Santa Clara County Division of Agriculture

November 2011

March 2012 Export Training Class

The Fresno Center for International Trade Development is providing a California Agricultural Export Training Certificate Program for California specialty crop companies. The program is a series of six classes over three months that focus on several aspects of exporting food and agricultural products. This training program is designed to meet the educational needs of agricultural companies seeking to export their products worldwide. Classes are scheduled to begin in March 2012 and companies can register for the program at www.fresnocitd.org/calagx.

In 2009, California exported $12.4 billion in agricultural products to more than 150 countries. Leading export products included almonds, rice, wine, pistachios and walnuts. The top destinations for California agricultural products included Canada, the European Union, Japan, China/Hong Kong and Mexico. On average, California farmers and ranchers export 22 percent of the products they produce.

Inside this issue:

On-Line Pesticide Use Reporting

If you have access to the Internet, we need you to jump on-line!

With the budget crisis hitting the State hard this past year, the State Department of Agriculture has seen some drastic cuts. In addition to loosing many programs, the State has cut the funding to Counties to input pesticide use report data into the State database.

Every paper use report sent to our office is entered into a State database. This, as you can imagine, can take a lot of time and resources to accomplish! The good news is we have a new on-line pesticide use database that will accept data from a number of pesticide use recording systems. If you are using a pesticide reporting software program such as Tiger Jill, chances are you will just need to do a simple data transfer to quickly and efficiently submit your pesticide use reports each month.

If you are not using a computer program to track your pesticide usage electronically, the on-line use reporting program can still be a benefit. You will not only save on postage each month, but it will save you time. Once you enter your information into the computer program, it will remember you and will auto-fill information such as your address, phone number, etc. each time you log in to submit a report.

How can you get started?

You can call today to set up your FREE appointment with our On-Line Use Reporting expert.

We will set you up with a log in name, password, and details of how to submit your monthly use reports.

So, don't delay, sign up today! For information about on-line use reporting, please contact Kristian Barbeau at (408) 465-2910 or you can e-mail him at: Kristian.Barbeau@aem.sccgov.org

Restricted Materials & NOI's

The California Environmental Quality Act (CEQA) was adopted in 1970 and is the State's principle environmental law. One of the things CEQA requires is an Environmental Impact Report (EIR) for any land-use development or management decision that may have a significant effect on the environment. The purpose of the EIR is to provide public agencies with a standardized report so the agency can make an informed decision of whether or not to approve a regulated activity.

In 1976, the Attorney General ruled that permits issued for the use of restricted pesticides are subject to the requirements of CEQA and therefore require an EIR. The Legislature immediately adopted a moratorium on the ruling and assembled an Environmental Assessment Team to determine how restricted material permittees across the State could comply with the EIR requirement. After a year of study, the team concluded that requiring an EIR for restricted pesticide use was infeasible and an alternative would have to be created.

EIR Equivalency

The State's pesticide regulators created a functional equivalent to an EIR, so users of restricted pesticides could comply with State environmental laws. In order for a grower to apply a restricted pesticide, they must fill out a permit application, designate a certified applicator as a responsible person, identify which restricted materials they want to use, the pest(s) to be controlled, method of application, and the criteria for determining the need for the pesticide. The last piece of this equivalency puzzle is the notice of intent.

Why do you have to submit an NOI before EACH application?

Other than being required by regulation, the notice of intent is important because conditions sometime change. Many times the conditions at the time the permit was issued is much different than when the application is scheduled to take place. Examples of this would be:

1) Sensitive crops leafing out nearby. For example, if a hay grower wants to apply 2,4-D in March and there is a vineyard a mile away, the application will be denied. The 2,4-D will affect the vineyard and the hay grower can be liable for drift damage.
2) Fieldworkers in a neighboring field
3) Bees brought in to pollinate an adjacent field / orchard
4) Construction projects nearby
5) Seasonal creeks

Protect your ability to use these materials!

