

Notes from the CEO

By John Krist

Hundreds of growers raising crops on the Oxnard Plain are about to confront a dramatic shift in the way they manage and account for their use of water.

[W]hen groundwater levels fall this low and remain there, it increases pumping costs, drops levels too low for some wells to reach, and intensifies seawater contamination of aquifers along the coast.

As reported in previous issues of this newsletter, the Fox Canyon Groundwater Management Agency has been working since January on an emergency ordinance intended to trigger a reduction of about 25 percent in groundwater extractions from the basins underlying more than half the county's farmland. About 51,000 acres of irrigated cropland fall within the GMA boundaries, and the agency has been grappling with a widening gap between the basin's safe yield and the amount being pumped.

The supply-demand imbalance is being exacerbated by the drought, but it is a long-term problem that has taken many years to reach its current dire state and it will require long-term strategies to solve. On average, extractions exceed recharge of the aquifers by about 24,000 acre-feet a year, a number that can double or even triple during severe drought.

Overdraft during drought is not by itself a significant problem; the system historically has been able to rebound to acceptable groundwater levels when rainfall amounts return to average conditions, thanks to a combination of natural aquifer recharge from flows in the Santa Clara River and artificial recharge made possible by the Freeman Diversion and Santa Felicia Dam.

But some of that recharge capability has been lost due to flow requirements and diversion restrictions imposed by the federal government to protect the endangered southern steelhead. Additional reductions in river flow are anticipated as cities in the Santa Clarita Valley begin reclaiming some of the treated wastewater they currently discharge into the Santa Clara. And it is unclear whether rainfall patterns in the future will resemble those in the past, or whether climate change will result in drier average conditions in Ventura County similar to those predicted for the entire Southwest.

Taken together, these factors suggest that it will take the system far

longer to rebound this time (and in the future) after drought ends. And when groundwater levels fall this low and remain there, it increases pumping costs, drops levels too low for some wells to reach, and intensifies seawater contamination of aquifers along the coast. It also means the GMA is failing to meet its statutory obligation to ensure the long-term sustainability of the groundwater resource.

In an effort to slow the current depletion of the Fox Canyon system, the GMA worked for nearly three months – often in close collaboration with various stakeholders, including agricultural and urban groundwater users – to develop an emergency pumping-reduction ordinance. Adopted at a special GMA board meeting on April 11, the ordinance establishes different rules and timetables for agricultural and urban users, but sets the same goal for all: a 25 percent reduction in groundwater use by 2016.

Because agriculture accounts for about two-thirds of the groundwater pumping in the GMA, it shoulders two-thirds of the 24,000-acre-foot reduction target, meaning the GMA is proposing that irrigation extractions be reduced by about 16,000 acre-feet per year. Municipal and industrial pumpers are responsible for the remaining 8,000 acre-feet of pumping cutbacks.

To calculate the amount of water each agricultural user will be allowed to pump without being subjected to a punitive surcharge, the GMA is requiring through the emergency ordinance that all such pumpers begin calculating and reporting their use under the recently adopted Irrigation Allowance Index, which specifies an allowed quantity of water based on crop type, geographic location and other factors such as season and plant size. Growers who have been pumping under historical allocations will no longer be allowed to do so. The ordinance also adjusts the per-crop allowances downward by 25 percent.

Pumpers relying on historical allocations account for about two-thirds of the GMA's irrigated acreage. What this means is that beginning Aug. 1 and for the duration of the emergency ordinance, hundreds of growers are going to have to change the way they use water and report their extractions. It also means the GMA staff is facing a daunting increase in its workload, thanks to the challenge of processing so much new data.

Farm Bureau has already convened a small working group to meet regularly over the next few weeks with county staff to refine the reporting forms, making them more useful and easier to understand, and to develop a simple online filing system to expedite the process. We plan to work with *(continued on page 3)*

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Fungus-based pesticide treatment strategy shows promise

By Suchitra Dara, Sumanth Dara and Surendra Dara

Chemical pesticides are primary means of controlling pests and diseases in many cropping systems. An entomopathogenic fungus, *B. bassiana*, infects and kills various pests and is commercially available as a biopesticide. Recent studies show that it can effectively control many strawberry pests. However, routine use of fungicides for controlling plant diseases can interfere with the use of entomopathogenic fungus-based biopesticides. Preliminary studies indicated that Pristine® and Switch® are among the fungicides used in strawberries that are harmful to *B. bassiana*.

