Managing Nitrogen on Farm Land
Focus of Forums

Growers, dairy operators, agency representatives, agricultural commissioners, policymakers and other community members will gather for half-day forums in June to discuss management of agricultural nitrogen. The forums will be held in Sacramento on June 11 and in Tulare on June 18.

The California Department of Food and Agriculture and University of California Agriculture and Natural Resources will be hosting the two community forums to explore solutions to nitrate in groundwater and the role of policy.

The report “Addressing Nitrate in California’s Drinking Water” released in March by the State Water Resources Control Board concluded that more than 90 percent of human-generated nitrate contamination of groundwater in the Tulare Lake Basin and the Monterey County portion of the (Continued on page 6)
UC Nematologist Mike McKenry Retires

Nematodes, destructive pests recognized as one of the greatest threats to prolonged agricultural production worldwide, have been the focus of a distinguished 40-year career for UC Cooperative Extension specialist Mike McKenry, who will retire June 30. McKenry is a nematologist in the Department of Nematology at UC Riverside and based at the UC Kearney Agricultural Research and Extension Center in Parlier.

The Selma native was raised on a farm, where his family produced fruits and vegetables for sale at Highway 99 fruit stands. McKenry earned his degree in soil science with a biochemistry minor at California Polytechnic State University, San Luis Obispo, in 1966, where his senior project targeted the microscopic soil-borne true round worms that would shape his career.

“Very few farmers knew much about nematodes at the time,” McKenry said. However, the pest was causing serious damage and yield loss, especially when crops were replanted into previously farmed land.

After serving as a vocational agriculture teacher in Yucaipa, a town east of San Bernardino, and conducting field trials with his students, McKenry was offered the opportunity to study nematodes at UC Riverside. He obtained his Ph.D. in 1972 and was soon appointed by UC Riverside to his nematology research position at Kearney.

McKenry said his research focus changed with the times. The first two decades, he studied the movement of fumigants and other pesticides in soil, and the timing and placement for nematode congregation under trees and vines. Equally important were his activities to develop newer methods to assure that California’s nursery stocks would remain nematode-free.

“As drip systems evolved, we encouraged farmers to pay more attention to the root flush in order to be more efficient with whatever treatments they used,” McKenry said.

Increasingly stringent regulations and bans on the use of certain fumigants began to turn nematologists’ attention to reduced rates using timing and placement as well as botanically derived alternatives to synthetic products. McKenry noted an unreported biological control process under way at Kearney where certain naturally occurring fungi and bacteria were lethal to nematodes.

“We’ve been working on that for 40 years,” McKenry said. “We’re still missing pieces, but the potential and limitations are better understood.”

During this period, McKenry also developed a portable drenching system that reduced off-gassing of soil fumigants and led the way for pre-plant delivery of degradable nematicides deep into soil.

The next 20 years was the period of rootstock exploration. Grape rootstocks that had been released in the 1960s were losing their resistance to nematodes in the 1980s. McKenry and his staff evaluated as many as 1,000 potential grape rootstocks from around the world. This was followed by evaluation of 100 peach and almond rootstocks and then thousands of potential walnut rootstocks.

Over the last two decades, McKenry’s nematological expertise provided industry awareness of three grape rootstocks, RS-9, RS-3 and 10-17A; three fruit and nut rootstocks including Krymsk 1, specifically useful for dwarf plum trees; HBOK-1 and Hansen 536, for peach and almond orchards, plus a new walnut rootstock named VX211. In addition to durable nematode-resistance with these rootstocks, some may be planted without soil fumigation. If some fumigation was necessary, he demonstrated how a portable boiler could provide adequate steam to give first-year nematode relief.

More recently, McKenry identified the first effective nematode treatment that in very low doses could be sprayed onto leaves of trees and vines. This new chemistry was hidden away as an insecticide. Thousands of soil samples evaluated by McKenry and his research team at UC reported that if farmers followed a few guidelines, their yields could be boosted 10 percent to 20 percent.

