Drip Irrigation Getting More Attention from Valley Alfalfa Growers  
by Gilbert Mohtes-Chan

It takes about 30 to 80 inches of water per acre a year to grow alfalfa hay in the West.

At 1.5 million acres in California, alfalfa covers the most acreage of any crop in the state. That means it takes 45 million to 120 million inches of water per acre to irrigate alfalfa annually in the Golden State. Translated: 1.2 trillion to 3.3 trillion gallons of water a year. To put it in perspective, 11 million households use about 1 trillion gallons of water annual, according to the federal Environmental Protection Agency.

With water a precious commodity these days, alfalfa growers are starting to look into drip irrigation as a water-saving measure.

“It is a part of the future. The water savings are pretty significant,” says Francisco Parra, an agronomist and pest control advisor for Buford Farms. “Every inch of water we can save is an inch of water we can use for another commodity.”

Over the past several decades, drip irrigation on the surface and below the ground has steadily made inroads in California agriculture. It hasn’t been prevalent in alfalfa, though. Drip directs water and nutrients straight to the root area, resulting in good crop production without leaching or runoff.

“Run-off is a big issue with flood irrigation. You’re not maximizing your actual water use efficiently,” Parra said. Some water is lost to evaporation and run-off in flood irrigation.

Some experts and growers say subsurface drip can save 30 to 50 percent or even more in water usage compared to flood irrigation. Growers and agriculture experts say yields are greater, too.

One alfalfa grower, for example, installed drip lines 8 to 10 inches underground and 40 inches apart. He used about 7 to 8 inches of water for each cutting compared to 12 inches applied once or twice per harvest with flood irrigation. The water is turned off two to three days before cutting to avoid wet fields during harvest. With drip, his farm produces about a third of a ton more per acre from each cutting.

Parra sees more alfalfa growers installing drip systems in the Valley. Still, he estimates that maybe only 1 percent of farms are using drip – although there are no firm numbers available.

For growers, the upfront installation costs can be steep, around from $1,200 to $2,000 an acre for labor and materials such as drip tape and PVC pipe. Before making a decision, they have to determine how many years it will take for the system to pay for itself.

The benefits: Increased water and nitrogen use efficiency; reduced runoff and evaporation; fewer weeds on the surface; more uniform water distribution; decreased energy use and less moisture stress on the alfalfa.

The limitations: Large initial investment; big learner curve; additional equipment needed to change to drip; damage by gophers and other critters; and extra work with annual drip tape recycling.

Despite the big upfront costs and extra work, Parra predicts more growers will turn to drip in the future because of the constant issues with water availability and efforts to become more efficient with irrigation practices.

“It is important to realize the value of any drip irrigation method,” Parra said. “We’re excited it is moving forward.”
It's Time to Prepare for a Successful Almond Harvest
by Gilbert Mohtes-Chan

It is mid-year and almond growers are already preparing for the 2014 harvest, thanks to another dry winter.

Growers should keep in mind a few tips as they prepare for an earlier-than-normal harvest. Remember that nuts harvested early may need to dry on the ground for one to two weeks, says David Doll, an almond expert and farm advisor for the University of California Cooperative Extension in Merced County. On the other hand, nuts that partially dry on the tree require less time on the ground.

There are pros and cons for either method:

- In the tree: Nuts will be vulnerable to navel orangeworm (NOW) damage the longer they remain on the tree. NOW is one of the most serious pest concerns in almonds. These pests can cause severe economic damage and risk to human health. The worms bore into the nut and gobble up most of the nutmeat. It also can lead to aflatoxin contamination, which is created by Aspergillus mold and is a known carcinogen.

- On the ground: Almonds on the ground face threats from ants, mold and rain. If there is a chance of rain, experts suggest leaving the almonds on the trees to increase drying time.

Retired entomologist and UC IPM emeritus Walt Bentley says growers should review the orchard history for past ant problems. You’ll find more ants in drip or sprinkler irrigated orchards than in flood-irrigates ones. At the same time, nuts are less susceptible to ant damage in weed free orchards.

Bentley says previous ant damage usually means these pests will continue to pose a threat during harvest time, especially in the heavy orchard soils located south of Madera.

Field Scouts Keep a Keen Eye for Pest Trends
by Gilbert Mohtes-Chan

Summer is prime time for pests.

That’s why having another pair of eyes – namely SJSFP field scouts Jenna Horine and Carlos Silva – can be invaluable to help growers monitor pest populations in their alfalfa and cotton fields and almond orchards in Fresno, Merced and Madera counties.

What bugs are on their watch list:

Horine names mites as public enemy No. 1. These pests feed on tree leaves, which reduces photosynthetic rates and will hurt almond production the following year. Weekly monitoring of the entire orchard for mites and predators is important at this time of year. If predators are plentiful in the orchard, then you probably don’t need to apply treatments. When treatment is necessary, use miticides that are the least harmful to beneficials.

For cotton, lygus tops the list at this time, Silva says. Later in the season, white flies become a threat before harvest. He also will be checking on retention rates.

Lygus are a threat from early squaring to boll set. If left unchecked, the pest will cause serious economic damage because of low yields. White flies cause sticky cotton, which diminishes the cotton quality and makes the fiber less attractive economically.