If increasing the time interval between the application of the biopesticide and the fungicide could enhance their compatibility, it will improve the overall efficacy of the pest management. We recently evaluated two existing fungicides (Pristine and Switch) and one new product (Merivon) for their compatibility with *B. bassiana* at different time intervals.

Mealworms were chosen as bait insects to measure the infectivity of *B. bassiana* (BotaniGard ES). They were exposed to the following treatments:

1. Untreated control
2. Positive control with BotaniGard ES
- 3-9. BotaniGard applied 0, 1, 2 and 6 days after treating with Pristine.
- 10-16. BotaniGard applied 0, 1, 2 and 6 days after treating with Merivon.
- 17-23. BotaniGard applied 0, 1, 2 and 6 days after treating with Switch.
- 24-30. Pristine alone applied 0, 1, 2 and 6 days prior to the exposure.
- 31-37. Merivon alone applied 0, 1, 2 and 6 days prior to the exposure.
- 38-44. Switch alone applied 0, 1, 2 and 6 days prior to the exposure.

Spray fluids for *B. bassiana* and fungicides were prepared using field application rates. Paper towels were treated with 3 ml of respective fungicide solutions on each day starting 6 days prior to exposing the mealworms. On the 6th day, BotaniGard ES was applied to fresh (for treatment 2) and fungicide-treated paper towels (treatments 3-23) placed in plastic containers. Ten mealworms were placed along with freshly cut carrots in each container and exposed to *B. bassiana* on paper towels for 24 hours. They were then transferred individually into Plexiglas vials, provided with a piece of carrot, and secured with a foam plug. Mealworms were monitored daily and their mortality was recorded for 7 days. They were

provided with additional pieces of carrot as needed during this period.

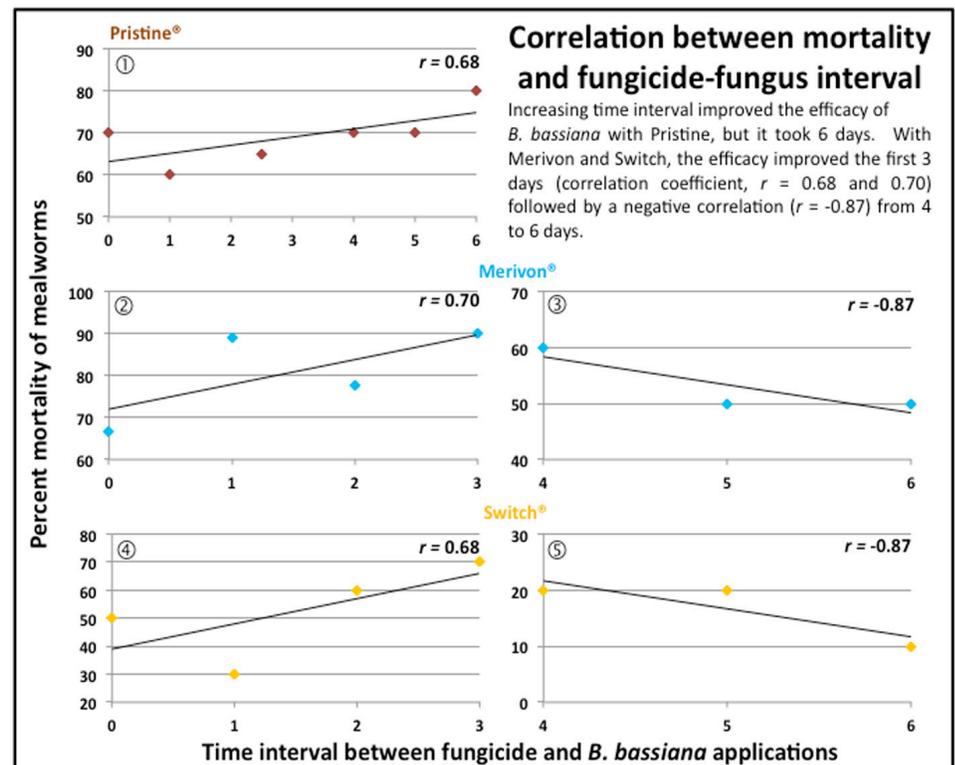
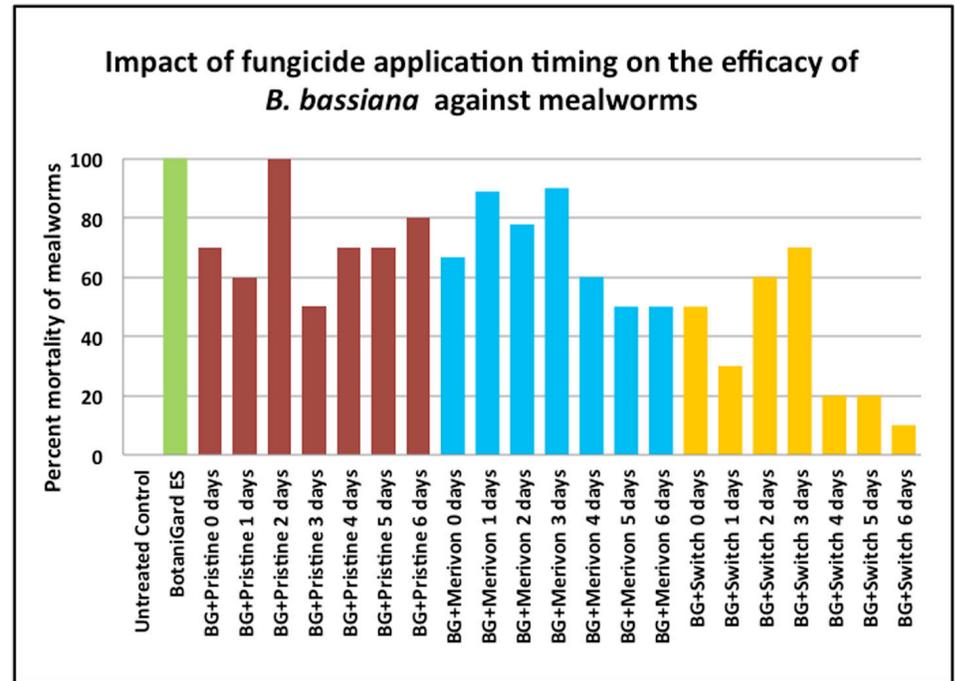
Previous research shows that simultaneous application of both the fungicides and *B. bassiana* limited the pathogenicity of the latter to mealworms. Applying *B. bassiana* from 0-6 days apart from the application of fungicides is expected to identify optimal time interval for maximum pathogenicity.

