Turning science into solutions.
UC Agriculture and Natural Resources delivers healthier food systems, healthier environments and healthier Californians.
“Funding for specialty crop research is critical to California’s $37.5 billion agricultural industry. With these funds, UC scientists are helping California farmers find new ways to remain economically viable, protect their crops from pests and diseases, and provide healthy food for an increasing number of people.”

Barbara Allen-Diaz, UC ANR vice president

From farm to fork.
ANR is a vital partner in making California the nation’s top agricultural state, leading the way in producing more than 400 crops, including specialty crops consumers depend on such as almonds, grapes and lettuce. California’s agricultural industry also grows jobs, employing 800,000 workers on 81,500 farms.
Healthy Food Systems

**Winning wines and vines that thrive** UC Davis trains the state’s vineyardists and certifies more than 95 percent of wine grapevines grown in the state, providing a reliable supply of high-quality vines for California’s multibillion-dollar wine industry. Meanwhile, UC research has helped control aggressive pests such as the European grapevine moth and vine mealybug. More than 90 percent of grape nursery stock sold statewide has been certified as free of the vine mealybug after hot-water treatments developed by Cooperative Extension scientists. Since these treatments have been in place, the spread of vine mealybug through nursery stock has been eliminated.

**Driving dairy** California is the nation’s leading dairy state, housing 1.75 million cattle that produce milk products worth $5.9 billion, more than any other state. UC’s research-based practices have helped the dairy industry improve production through breeding, diet and disease prevention. Cooperative Extension advisors and specialists have developed step-by-step instructions for sampling supply wells and subsurface drainage systems and solid and liquid manure that enable dairy operators to comply with water quality regulations.

**Cultivating citrus** UC Riverside is rooted in the UC Citrus Experiment Station, which opened in Riverside in 1907. Since then, the campus has played a role in the release of every orange, lemon, tangerine and grapefruit grown in California, spreading its impact from backyard trees to supermarket shelves. UC Riverside and Cooperative Extension researchers have bred more than 40 citrus varieties and helped growers fight pests and diseases such as scale, thrips and now Asian citrus psyllid, which threatens California’s $1.1 billion citrus industry. The Lindcove Research and Extension Center maintains the Citrus Clonal Protection Program’s foundation budwood orchard for virus-free citrus, available to nurseries and growers at minimal cost.

New rice varieties help feed world’s poorest

Research conducted at UC Davis and UC Riverside has helped develop submergence resistant rice varieties that are now being planted—increasing access to food for 70 million of the world’s poorest people.

Ted Batkin, president
California Citrus Research Board
Healthy Communities

UC certifies more than 14,000 adults to work with youth in its 4-H program, using the latest research on youth development practices to instill qualities young people need to succeed. California residents volunteer an estimated $60 million of their time yearly to ANR programs.

Preparing for wildfires

California communities continually face danger from wildfires. In San Diego County, Cooperative Extension advisors coordinated and implemented Wildfire Zone, a regional wildfire education and outreach program focused on what to do before, during and after a fire. On a statewide basis, a Cooperative Extension specialist developed the Fire Information Engine Toolkit, an interactive website that helps communities and individual residents assess their risk of wildfire and better understand how to protect homes and neighborhoods.

Climate tools for communities

UC Berkeley, UC Merced, UC San Diego and Cooperative Extension are participating in a groundbreaking information-sharing site developed by the California Energy Commission. Cal-Adapt allows Californians to investigate how our climate is projected to change and help plan for these changes. The site uses cutting-edge technology to provide information on climate data from precipitation to snowpack to wildfires, along with maps, predictive models, raw scientific data and tools for engagement.

The next generation of scientists

The California 4-H Science, Engineering and Technology Initiative seeks to improve science literacy and help address the need for more scientists and engineers, part of a national effort to engage 1 million new young people in science programs. The 4-H initiative is expected to connect learning with real-world situations where youth can apply science to solve problems; and, in the long term, increase the number and diversity of youth pursuing higher education and careers in science, engineering and technology. California’s 4-H science focus is showing results: In a recent survey, 59 percent of 4-H members said they would like to have a job related to science when they graduate.

The force behind 4-H

Today’s 4-H youth development programs are more than the traditional hands-on science learning that comes from raising animals; they also have a focus on engineering, technology, healthy living and citizenship. Whether encouraging youth to build rockets, raise companion dogs or take part in an ambitious statewide program to fund 1,000 service-learning projects to mark its centennial, 4-H gives young people the skills they need to succeed. Through Operation Military Kids, California 4-H clubs have provided activities for military children at mobilization briefings, during local military family events and in local 4-H programs in nine counties. The projects range from environmental education to animal science to photography.

Healthy Environments

Reducing fertilizer use

UC Cooperative Extension advisors developed a quick test to measure soil nitrate in the field so growers can match fertilizer rates with plant needs. The test has significantly reduced nitrogen loading rates in lettuce. On-farm demonstration trials have shown that by testing the soil in this way, growers can reduce their fertilizer use by about 30 percent.

Reducing pesticide and nutrient runoff in cities

UC Cooperative Extension is helping cities reduce the urban contribution to water pollution. Landscaping accounts for nearly half of home water use, with its runoff flowing through gutters and storm channels to streams and other surface waters. To evaluate residential runoff and surface-water pollution, UC found that low-cost modifications can reduce this runoff up to 65 percent. The UC Master Gardener program is now educating homeowners on these smart methods of using water.

Informing about IPM

UC Integrated Pest Management (IPM) created a new one-stop Web portal for retailers looking for information on pest management and using less toxic pesticides for their customers. Retail stores are a key source of pest management information for many Californians, and UC IPM targets relationships with retail nursery and garden centers to help them pass along UC science-based IPM information to customers.

Preserving California’s iconic oak woodlands

With 80 percent of California’s oak woodlands in private ownership, sustainability of this icon of the California landscape rests largely in the hands of individuals. UC Berkeley and Cooperative Extension researchers joined forces to craft a four-part series of webinars for landowners, range managers, foresters, conservation groups and policymakers to raise awareness and present innovative management strategies. UC research has shown that cattle grazing, oak woodlands and clean water are compatible and often complementary.

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Did you know?

5,597 certified UC Master Gardeners contributed 334,507 total volunteer hours in 2011.

The current market value of those volunteer hours is $7.8 million in service to communities throughout California.