The Summer Agricultural Institute is a program of the University of Arizona Cooperative Extension, Maricopa County.

It is funded by the Arizona Foundation for Agricultural Literacy through generous donations from individual members and organizations:

**Sponsors**
- Arizona Crop Improvement Association
- Arizona Department of Agriculture
- Arizona Farm Bureau
- Arizona Milk Producers
- Arizona Nursery Association Foundation
- Arizona Wool Producers Auxiliary
- Bales & Bales II
- Booth Machinery
- Buckeye Valley Natural Resource Conservation District
- Coconino County Farm Bureau
- Eileen, Dwayne and Vinson Dobson
- Kathleen & Arnott Duncan
- Duncan Family Farms, LLC
- Farm Credit Services Southwest
- Garnett Land LLP
- Gila Bend NRCD
- Siebe Hamstra Dairy
- Maricopa County Farm Bureau
- R & S Farms, Rick & Sherry Saylor
- University of Arizona College of Agriculture
- Wellton-Mohawk Valley Natural Resource Conservation District
- Yavapai Cattle Growers
- Yavapai County Tech Prep

**In Kind Sponsors**
- Arizona Beef Council
- Arizona Department of Agriculture
- Arizona Department of Education
- Arizona Farm Bureau
- Arizona FFA
- Arizona Milk Producers
- Arizona State Cowbelles, Inc.
- Booth Machinery
- Conklin Rose Company
- Coronation Peak Ranches
- Dairy Council of Arizona
- Dole Salad Plant
- Farm Family Hosts
- Maricopa County Farm Bureau
- McElhaney Cattle Company
- Nunez Plantation
- Pinal Energy/Arizona Grain
- Select Seed of Arizona
- Salt River Project
- Shamrock Farms
- University of Arizona Cooperative Extension, Maricopa County
- University of Arizona Cooperative Extension, Yuma County
- University of Arizona Maricopa Agriculture Center
- USDA Arid Lands Research Center
- Wellton-Mohawk Irrigation & Drainage District
- Waldrons Farm
- Yuma County Farm Bureau
- Yuma Fresh Vegetable Association
An agriculture commodity is something grown on a farm or a ranch. Milk, oranges, beef and cotton are agriculture commodities. This map shows all the major commodities grown in Arizona’s 15 counties. There are 7,500 farms in our state.

Source: 2001 Arizona Agricultural Statistics Bulletin
www.nass.usda.gov/az/
Monday, June 16  (Jeannette Fish & Marge Martin)

Morning Sites

7:00 am  A  Registration/continental breakfast  
*Hosted by Dairy Council® of Arizona*  
UA Cooperative Extension, Maricopa County  
4341 E. Broadway, Phoenix, AZ  85040  
http://cals.arizona.edu/maricopa  

7:30  Welcome / Introductions / Ag Quiz

8:30  B  Waldrons Farm – Wholesale nursery and custom grower  
Jane Waldron  
6414 S. 26th St., Phoenix, AZ 85016  
www.waldronsfarm.com  

10:30  C  Shamrock Farms – Working dairy farm tour  
Debbie Downs  
40034 W. Clayton, Stanfield, AZ  85272  
www.shamrockfarmstour.net  

12:00 pm  Lunch at Shamrock Farms  
*Hosted by Dairy Council® of Arizona*  

12:45  D  Pinal Energy, LLC. – Ethanol Plant  
John Skelly, Brian Pasbrig  
38585 W. Cowtown Rd., Maricopa, AZ  85239  
www.pinalenergyllc.com  

1:30  Depart
Monday Morning
Monday, June 16 (Jeannette Fish & Marge Martin)

Afternoon Sites

3:30 pm  
A  
**McElhaney Cattle Company**  
Bas Aja  
34673 E. County 9th St, Wellton, AZ  85356  

4:30  
**Depart** for Yuma

5:15  
B  
**Hotel Check-in** – Best Western  
1450 S. Castledome Avenue, Yuma, AZ  85365