Every restricted pesticide permitee must keep in mind that these materials are closely watched. Mistakes by a few individuals can have implications statewide. In order to maintain your ability to use these materials, it is very important for you to continually assess your need for a restricted material and continue to apply these materials with care. Additional restrictions or regulations can be enacted if these materials are abused.

Fumitoxin is a prime example of a material that was grossly misapplied by someone and their actions have caused a nationwide label change that has now affected everyone that uses that material. Be a good steward of these materials to protect your ability to use them. In the case of the fumitoxin misapplication, the applicator did not follow label directions and his misapplication of the material right next to the foundation of a home killed two little girls. Although this example is one of gross negligence; it's a somber reminder that label directions are there for a reason and it's important for everyone to follow the label and apply these materials with care.

Signal Words and LD_{50}

Danger, Warning, Caution...

When a pesticide product is placed in a given category, many different factors are considered, one of which is the chemical's LD50.

The definition of LD_{50} is the lethal dose in mg/ kg that will kill 50% of a test population. The following is a breakdown of the LD_{50} values for each pesticide category.

Category 1 / Danger
1) Oral LD50 is up to and including 50 mg/kg
2) Dermal LD50 is up to and including 200 mg/ kg
3) Skin effects: Corrosive

Category 2 / Warning
1) The Oral LD50 is from 50 - 500 mg / kg
2) The Dermal LD50 is from 200 - 2,000 mg / kg
3) Skin effects: Severe irritation at 72 hours

Category 3 / Caution
1) Oral LD50 is from 500 - 5000 + mg / kg
2) Dermal LD50 is from 2,000 - 20,000 + mg / kg
3) Skin effects: Moderate irritation at 72 hours

In a California Vineyard, Bluebirds Earn Their Keep

Green Blogs / New York Times.com

By RACHEL NUWER

Picture by Julie Jedlicka. A male Western Bluebird on a vineyard trellis.

In an innovative study, nest boxes installed at a California vineyard attracted hundreds of birds that picked the farmers' crops clean of pests in exchange for the free housing. The experiment is heartening news for conservationists amid reports of shrinking habitats and population declines for so many species.

"Placing songbird nesting boxes in agricultural landscapes can provide suitable nesting sites for a lot of birds that used to be plentiful 100 or 200 years ago but lost their natural landscapes," said Julie Jedlicka, an ornithologist at the University of California, Berkeley.

Dr. Jedlicka set out to study whether installing the nest boxes would help attract the birds and reduce pests. Her research, published last week in the journal PLoS One, confirmed her hunch. Compared with control areas in the same vineyard that did not have the nest boxes, areas with the boxes attracted twice as many birds early in the nesting season and had 2.6 times as many birds later in the breeding season.

Western bluebirds were responsible for much of the increase: 313 of them were counted at the nest box sites, versus 39 in control portions of the vineyard.

Overall, 1,122 birds representing 25 species made an appearance. Both the nest box sites and the sites without boxes had about the same number of species present, but the numbers of insect-eating species was 50 percent greater in areas with the nest boxes. Insectivorous birds removed about 2.4 times as many insect larvae at the nest box sites as they did in the control areas.

Dr. Jedlicka's idea is not new. From 1885 to 1940, the federal Department of Agriculture devoted resources to studying "economic ornithology," or using birds as biological controls for agricultural pests. After pesticides like DDT were developed during World War II, that approach largely faded in favor of a quick chemical fix. Now Dr. Jedlicka envisions a revival of economic ornithology through the lens of ecosystem services and bird conservation.

As cavity-nesting songbirds, bluebirds are particularly well suited to the task. Although they look for enclosures to build their nests, they tend to prefer those found within otherwise open spaces, and agricultural fields fit the bill. What is more, "they respond rapidly to new nesting opportunities," Dr. Jedlicka said. Within one year of placing about 100 nest boxes in two vineyard study sites, bluebird families occupied over 75 percent of the boxes, she said.

Bluebirds are not picky about what they eat: caterpillars, beetles, and grasshoppers are all fair game. A bluebird family of five nestlings requires 125 grams of arthropods per day, and bluebird pairs can produce two broods per year.