Fungicides alone were also used to measure their possible effect on mealworms.

Here are our results:

- Although there was some decline in the mealworm mortality due to fungicides, it appears that an ideal time interval of 3 days for Merivon and Switch and 6 days for Pristine is necessary before applying *B. bassiana*.

- Merivon and Switch (continued on page 3)



Notes from the CEO

(cont'd from page 1)

other organizations, including the California Strawberry Commission and the Ventura County Agricultural Association, to convene grower meetings and workshops to aid groundwater users in their efforts to adapt to the new system.

We also plan to continue convening the larger agricultural stakeholder group we established to review and suggest improvements to the emergency ordinance. We were successful in getting most of our suggested modifications adopted, and we were gratified by the willingness of the GMA board and county staff to engage with us during the process. But our work really has just begun. At the same meeting where the GMA board adopted the ordinance, it also approved a process and timetable for developing long-term solutions to the persistent groundwater supply-demand imbalance.

During this process, everything will be on the table – supply augmentation options along with demand-management strategies, possible new sources of financing for such projects, possible legislative changes and institutional partnerships required to carry them out. We intend remain engaged as this process moves forward, to ensure that the needs and respon-

Fungus-based pesticide

(cont'd from page 2)

are probably more ideal compared to Pristine for practical agriculture with their short-lived negative impact on *B. bassiana*.

- Discovery of the negative impact of Merivon and Switch at 4-6-day interval is significant both for determining ideal time interval and also for identifying a change in the correlation, which was positive up to 3 days.

- These findings are significant in promoting the use of non-chemical pest management options and improving the environmental health.

This experiment should be repeated to replicate the results.

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sibilities of agriculture are fairly and appropriately reflected in the outcome.