6:30  
C  
**Dinner at Booth Machinery**  
6565 E. 30th St., Yuma, AZ  85365

*Hosted by Arizona State Cowbelles, Inc.*  
- Welcome from Yuma Mayor, Larry Nelson  
- Presentation: *Addressing Misconceptions About Agriculture*  
  Jeannette Fish, Maricopa County Farm Bureau  
  www.ageducate.org
Monday Afternoon
Tuesday, June 17  (Peggy Jo Goodfellow)

6:30 am  Breakfast at hotel - Best Western
1450 S. Castledome Avenue, Yuma, AZ 85365

7:00  Depart

7:45  Coronation Peak Ranches – Working produce farm (melons, cotton, wheat, black-eyed peas)  (pg 36)
John Boelts
County 10 and Avenue 28 E, Wellton, AZ
Mailing address: 1573 E. Kuns Ct. Yuma, Arizona 85365

10:15  Dole Salad Plant
Barb Braden
3725 S. Avenue 3 E, Yuma, AZ 85365
www.dole.com  (pg 38)

11:30  Booth Machinery – Agricultural and farm equipment
Harold Maxwell
6565 E. 30th St., Yuma, AZ 85365
www.boothmachineryinc.com  (pg 34)

12:00 pm  Lunch at Booth Machinery
Hosted by Yuma Fresh Vegetable Association  (pg 51)
Rick Rademacher - President

1:30  Nunez Plantation – Medjool date production  (pg 41)
Gus Nunez
Field: County 19 and Avenue A, Somerton, AZ
Mailing address: 19438 County South Avenue A, Somerton, AZ 85350

2:20  Select Seed of Arizona – Seed company
Louis and Michael Didier
14260 S. Avenue 3 E, Yuma, AZ 85365
www.selectseedaz.com  (pg 44)

3:10  Depart for Hotel

3:30  Farm Family pick-up – Best Western Hotel
1450 S. Castledome Avenue, Yuma, AZ 85365
Tuesday

20 Miles East
The 2008 Summer Ag Institute would like to thank all the families who hosted teachers and gave them an opportunity to experience a taste of real life in the agricultural community.

Peggy & Art Allen
Ernesto Amado
John & Alicia Boelts
Tim & Eileen Dunn
Mitch Ford
Matt Haney
Bob & Cheryl Harman
John & Mary Jean Klingenberg
Bruce & Sari McLaurin
Marcos & Cindy Moore
Terri Murdock
Judy Newman
Rick Radamacher
Clyde & Vickie Sharp
David & Melissa Sharp
Jose & Laura Solorzano
**Wednesday, June 18** (Malorie Lewis & Brett Cameron)

830 am  **Meet at Hotel** – Best Western  
1450 South Castledome Avenue, Yuma, AZ 85365

9:00  **Depart**

9:15  **UA Cooperative Extension**, Yuma County – Kurt Nolte  
Session on Precision Agriculture – GPS Fieldwork  
2200 W. 28th St., Yuma, AZ 85364  
www.cals.arizona.edu/yuma  
(pg 47)

10:45  **Wellton-Mohawk Irrigation & Drainage District**  
Charlie Slocum, David Sharp  
30570 Wellton-Mohawk Drive, Wellton, AZ 85356  
www.wellton-mohawk.org  
(pg 50)

12:30 pm  **Lunch** / on the bus  
Travel time on the bus will be 2-3 hours - use this down time to view educational videos, write thank you notes, relax, journal, nap, etc.

3:00  **Conklin Rose Company** - specialty rose growers  
(pg 35)  
Henry Conklin and sons  
7011 N. Sarival Rd., Litchfield Park, AZ 85340

6:00  **Hotel Check-in** – LaQuinta  
15241 S. 50th St., Phoenix, AZ 85044

6:30  **Dinner** – walk with group to Cracker Barrel (exercise is good for us!)