The birds probably won't replace farm pesticide use entirely. Some pests, like spider mites, are too small for bluebirds to consume.

Dr. Jedlicka hopes that wineries will gradually adopt the "Bird Friendly®" stamp, a certification already widely available for coffee growers. Vintners could then market their products to the growing eco-friendly consumer sector while helping the birds.

Wine growers aren't the only farmers who can benefit: the combined range of North America's three bluebird species extends across the United States. Farmers in Florida already use nest boxes to attract insect-eating birds, as do some apple orchard managers in New England.

Nest boxes can be used to attract bluebirds to urban gardens as well. "I imagine it would be difficult to find an agricultural system where this wouldn't work," Dr. Jedlicka said.

http://green.blogs.nytimes.com/2011/11/14/in-a-california-vineyard-bluebirds-earn-their-keep/

California: E. coli O157:H7 present but not common in wildlife of nation's salad bowl

24.may.10 UC Davis http://www.news.ucdavis.edu/search/news_detail.lasso?id=9513

The disease-causing bacterium E. coli O157:H7 is present but rare in some wildlife species of California's agriculturally rich Central Coast region, an area often referred to as the nation's "salad bowl," reports a team or researchers led by a UC Davis scientist.

The researchers, who are nearing completion of a massive field study to help identify potential sources of E. coli O157:H7 near Central Coast farms, presented their findings today during the annual meeting of the American Society for Microbiology in San Diego. They reported finding occasional E. coli O157:H7 infections in fecal samples of wildlife species common to the area, including cowbirds, coyotes, crows, mice and feral pigs. Based on their findings, the researchers recommend that farmers in this region continue to follow "good agricultural practices," a set of accepted, on-farm procedures designed to protect crops from contamination during production and harvest (http://ucgaps.ucdavis.edu/).

The study was spurred by a 2006 nationwide E. coli O157:H7 outbreak linked to fresh, bagged spinach grown in California; the outbreak resulted in 205 reported illnesses and three deaths. "The study helps us better understand the possible risk of crop contamination from wildlife and allows us to compare that to the risk of contamination from other possible sources such as livestock and irrigation water," said lead study author Michele Jay-Russell, a veterinarian at UC Davis' Western Institute for Food Safety and Security.

"We are sharing this data with the produce industry, regulators, and conservation groups to help improve prevention strategies that protect public health and preserve native wildlife populations and their habitats," she said.

E. coli O157:H7 poses a serious human health threat, commonly causing abdominal cramps and diarrhea, sometimes bloody. Severe infections may be require hospitalization and result in kidney damage and even death. People most at risk for serious complications include young children, the elderly and those with compromised immune systems.

From 2008 through 2009, the team collected and tested 1,133 fecal samples from wild birds and mammals on 38 private properties in Monterey, San Benito, and San Luis Obispo counties in California. All three counties are home to farms that grow fresh spinach, lettuce and other produce.

Laboratory tests revealed that E. coli O157:H7 was present in samples from two cowbirds, two coyotes, five crows, one deer mouse and 10 feral pigs. Samples from deer, opossums, raccoons, skunks, ground squirrels and other bird and mouse species all tested negative for the bacterium.

Robert Mandrell, principle investigator and research leader from the U.S. Department of Agriculture's Agricultural Research Service, said that the discovery of a low level of E. coli O157: H7 among Central Coast wildlife was somewhat surprising.

"The fact that we have identified two bird species with an incidence of E. coli O157:H7 of more than 3 percent, feral swine with about a 4 percent incidence and several coyotes and rodents that tested positive for O157:H7 suggests there are at least several sources of pathogen movement in this region," Mandrell said.

"We have no evidence that the concentration of the pathogen was high in the feces of the animals that tested positive, so the significance of wildlife as a source of direct contamination associated with outbreaks remains unclear," he said.