More litigation

As expected, the city of Ventura has again filed suit against the United Water Conservation District (UWCD) over its 2013-2014 groundwater extraction charges. As mandated by the California Water Code, the rates set by the UWCD board charge urban pumpers three times as much as agricultural pumpers, and the complaint filed March 24 makes the same arguments as the city's two previous lawsuits against UWCD: that the differential is illegal because it does not comply with the constitutional requirement that such rates be proportional to the cost of service.

Those previous cases were consolidated and are currently on appeal. At trial, the judge ruled that although UWCD properly complied with the Water Code in setting those rates, it had failed to also demonstrate the proportionality required by the constitution, and he ordered UWCD to refund the city nearly \$1 million. United disagrees with that determination, as does Farm Bureau, and on our behalf the California Farm Bureau Federation intervened in the previous cases.

It is not yet clear whether FBVC and CFBF will seek to intervene in the latest lawsuit. There are many challenges competing for the attention of our legal staff in Sacramento, and the core issue at stake in this dispute may be resolved at the appellate level, where CFBF is preparing to file an amicus brief in support of UWCD.

Meeting reminder

If you are an agricultural member of FBVC and have not yet RSVP'd for our annual meeting or sent in your ballot for the Board of Directors election, please do so. We will be welcoming Karen Ross, secretary of the California Department of Food and Agriculture, as our guest speaker, and we anticipate a good turnout. The meeting will be from 8:30 to 11 a.m. on Thursday, May 22, at the Museum of Ventura County in downtown Ventura.

Correction

Last month's newsletter said that the Pumping Trough Pipeline serves 46,000 acres of farmland. That was a typo; the correct figure is 4,600 acres. Unfortunately, the part about the system running out of water by the fall was accurate.

— *John Krist is chief executive officer of the Farm Bureau of Ventura County. Contact him at john@farmbureauvc.com.*

Member Benefits

TICKETS & DISCOUNTS

Farm Bureau members qualify for discounts on admission to many of Southern California's most popular theme parks and other attractions. To take advantage of any of these special offers, drop by the Farm Bureau office at 5156 McGrath St. in Ventura. You can also place an order and pay by phone, and have the tickets mailed to you. For more information, contact Cissy Perez-Haas at (805) 289-0155. Have your membership number handy. We accept Visa and MasterCard.

Aquarium of the Pacific — Adult (12+ yrs): \$19.95 (save \$9); Child (3-11 yrs): \$11.95 (save \$3). Valid thru 12/31/14 except 4/11-13 & 12/25 2014.

California Adventure and Disneyland 1-day Park Hopper — Adult (10+ yrs): \$131 (save \$6); Child (3-9 yrs): \$126 (save \$4). Valid through 12/31/14.

Cinemark Theatres — Platinum ticket, valid any show time at all Cinemark & Century locations: \$8.25 (savings \$2.75). Additional premiums may be applied for specially priced films and/or events priced higher than normal box office. No expiration.

Knott's Berry Farm — Buena Park/Palm Springs. Adult (12+ yrs) \$34.95 (save \$27.05); Junior (3-11 yrs) Senior (62+ yrs) \$29.95 (save \$3.05). Valid thru 12/31/2014.

Six Flags Magic Mountain — General use ticket (3+ yrs): \$40.95 (save \$27.04). Valid thru 9/28/14.

Regal Cinemas — Unrestricted tickets \$8.25 (regularly \$9.50 Sun.-Thurs, \$10 Fri.-Sat). Good at Edwards, Regal, Signature and United Artists Theaters. No expiration.

San Diego Sea World — Adult (10+ yrs) \$68.95 (save \$15.05); Child (3-9 yrs) \$68.95 (save \$9.05). Valid thru 12/31/14.

San Diego Safari Park — (Formerly Wild Animal Park) Adult-African Tram Safari: \$39 (save \$7) (12+ yrs); Child-African Tram Safari: \$31 (save \$5) (3-11 yrs). Africa Tram Safari includes admission, unlimited rides on the Africa Tram, and all shows & exhibits. Valid through 01/31/15.

San Diego Zoo — Adult (12+ yrs): \$39 (save \$7). Child (3-11 yrs): \$31 (save \$5). Includes admission, unlimited use of Guided Bus Tour, Express Bus, Skyfari Aerial Tram and all shows & exhibits. Valid through 01/31/15.

See's Candy gift certificate — One-pound box \$14.95 (Save \$2.05). No expiration.

"E Tickets" are available for certain amusement parks.

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