(Continued on page 6)
referenced in textbooks, journals and other industry publications. In honor of his lifelong body of work, he received the Merit Award from the American Society for Enology and Viticulture in 2001. After forty one years, Fred retired from the University of California as an Emeritus in 1987. He continued to practice as a private consultant to the table grape industry both nationally and internationally. His work took him to Thailand for the United States government, Australia, New Zealand, France, Italy, Mexico, South Africa and Chile.

Fred had a lifelong love affair with the Sierra Mountains. He especially loved Yosemite National Park, particularly the high country around Tuolumne Meadows. He spent many summer days hiking, fishing, backpacking, and camping with family and friends. He also enjoyed relaxing, reading, biking and viewing the waterfalls in Yosemite Valley in the spring and the changing color of the leaves in the fall. Come winter, he could not wait to hit the slopes to ski! Fred was a great chef and food historian. He loved to entertain his colleagues with a Fall Harvest Dinner and hold impromptu dinners for family and friends. No family celebration was complete without a loaf of his onion bread, perhaps a lemon meringue pie or plate of his piece de resistance, Fred's Famous Toffee. In the late years of his mother's life (she lived to be 106), Fred cooked up many Danish dishes especially at Christmas to serve to her.

As an avid sportsman he played tennis, golf and pitched softball on the Visalia City League teams. He was always interested in the important professional or amateur sporting events of the day. Gardening and traveling brought great joy and pleasure to him throughout his life. Upon graduation he was inducted into the United States Army and was assigned to Letterman General Hospital. In August of 1943, Fred was reassigned to the Army Specialized Training Program at the University of Iowa in Iowa City, Iowa where he learned the German language and became a translator to military staff. He was transferred to the Medical Attachment 324th Regiment 44th Infantry Division that was being prepared for shipment overseas. Boston was a staging area for the formation of a large convoy; his unit shipped overseas on the maiden voyage of the troop carrier USS Gordon. It took the convoy 10 days to make the crossing to Cherborg, France. After landing, his division advanced through France and Germany ending the war in Austria. The 44th Infantry Division was in combat for 203 days and captured more than 44,000 prisoners, a number roughly equal to a force three times the size of their own Division. Shortly after the German surrender the troops were transferred to the coast of Scotland where they boarded the Queen Elizabeth for their return to the United States. It took four and a half days to return to New York City. Sergeant Jensen was honorably discharged in the fall of 1945.

Fred returned to California and moved his family to Visalia to take a job working for the U. S. Bureau of Reclamation. In 1947, he joined the University of California Cooperative Extension Service as a Farm Advisor working with the grape growers and industries in Tulare County. In this position he was instrumental in developing the Grape Pest Management Manual with several colleagues. He was also particularly interested in developing cultural practices for table grapes. In 1972, Jensen was advanced to the position of Viticulture Specialist in the UC Department of Viticulture and Enology at the UC Kearney Ag Center in Parlier where he worked with the Farm Advisors and the grape industry in the southern half of the state. There he conducted research and developed experimental programs with trellises, growth regulators, mechanical pruning and training young agricultural students. Mr. Jensen mentored many of the past and present day farm advisors.

His grandparents were part of the original Danish settlers in the town of Solvang, California. His parents, Jens Peter and Margre the (Petersen) Jensen, met while both were attending Atterdag,
the Danish Folk School in Solvang, California. They married and moved to the Selma area and later became grape growers in the community of Weedpatch near Bakersfield, California.

A loving family man, Fred is survived by his wife of twenty seven years, Thelma Lile Essex; his two daughters, Sheron Schiller (Ron) of Clovis and Susan Westfall (Larry) of Visalia; three grandsons: Scott Schiller (Michele) of Fresno, Tobin Schiller of San Francisco and Michael Rico (Maggie Caetano, fiancé) of Visalia, great grandsons Joseph and Erik Rico, Gavin Caetano, two nieces, Margaret and Jeanne and nephew Larry. He is also survived by three stepchildren Dana Essex of Minneapolis, Bill Essex of Modesto and Susan Essex of South Pasadena, two step grand-daughters and five step grand-sons. He was preceded in death by his parents Margaret and Jens Peter Jensen, his wife of 37 years, Mary Phillips Jensen, his infant grandson, Rob Schiller and his sister Else Meyer and his niece Helen. A memorial service was held April 28th at Quail Park Retirement Village, Visalia, CA. In lieu of flowers, please make donations in Fred's name to KDH Hospice, Salvation Army, or the Tulare County Historical Society.