Mandrell said the researchers are comparing the genetic makeup of the E. coli O157: H7 strains found in wildlife to that of strains isolated from other sources including cattle, soil and water. They hope these comparisons will help them to better assess the movement of the bacteria in this agriculturally important region.

Following up on these findings, the study team is evaluating other potential wildlife sources of E. coli O157:H7, including amphibians and reptiles, and is conducting focused research to refine best practices that promote appropriate management to protect both food safety and the environment.

The collaborative research team included microbiologists and epidemiologists from the Agricultural Research Service and the Western Regional Research Center and Wildlife Services, both of the U.S. Department of Agriculture; the Western Institute for Food Safety and Security and the Western Center for Food Safety, both at UC Davis; and the University of California Cooperative Extension. The study was funded by the U.S. Department of Agriculture and the U.S. Food and Drug Administration.

Exempted Pesticide Products

A review of the requirements to use these products

In May 2000, the Department of Pesticide Regulation no longer required certain "exempt" pesticides to be registered. This change allowed exempt pesticides to avoid the lengthy registration process and to be excluded from the mill assessment. However, it is important to note that exempt products are still regulated and users must comply with all pesticide laws and regulations relating to their use and worker safety standards.

1. Employees need to be trained on the use of all pesticides whether they are registered pesticides or exempt pesticides.
2. People that apply exempt pesticides for hire or write recommendations for these products must be licensed.
3. Records of pesticide use (Section 6624) are still required for exempt pesticides. (The only portion of this code section that obviously cannot be fulfilled would be the recording of an EPA registration number.)
4. Exempt pesticides have to comply with the Federal Food Drug and Cosmetic Act. Exempt pesticides are still subject to applicable residue tolerances on or in food commodities or animal feed.
5. At this time, exempt pesticide products are not required to be reported on monthly use reports. The State is unable to process these products in their use reporting system since they lack a registration number.
6. Growers applying only exempt pesticides to their crops will not be required to obtain an Operator ID number at this time.
7. Exempt pesticides will not have a U.S. EPA number or a California Registration number on its label.

If you find a pesticide without an EPA Registration number on it and want to ensure you have an exempt pesticide product and not an illegal unregistered pesticide, look at the ingredients listed on the product label. Exempt pesticides will list each active ingredient and the name of each inert ingredient. This is unique to exempt products because registered pesticides rarely, if ever, list inert ingredients. Further, California Code of Regulations Section 6147 has a list of exempt pesticide active ingredients. Check to see if your product's active ingredient is on that list. If you are still unsure, call your Agricultural Biologist and we can look into it for you.

Company Agrees to Criminal Fine for Pesticide Violation

Capital Ag Press / Mateusz Perkowski

October 25, 2011

A California farming company must pay a $2,500 criminal fine for accidentally exposing several kindergartners and a school bus driver to pesticide spray.

DLM Farms of Fresno County has agreed to pay the fine as part of a plea agreement with the U.S. government, in which the company pleaded guilty to knowingly using a pesticide in a manner inconsistent with its labeling.

The company faced a maximum sentence of five years probation and a $10,000 fine.

The plea agreement pertains to an incident in October 2008, when farm employees were spraying a 99-acre tangerine orchard near Sanger, Calif., with a bactericide and fungicide named Kocide 20/20, according to court documents filed by the government.

The pesticide is corrosive, potentially causing irreversible eye damage, skin irritation and other injuries if swallowed, inhaled or absorbed through the skin, a government document said.

Contrary to pesticide label rules, a farm employee did not watch for vehicles passing through the area to prevent them from inadvertently being sprayed during the operation, the document said.

As a result, a school bus with open windows drove by the orchard and was sprayed with the pesticide, exposing eight children and the bus driver to the chemical, the document said.