7:30  LaQuinta Conference Room immediately following dinner:  
**Activities Development Session** - Monica Pastor  
**FFA Presentation** - current and former FFA officers
Wednesday
Thursday, June 19 (Victor Jimenez, Erin Taylor & Ed Minch)

7:30 am  Breakfast at hotel

8:30  Depart

9:00  A  U of A Maricopa Agriculture Center – Victor Jimenez, Bob Roth
37860 Smith-Enke Rd., Maricopa, AZ 85238
www.cals.arizona.edu/aes/mac  (pg 48)

9:50  Insect Management & Collection – Ed Minch & Dave Langston

10:35  Siphon Tube Experience – Victor Jimenez

11:05  Gila River Community Project – Sonny Nieto

11:35  Project WET – Mary Ann Stoll

12:15 pm  Lunch

1:00  Insect Science (Group A) – Dave Langston
Pollination Science (Group B) – Ed Minch

1:40  Insect Science (Group B) – Dave Langston
Pollination Science (Group A) – Ed Minch

2:20  MAC Ag-Ventures & Ag Jeopardy – Victor Jimenez

3:00  Tour USDA Arid Lands Research Center – Dave Dierig

3:30  Depart

4:15  B  Return to Hotel - LaQuinta
15241 S. 50th St., Ahwatukee

6:10  Depart

6:30  C  Eighteenth Annual Summer Agricultural Institute
Sponsor’s Appreciation Banquet
Hosted by Salt River Project
SRP’s PERA Club
1 E. Continental Dr., Tempe, AZ 85281
www.srpnet.com  (pg 43)

9:00  D  Return to hotel – LaQuinta
Friday, June 20  (Gerry Parker)

7:30 am  A Breakfast at hotel, and checkout

8:00    Depart

8:30    B Arizona Farm Bureau
        325 S. Higley, Gilbert, AZ 85296
        www.azfb.org  (pg 32)

        Curriculum Incorporation
        Gerry Parker
        U of A AG Literacy Program
        www.cals.arizona.edu/agliteracy/index.htm

11:20    Arizona Farm Bureau presentation
         Kevin Rogers, Arizona Farm Bureau President

11:40    Arizona Department of Agriculture presentation
         John Caravetta, Associate Director
         www.azda.gov

12:00 pm Lunch and Organizational Displays
         Hosted by Arizona Milk Producers  (pg 37)

1:30    Wrap up / Evaluation / Discussion

2:00    C Depart for UA Cooperative Extension, Maricopa County
        4341 E. Broadway, Phoenix, AZ 85040
        http://cals.arizona.edu/maricopa/  (pg 46)