The Plant Identification Lab at Foundation Plant Services (FPS), UC Davis provides variety identification using DNA Fingerprinting technology for grape, and other crops. The service makes DNA-based grape variety identification available to the public on a fee-for-service basis.

The grape variety identification service can be used by nursery managers, grape growers, wineries, breeders and other industry representatives. The identification process begins by extracting DNA from the client's grapevine sample. Dried young leaves are the standard sample, but plant variety can be identified using other parts of the plant such as fruit, roots and dormant cuttings, which allows samples to be tested throughout the season.

Since nearly all the DNA of one grape variety is identical to all other grape varieties, only small specific regions of the total DNA are useful for the purpose of grape variety identification. Analysis of these specific regions, referred to as DNA markers, produces the DNA profile or "DNA Fingerprint". To identify the variety, the DNA profile of the client's sample is matched to a reference profile in Foundation Plant Services' Grape DNA Identification Reference Database. The database contains DNA profiles of over 1200 grape varieties, Vitis vinifera and hybrids, from all major grape growing regions of the world and includes wine, table, raisin and rootstock grape varieties.

Other crops are identified in the same manner. The DNA profile of the client's sample is matched to a reference database that is specific to each fruit or nut type. Sample collection materials and instructions are provided as part of the service. The service is available to both domestic and international clients. Results are typically ready in three to four weeks. The above links will lead you to all the information needed to submit samples to our service.

Spring is the best time of year to collect and submit samples. You can learn more on how to collect and send samples here.

Jerry Dangl
Plant Identification Lab Manager
Foundation Plant Services
(530) 752-7540
gsdangl@ucdavis.edu
It has been estimated that fewer than ten different wine-grape varieties account for up to 80% of varietal wines. The San Joaquin Valley (SJV), historically a major producer of winegrapes, has increased the acreage of these core varieties over the past two decades. However, many of the most popular wine grape varieties were selected from cool climate regions, and thus fail to achieve optimal varietal character in the hot climate of the SJV, even when the best viticultural practices are employed. Therefore, extension specialists and farm advisors at the University of California, in collaboration with Constellation Brands have developed a program to evaluate less familiar wine grape varieties imported to California from other warm climate growing regions, such as Portugal, Spain, and southern Italy and France. These varieties were selected based on their reputation for producing high quality fruit and wine when grown in other areas with warm climates, and thus may be expected to produce high quality wines in the SJV as well.

The first phase of this testing, completed in 2010 by Dr. Jim Wolpert, Department of Viticulture and Enology, UC Davis, identified several varieties worthy of wider planting, including Durif, Petite Verdot, and Tannat. A few others were given a guarded recommendation, and the others were not recommended. These recommendations have already inspired commercial plantings, and a new set of grapevine varieties are now being evaluated by Wolpert and his Departmental colleague Matthew Fidelibus. Preliminary results from the second trial, including a tasting of wines made by Constellation Winery from grapes grown in the trial, will be presented to the public at the 5th Annual Viticultural Research Roadshow & Educational Wine Tasting, a meeting co-sponsored by the University of California Cooperative Extension and the San Joaquin Valley Winegrowers Association. The meeting will be held on June 14th, from 1:00-5:00 pm, at the FEOC Nielsen Conference Center, 3110 W. Nielsen (West of Marks), Fresno, California. The meeting will also include presentations from other speakers on topics important to the local wine industry, including a review of the findings from the UC Davis groundwater nitrates study, a discussion of how viticulture research is funded, a review of the efficiency and economics of several weed management methods in organic vineyards, and a discussion of mealybugs in western US vineyards and their changing role in grape leafroll disease transmission. Further information and registration information is available online: http://idrinkwine.net/wp-content/themes/SJVWGAttheme/images/Roadshow2012.pdf
the Salinas Valley has come from agricultural activity.