For questions or comments, please contact:

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Or, e-mail: scc.agriculture@aem.sccgov.org

This newsletter is available on-line on our website: http://www.sccagriculture.org

The Genetically Modified Crop Debate in the Context of Agricultural Evolution

Channapatna S. Prakash

Plant Physiol, May 2001, Vol. 126, pp. 8-15

Current crop debate blog: http://www.plantphysiol.org/cgi/content/full/126/1/8

There is no such thing as safe food, and there never has been! That is not to suggest that all of our foods are dangerous, only an acknowledgment that trace levels of such contaminants as toxins and carcinogens are present in everything we eat. But a primary rule of toxicology, articulated over 400 years ago by Paracelsus, refers to the importance of dosage: "Every substance is a poison, but it is the dosage that makes it poisonous" (Poole and Leslie, 1989).

While not alarming, our daily food naturally contains thousands of chemicals, and many of them are shown to be carcinogenic or hazardous in lab animal studies with huge doses. We consume roughly 5,000 to 10,000 natural toxins daily, as plants have evolved to produce an array of chemicals to protect themselves against pests, diseases, and herbivores (Ames et al., 1990a). For instance, roasted coffee has over 1,000 chemicals, of which 27 have been tested and 19 of them found to be rodent carcinogens (Ames and Gold, 1997). The fat-soluble neurotoxins solanine and chaconine are present in potatoes and can be detected in the bloodstream of all potato eaters (Ames et al., 1990b). Naturally then, when crops are bred for resistance to pests by transferring genes through conventional methods, the resistance is often accompanied by an increase in such toxic compounds.

Thus, it is not true that we never had problems with conventionally bred varieties. Any crop variety found to pose a real health risk was promptly removed from the market, but those varieties (in contrast to GM crops) were never routinely tested. One pest-resistant celery variety produced rashes in agricultural workers and subsequently was found to contain 6,200 ppb of carcinogenic psoralens compared to 800 ppb in the control celery (Ames et al., 1990). This celery was removed from cultivation and that was also the case with the potato variety Lenape, which contained very high levels of toxic solanine.

We have always learned from trial and error with all innovations. Similarly, crop improvement practices evolved over time with continued refinement. It is common, though, for human nature to generate an exaggerated fear of new innovations while perceiving older or "natural" products as always more benign. Huber (1983) discusses this double standard in the larger context of risk regulation. We have always been lenient toward existing known and greater hazards, even as we create "gatekeepers" to minimize new risks. Thus, we fail to recognize and "exorcise" much larger older risks.

While most food hazards arise from pathogens such as Escherichia coli 0:157, Listeria monocytogenes, and Salmonella enterica along with mycotoxins produced by fungi (and thus a function of food storage and handling), certain foods containing toxic compounds are known to produce adverse health consequences over time. Cassava, eaten by a large population in Africa, contains cyanogenic glucosides, which cause limb paralysis if consumed before extensive processing. Solanin in tomato and potato is known to cause spina bifida. Vetch pea, a common legume known for its hardiness and thus popular in India among poor farmers contains highly dangerous neurotoxins that cause untold misery. Phytohemagglutinin, found in undercooked kidney beans, is toxic. And peach seeds are extremely rich in cyanogenic glucosides. None of these were subject to any mandatory testing before they were introduced into the food chain, nor are they subject to any regulation now. But if the current regulatory standards imposed on GM crops were to be invoked for traditional crops, most of them would fail to meet their requirements.

Humans have built-in natural defenses that protect us against normal exposure to toxins. But, according to Ames and Gold (1997), we have not evolved to achieve "toxic harmony" with everything we eat, because natural selection occurs much too slowly and because much of what is in our diet today was not eaten at all when we were hunter-gatherers.

A balanced mixture of foods normally provides adequate nutrition. However, none of the crops grown today were selected with our nutritional requirements in mind. Instead they were chosen intuitively, by our ancestors, from among the edibles that could be found around them. Thus, the most important food crop in the developing world rice has no provitamin A and little iron in its endosperm. This has led to horrific problems, such as blindness among millions of children due to vitamin A deficiency, and iron-deficiency anemia in nearly a billion women dependent on a rice diet. Biotechnology research, far from causing any new food safety problems, has already demonstrated its potential in enhancing the nutritional quality of our food and is also being employed to reduce harmful toxic compounds that exist in our food.