

**Teach the Teachers: Garden-Based Education
about Fertility and Fertilizers**

Report of Activities for Year 2003

**A project of the Center for Garden-Based
Education at AGRIsclapes
Department of Horticulture/Plant and Soil
Science Cal Poly Pomona University**

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Introduction: Current interest in integrating garden-based learning into K-12 classrooms focuses on addressing the various curricular standards such as science, literature, social studies, nutrition, mathematics and art through garden-based themes. Since 1999, Cal Poly Pomona has served as one of three Regional Support Centers for A Garden in Everything School under the auspices of the California Department of Education Nutrition Education Team. Our charge is to reach out to schools and teachers in the our region (eastern Los Angeles County, western San Bernardino County, and part of Riverside County) to provide support and training in garden-based learning.

This program is housed at AGRIsclapes, a 40 acre demonstration and education center for food, agriculture, and the urban environment on the Cal Poly Pomona campus. AGRIsclapes opened in mid-September 2001 and includes a visitor center with interactive exhibits, a farm store, nursery, classroom building, offices, and 20 acres of demonstration plots and gardens. We have a unique opportunity to reach out to an urban public that is very much disconnected from the source of its food and systems which provide it.

Project Objectives: The project objectives have been integrated into the ongoing programs already established by the RSC such as our annual school gardening conference and resource fair, our hands-on workshop series, and our communication vehicles such as a newsletter and website. In addition, the AGRIsclapes will provide a site for additional teacher and student education.

With these aspects in mind, the objectives of this project are to:

1. Research and gather appropriate curricular materials for K-12 relating to soil science, plant nutrition, soil/water relations, and soil management.

1. Present workshop component on soils, fertility and soil/water relations.
2. Include presentations on these topics at our annual conference
3. Involve appropriate organizations in Teacher's Resource Faire at annual conference.
4. Include resources and information on website, in resource guide, and in newsletter.
5. Research, design, and implement field experiment 'stations for appropriate grade level(s) for hands-on demonstrations of the principals of soil science, plant nutrition, soil management, and soil/water relations to be installed at AGRIsclapes.

Project Description: The specific tasks listed above under objectives (which are ongoing) have been carried out within the activities listed below:

Collaboration with San Gabriel Valley Science Project: During Summer 2003, approximately 45 4-9th grade science teachers participated in a three-week workshop focusing on science teaching methodology and up-grading of content skills. The project was funded by a grant submitted by faculty in Cal Poly Pomona's Biology Department. Science content was provided by the Center for Garden-Based Education on topics such as soil science and plant nutrition, plant biotechnology, hydroponics, insect taxonomy and ecology, bee science, and California native plants. Workshops on specific topics were one to two days in length. Participation in this project has led to involvement in a similar NSF-funded project in Summer 2004.

School Gardens Conference

Our third school gardens conference was held on Saturday, November 8, 2003 at the Bronco Student Union on the Cal Poly Pomona campus. Attendance, including participants, presenters, and exhibitors, was approximately 55. Our program focused on the transformative impact of gardens on children's learning; nutrition resources for gardening; integrating garden themes even without a dedicated school garden; linking the garden to K-6 curricula; how to prepare the soil for the garden; insect and disease prevention in the garden; and identifying resources available to teachers to support their gardening efforts. Our keynote speaker was Mr. George Levenson of Informed Democracy, writer and producer of children's videos *The Pumpkin Circle* and *Bread Comes to Life*. One of the most well-received portions of the conference was a panel of teachers who currently maintain school gardens and use them in their teaching.

Teaching Nutrition in the Garden: A workshop was held on October 11 on teaching nutrition in the garden. Ms. Judy Huffaker, R.D. and Nutrition Educator for the Alhambra School District was the facilitator. Participants learning about the linkage between nutrition and academic achievement, resources available, cooking the classroom, food safety tips, and nutrition-related garden activities. The attendance was 11 teachers.

Everything You Always Wanted to Know About Starting School Garden: This workshop was held on Saturday, December 6 and covered the horticultural aspects of starting a garden in addition to the need to develop support from administrators, other teachers, parents, and school staff. The facilitator was Ms. Jennie Rees, owner of a horticultural design business and former director of the Gardening Angels program for Los Angeles County Cooperative Extension. The attendance was 16 teachers.

School Field Trips: Since March of 2003, over 5100 school children have visited AGRIsCapes and participated in tours of our science field stations. Crops that have been grown and featured in our field trips include wheat, citrus, and pumpkins. We also demonstrate the Three Sisters Garden which represents an ecosystem for plant growth and soil fertility, as well as a cultural linkage with Native American agriculture. Children explore our herb garden and learn about nutrition with an emphasis on eating more fruits and vegetables. As part of the field trip experience, children receive a healthy snack, a plant they have planted or a pumpkin, and nutrition and gardening material to take home.

Communication and Outreach: During 2003, we continued with our newsletter mailing to over 900 addresses, posted our website, began development of an email newsletter list, and continued networking with other groups and programs with goals similar to ours. We increasingly are becoming recognized as a source of agricultural literacy in our region through these efforts.

Results and Conclusions: This is the final year of three in which we have received funding from the Fertilizer Research and Education Program. While the amount of funding was not large, it was extremely helpful in assisting us with implementing our programs to education children and their teachers about food and agriculture and the natural resources that are involved.

Our future direction will include reaching out to science teachers and becoming more involved in science education. This integration of food and agriculture themes into the study of science will expand our audience and enhance public understanding of these important topics.

Our biggest challenge will be continuing to fund our programs, as we are not supported by University budgets. It is an ever-continuing effort to find sources of financial support and partnerships to further our work.

We have excellent start, however, and appreciate very much the funding received from the FREP grants. Thank you for your support.