with the advent of "GMO" crops and other food safety issues that deal with microbial contamination of our food, but we have not been completely taken off of the food safety radar when it comes to pesticides.

Recently I heard a presentation by Dr. Carl Winter from the Food Science and Technology Department at the University of California, Davis. I would like to share a few things I learned from that presentation. A survey by the Food Marketing Institute found that 79% of those consumers surveyed think pesticide residues pose a serious health hazard with another 17% believing that they provide something of a hazard (that is a total of 96%)! In turn regulatory sampling of food at both the federal and state levels finds that the majority of food sampled contains no residues of pesticides (64% for domestic produced and 72% for imported food), that when residues are encountered they are well within the established legal tolerances (35% for domestic and 23% for imported), which leaves us with .9% of domestically produced food in violation and 5% of imported food in violation (FDA monitoring for 2008). The problem is tolerances are misunderstood by the public and illegal residues are not necessarily unsafe residues. Tolerances are established by estimating daily dietary exposure to pesticides, multiplying that number by 10,000 and then feeding this 10,000x quantity of pesticides to laboratory animals throughout their lifetime. Then what happens to the laboratory animals? Nothing! This is called the NOEL (or no observable effect level). Illegal tolerance levels are set at 1/10,000th. of the level that still causes no issue with laboratory animals!

So what is the bottom line? Pesticides are sometime detected as residues on foods. Exposure to these pesticides are typically far below levels of health concern. Pesticide stewardship continues to show a lack of food safety concerns in America. We, in the industry (I mean all of production agriculture) need to continue to preach this message). I do believe that those who make well informed food decisions and eat accordingly are the healthiest in our nation.



Dave Holden



Ken's Corner

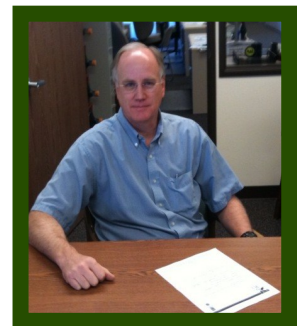
As 2013 concludes and 2014 begins I wanted to take this time to thank all AG RX's customers, vendors, and employees for making 2013 a successful year. AG RX is committed to providing excellent service to our customers and vendors as they entrust us to care for their crops and steward their products.

It is the dedication and support of our AG RX employee owners who; diagnose and recommend solutions for your fields; warehouse and

deliver products; apply the products; and take care of all the administration to ensure that all your needs are processed timely and efficiently.

I pray that you and your families had a Merry Christmas and Happy New Year together and that you will enjoy a prosperous 2014.

God Bless.



Ken Burdullis
President

Auction Day at the Ventura County Fair



This year AG RX received more than 30 letters from kids in FFA and various 4H clubs in Ventura County inviting us to check out their animals at the Ventura County Fair Livestock Auction.

Raising and caring for an animal is hard work and takes a great deal of responsibility. Many of these kids in addition to participating in FFA and 4H, play sports, hold jobs and/or volunteer in their community.

AG RX was fortunate to meet and speak with several kids on Auction day. They all demonstrate great character, enormous knowledge and compassion for their animals. Many of them expressed their desire to use the money they received from selling their animal(s) to help pay for school trips and/or to add to their savings for college.

We could not be more proud of each and every one of them.

Great Job!

Below are some of the kids we caught up with at the Fair.



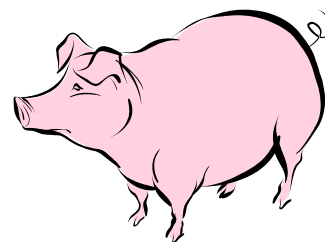
Addie Wucherpennig



Timmy Klittich - Reserve Grand Champion



Allison Reiman



Remy & Chloe Richardson



Jacob Elices



Alison Martinez & Glitz

Photos Taken by Randy Malone



Honorable Mention—Ventura County Fair



Paria Canyon between Kenab and Page



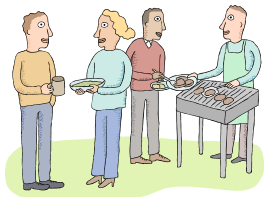
Bryce Canyon



The Mushrooms near Vermillion Cliffs National Monument



Canyon De Chelly



AG RX Customer Appreciation BBQ 2013



Oxnard

Gracias!



Grazie!

Merci!



Santa Maria

Thank you!



ありがとう



3rd Annual Christmas Sweater Party-

Winner: Susan MacDonald



QUARTERLY NEWSLETTER



751 South Rose Avenue
P.O. Box 2008
Oxnard, CA. 93034

Phone: 805-487-0696
Fax: 805-487-4125
E-mail:

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FILLMORE -

186 East Telegraph Road, Fillmore, CA 93015
(805)524-2687 Fax (805)524-1412
Store Hours: M-F: 7am-4pm Sat: CLOSED

SOMIS -

3250 Somis Road, Somis, CA. 93066
Store (805)386-2674 Fax (805)386-1234
Store Hours: M-F: 7am-4:30pm Sat: 7am-12pm

GOLETA -

6150 Francis Botello Road, Goleta, CA. 93117
Store (805)681-1686 Fax (805)681-1689
Store Hours: M-F: 7am-4:30pm Sat: CLOSED

SANTA MARIA -

609 South Depot, Santa Maria, CA. 93456
(805)925-2463 Fax (805)928-5329
Store Hours: M-F: 7am-5pm Sat: 7am-12pm

I AM AG RX—Fernando Castellon

Fernando joined AG RX in October of 2012. He currently works in our Citrus Department. Fernando has worked as a sprayer and most recently works on a two man crew as the mixer of the products for application.

What is your background? I was born and raised in Ventura. I am the oldest of three children, I have two sisters. I attended Oxnard High School and graduated in 2007. Before working here I worked for SAGE in shipping.

How did you get started in this business? I was searching for a job and came across AG RX and was a walk in. I really didn't know what AG RX was before starting here.

What are some of your greatest challenges you face in your job? I would have to say the steep hills. Some of the ranches we work on are not all completely flat and carrying the heavy hose can be very difficult. Also, those rubber boots don't help.

What is your favorite aspect of your job? I like that I am out and that I get to see different ranches and different places.

What are some of your interests? I like watching football, my favorite team is the Green Bay Packers, I enjoy watching the Miami Heat. Also, I like going to the beach and off-roading.

Fernando is a very versatile, dependable young man, a quick learner and is always ready to work.

We are very pleased with Fernando's enthusiasm to learn new tasks and his ability to use different equipment.

Thank you Fernando for your continued hard work.