Plants need nitrogen to grow, but nutrients that are not used by the crop may move below the root zone. Nitrate, a byproduct of nitrogen, may infiltrate to groundwater.

“The report found that farmers have already begun employing numerous techniques to reduce the amount of nitrogen fertilizer available in the soil,” said Doug Parker, director of the California Institute for Water Resources and leader for the UC Agriculture and Natural Resources water strategic initiative. “At the forums, we will be discussing how those efforts are proceeding and exploring additional solutions to protect groundwater quality. We’ll be asking the agricultural community what additional research and education they need from UC.”

At the forums, UC Cooperative Extension specialists will describe methods of managing nitrogen on dairies and cropland. Members of the agricultural industry and representatives of statewide and regional programs will discuss the practical aspects of adopting nitrogen management practices. To wrap up the sessions, Parker will present a case study on the effects of policy on nutrient management in the Chesapeake Bay region in the Northeast and lead a discussion of the role of policy in nitrogen management in California.

The June 12 forum will be held at the CDFA main auditorium in Sacramento from 8:00 a.m. to noon, followed by an optional farm and research tour in the afternoon. The June 18 forum will be held at the UC Cooperative Extension office in Tulare from 1:00 p.m. to 5:00 p.m.

Dense canopies result from excess water and nitrogen fertilizer.

SAVE THE DATE

7th International Table Grape Symposium

Attention table grape growers and attendees of the 6th International Table Grape Symposium, I am pleased to announce that the 7th International Table Grape Symposium will be held in Australia early December 2013.

Persons interested in presenting a paper at the 7th International Table Grape Symposium should contact: David Oag
+61 427427517
david.oag@deedi.qld.gov.au

If you are interested in receiving more information as it becomes available please email me at: sjvasquez@ucanr.edu to be added to the list.
**CALENDAR OF EVENTS**

**Local Meetings and Events**

**Viticulture Research Roadshow**
June 14, 2012
1:00 p.m.—5:00 p.m.
EOC Nielsen Conference Center
3110 W. Nielsen in Fresno
Contact: Peterangelo Vallis (559) 272-1411 x803

**U.C. Davis University Extension Meetings**
(800) 752-0881

**Rootstock Workshop: Identification and Use**
August 13, 2012
9:00 a.m. — 2:30 p.m.
Plum, DANR Building, 1 Hopkins Rd.
Davis, CA
Section: 121VIT218

**Winegrapes: Identification and Use**
August 14-15, 2012
9:00 a.m. — 2:30 p.m.
Plum, DANR Building, 1 Hopkins Rd.
Davis, CA
Section: 121VIT219

**Introduction to Wine Analysis**
August 25, 2012
9:00 a.m. — 6:00 p.m.
1127 North, Robert Mondavi Institute for Wine and Food, Old Davis Rd.
Davis, CA
Section: 121VIT225

**Successful Home Winemaking**
September 8, 2012
8:30 a.m. — 3:30 p.m.
Da Vinci Building, 163 Da Vinci Ct.
Davis, CA
Section: 121VIT212

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**Publications from the University of California**

**Vineyard Pest Identification and Monitoring Cards**
ANR Publication 3532
Price - $25.00 + tax and shipping

Keep your vineyard healthy by staying on top of pest activity with this pack of 50 sturdy, pocket-size laminated cards. This is the perfect quick reference to identifying and monitoring vineyard diseases and pests. Twenty-seven common insects and mites, 8 diseases, 6 beneficial insects, and a variety of other disorders, weeds, and invertebrate pests are covered in 244 photos. These 50 information-rich cards will help growers, vineyard managers, and their teams identify and manage most common problems.

**NEW! Organic Winegrowing Manual**
ANR Publication 3511
Price — $35.00 + tax and shipping

Interest in California organic wine grape production inspired this publication that provides a full-color guide with information on soil management, including soil considerations when selecting a vineyard site, developing organic soil and fertility programs and selecting cover crops. An extensive section covering weed, disease, insect, mite, and vertebrate pest management options for organic grape production is covered. The chapter on organic certification contains an overview of considerations for evaluating and selecting a certifier.

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