

Infusing Sustainable Agriculture into the College of Agriculture Curriculum. C.A.Daley – Professor of Agricultural Sciences

Accomplishments:

Working with faculty, staff, students and our administration, we created the Organic Dairy Teaching and Research Unit – by certification of 85 acres of the University Farm property (pasture and row crops) for teaching, research and demonstration. This program provides for a number of high quality learning environments for our students and also serves the educational, cultural and economic needs of Northern California.

All students benefit from this project no matter what their discipline. Plant Science students gain “hands-on” experience with sustainable farming practices, as they work to build soil profile and manage pests without the use of petrochemicals. It requires that they think “out of the box” and begin to problem solve using biological systems.

Plant Science faculty have used the organically certified ground to jump start the Organic Vegetable Project – which also employs students and is used in a number of classes within the curriculum (Pest Management and Horticulture).

Animal Science students learn to work with an integrated farming system. They begin to think in terms of whole systems, that herd health is inextricably linked to soil fertility. Health soil makes healthy plants which makes healthy cows. Organic, pasture-based, milk production takes food production out of the “industrial” mantra and back to its biological roots. Working through this system, students experience a more natural, integrated approach to food production.

The organic dairy has also given birth to the “Organic Dairy Management Team”, where all student employees involve themselves in the management decisions of the dairy as well as the day to day operations of the facility. Students manage the pastures, feeding program, herd health measures, calf management, milk quality and milking hygiene. They are also involved in the budgeting process and benefit from milk quality bonuses through our incentive program.

Agricultural Business students learn about value added marketing and the economics of alternative production systems. The model also presents a system for the economic analysis of the ecological differences between organic and conventional systems.

In addition, we have created a model composting demonstration facility on farm to mitigate much of our waste management issues while creating a wonderful, nutritious soil amendment for our organic acreage. With the help of AS recycling, we have expanded this process to include food waste from campus and reduce the amount of material going to land fills.

Current classes utilizing this model of production to demonstrate sustainable practices: We are of the philosophy that we need to infuse sustainable practices

throughout the curriculum, in all aspects of our program, rather than devote a specific class to the issue. A single class in sustainable farming practices would be nice, but infusing the philosophies throughout the curriculum will send an entirely different message to our students, creating a broader, more significant impact on student learning. By infusing the philosophies throughout the curriculum, we will promote the idea that this is the new standard way of operation.

Current classes that use this unit:

1. ANSC 110 Experiential learning: 10 students/ semester work at the dairy for credit. The Dairy Management Team mentors these students, training them in all the SOPs for the unit, helping them with their interpersonal skills and instilling a “team” approach to learning.
2. ANSC 474: Dairy Production and Management. We do a two week lesson plan in organic dairy production in this course, focusing on organic certification, differences between organic milk production and conventional milk production in regard to soil fertility, forage quality, herd health, ecological impact, profitability, and value added marketing.
3. ANSC 230: Feeds and Nutrition: (forage species compatible with milk production and organic practices; soil amendments; impact of soil amendments on forage quality)
4. ANSC 301: Integrated Animal Systems: (Intensive grazing management; organic milking hygiene and milk quality; organic milk production practices)
5. ANSC 101: Introduction to Animal Sciences (Organic milking hygiene and making food from milk, i.e., cheese)
6. PSSC 363: Forages (organic pasture forages and management)
7. ABUS 411: Agricultural Marketing Planning (develop a marketing plan for our organic ice cream product)

Plans for the future:

1. Increase the number of courses we touch with the organic methodology, particularly in PSSC and ABUS.
2. Create a creamery to produce and sell our organic milk products locally, a model that would be excellent for our students in ABUS to manage, and a great service to our local community.
3. Creat/find funding for an Endowed Chair of Sustainable Agriculture – so we can further develop all the research opportunities this model affords, as well as improve our outreach to the campus and general community.
4. Create a comprehensive nutrient management plan for the farm.
5. Create a state of the art waste management system at the farm.
6. Develop a Center for Sustainable Agriculture at the University Farm.
7. I have big plans for the farm... all can be accomplished with cooperation and funding.