Both field scouts will be reporting their pest findings to participating SJSF program growers every week and weighing in with UC crop experts on what they are finding.

It’s Time to Prepare for a Successful Almond Harvest
by Gilbert Mohtes-Chan

(continued on next page)
“Make sure fruiting branches aren’t touching the ground,” Bentley says. “Ants will climb up a limb to reach the nuts.”

If treatment is necessary, baits are the preferred method of ant control because they are taken back to the nest and kill the whole colony. Bait products are slower acting than sprays so they must be applied several weeks before harvest. The best timing for a conventional insect spray is 2 weeks before harvest.

Preparing the orchard floor before harvest is important in an almond IPM program. The ground should be smooth, dry, and free of weeds, ants, trash, and other debris. Orchards that are regularly cultivated should be disked to break up clods and then rolled to make the surface smooth and firm.

Other things to do before harvest:

• Mow weeds as close to the ground as possible between the trees rows, so they will decompose quickly.
• Perform the last preharvest irrigation one to four weeks before harvest, depending on the depth and texture of the soil.

Once almonds are picked up from the ground, growers need to irrigate the trees, as well as add some nitrogen. Drip irrigation can be done as soon as the trees are shaken. On the other hand, hold off using micro-sprinklers because the watering pattern may reach nuts in the wind rows.

There is plenty to do to ensure a good harvest and this year it is bound to happen early, so be prepared.

New Pesticide Rules Target VOC Emissions in the Valley  
by Gilbert Mohtes-Chan

Egyptian alfalfa weevils are threatening your crop in the San Joaquin Valley. As in the past, you consider applying the pesticide Lorsban 4E to control the pests.

But unlike past summers, now you’ll need to get a written recommendation from your pest control advisor to use Lorsban 4E under new rules enacted by the state Department of Pesticide Regulation (DPR). The reason is this product is on the state’s short list of pesticides that contribute greatly to air pollution.

Starting this year, alfalfa, almond and cotton growers (as well as grape, citrus, pistachio and walnut farmers) from May 1 to October 31 face restrictions on the use of smog producing non-fumigant pesticides containing a high level of volatile organic compounds (VOC). These crops are the highest pesticide VOC contributors in the Valley. The high-VOC products contain abamectin, chlorpyrifos, gibberellins or oxyfluorfen.

The Valley is one of four regions in the state that fail to meet federal Clean Air Act standards. Non-fumigants contribute about 65 percent of the San Joaquin Valley’s VOC emissions from pesticides. The goal is a 12 to 20 percent reduction in emissions, depending on the locale. Smog can cause respiratory problems, impact crops and damage lung tissue.

“We have to keep our air clean. Let’s work to try to keep the VOCs low. Then we won’t have any further problems,” says William Griffin, an agriculture standard specialist with the Fresno County Department of Agriculture. “We encourage you to use the low VOC materials.”

DPR has a list of high- and low-VOC products on the market. It also offers an online calculator for growers and pest control advisors to use to determine VOCs for specific materials. Griffin says the emissions rate difference in high-VOC and low-VOC products can be dramatic. (Online calculator: http://apps.cdpr.ca.gov/voc-calculator/ )

“I would talk to your PCA or your supplier,” he said. “Work with your local ag commissioners. We want to help.”
Striving to Deliver Timely Topics, Issues Directly to Growers by SCP/SJSFP Director Marcia Gibbs

In spite of statewide water woes, SCP and the SJSFP have been fortunate to bring together a good group of alfalfa, almond and cotton growers who have enrolled their fields and orchards this season. We are hopeful that their crops will bring good yields and that 2014 will be the end of the drought cycle in California.

The Sustainable Cotton Project has been doing its part to help farmers in the region be successful. We have hosted timely grower meetings and field days that address current needs – including drought impacts on almond production, vertebrate pest control, drip irrigation in alfalfa, honey bee health issues and almond pollination, sticky cotton prevention and blue alfalfa aphid control to name a few.

Our field scouts are doing a terrific job, keeping growers informed and updated on field and orchard conditions. Their reports include fruit retention data to cotton growers, petiole samples for almond growers, keeping close connections to University of California crop experts to stay on top of any problems and being sure growers have all the latest tools they need to be successful. If you don’t already check our weekly blog, we recommend it for the latest tips from the field. You can find it at: http://centralvalleyfarmscout.blogspot.com/

On the cotton front, SCP is continuing its efforts to promote and seek markets for the Cleaner Cotton™ being grown by enrolled SCP cotton farmers. With the increase in emphasis on USA grown, we are optimistic that this fiber will find its way into a USA grown and sewn product. Stay tuned.

You can find us online at the following:
WEBSITE: www.sustainablecotton.org
FIELD DAY VIDEOS: http://www.sustainablecotton.org/videos
FACEBOOK: https://www.facebook.com/sustainable.farmingproject
BLOG: http://centralvalleyfarmscout.blogspot.com/

Funding for this project has been provided through an agreement with the State Water Resources Control Board and the U.S. Environmental Protection Agency- Clean Water Act Section 319