        Adjourn
Friday
# Friday Exhibitors

<table>
<thead>
<tr>
<th>Organization</th>
<th>Contact Person</th>
<th>Contact Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ Dept. of Health Services Office of Nutrition Services</td>
<td>Marie Tymrak, MS, RD</td>
<td><a href="mailto:tymrakm@azdhs.gov">tymrakm@azdhs.gov</a> 602-542-2827</td>
</tr>
<tr>
<td>Arizona Farm Bureau</td>
<td>Peggy Jo Goodfellow</td>
<td><a href="http://www.azfb.org">www.azfb.org</a> 480-635-3609</td>
</tr>
<tr>
<td>Arizona Statewide Gleaning Program</td>
<td>Jami Kakinuma</td>
<td>602-528-0740 <a href="mailto:jami@azfoodbanks.org">jami@azfoodbanks.org</a></td>
</tr>
<tr>
<td>Central Arizona Project</td>
<td>Bob Navigato</td>
<td><a href="mailto:bNavigato@cap-az.com">bNavigato@cap-az.com</a> 623-869-2134</td>
</tr>
<tr>
<td>Dairy Council of Arizona</td>
<td>Colleen Bergum, Terri Verason</td>
<td><a href="http://www.dairycouncilofaz.org">www.dairycouncilofaz.org</a> 480-966-7211</td>
</tr>
<tr>
<td>Kidsville News!</td>
<td>Cathy Vix, Andrea Hesketh</td>
<td>623-536-5967 <a href="mailto:cathy@houseofelliott.com">cathy@houseofelliott.com</a></td>
</tr>
<tr>
<td>Junior Master Gardeners</td>
<td>Erin Taylor</td>
<td><a href="mailto:etaylor@cals.arizona.edu">etaylor@cals.arizona.edu</a> 602-470-8086</td>
</tr>
<tr>
<td>Maricopa County Farm Bureau</td>
<td>Jeannette Fish</td>
<td><a href="mailto:mcfb@questoffice.net">mcfb@questoffice.net</a> 602-437-1330</td>
</tr>
<tr>
<td>The Phoenix Zoo Education Programs</td>
<td>Gabrielle Hebert</td>
<td><a href="http://www.phoenixzoo.org">www.phoenixzoo.org</a> 602-286-3859</td>
</tr>
<tr>
<td>Superstition Farm</td>
<td>Melrose</td>
<td>480-648-6128 <a href="http://www.superstitionfarm.com">www.superstitionfarm.com</a></td>
</tr>
<tr>
<td>United Dairymen of Arizona Young Cooperators</td>
<td>Frances Lechner</td>
<td><a href="mailto:flechner@udaz.org">flechner@udaz.org</a> 480-966-7211</td>
</tr>
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Arizona Beef Council

Who We Are
Congress created the Beef Promotion and Research Act, the “Beef Checkoff Program,” with passage of the 1985 Farm Bill. Producers approved making the Beef Checkoff Program mandatory in 1988, with 79 percent voting in favor of it.

Producers asked that the checkoff program be built on these tenets:
• All producers and importers pay the same $1-per-head.
• One-half of the money collected by state beef councils—50 cents of every dollar—is invested through the beef council in each state.
• All national checkoff-funded programs are budgeted and evaluated by the Cattlemen’s Beef Board, and independent organization of 104 checkoff-paying volunteers.
• Beef Board members are nominated by fellow state producers and appointed by the U.S. Secretary of Agriculture.

The beef checkoff acts as a catalyst for change. The checkoff doesn’t own cattle, packing plants or retail outlets. It can’t control prices or single-handedly turn around a bad market. The Beef Checkoff Program was designed to stimulate consumers to buy more beef. This is accomplished through a combination of initiatives including consumer advertising, research, public relations, education and new product development.

Resources for Teachers
The Arizona Beef Council provides materials for classroom, presentations and ranch tours all for FREE! Visit www.arizonabeef.org for more information.


Other checkoff funded websites that would be helpful are:
www.beefitswhatsfordinner.com - Helpful cooking tips and recipes
www.beeffrompasturetoplate.org - Explains the story, environmental and economics of beef
www.beefnutrition.org - All the nutrition information you need
www.nationalbeefambassador.org - Opportunity for students to become ambassadors for beef
www.zip4tweens.com - Helps kids & their families find a balanced approach to a healthier lifestyle

For more education questions or requests contact Carrie Robbs at 602-273-7163 or crobbs@arizonabeef.org
Arizona Department of Agriculture

The Arizona Department of Agriculture is a cabinet-level statewide agency with more than 320 employees and an annual budget of more than $23.9 million. Our mission is to regulate and support Arizona agriculture in a manner that encourages farming, ranching, and agribusiness while protecting consumers and natural resources. The agency consists of three main divisions:

**Animal Services**
**Environmental Services**
**Plant Services**

The Department also includes a State Agricultural Laboratory; a Citrus, Fruit and Vegetable Standardization and Fresh Produce Grade Inspection program; and an Agricultural Consultation and Training program.

**Plant Services Division** - Protecting Arizona’s native plants. Ensure the public and the agriculture industry that dangerous plant infestations prevented or readily controlled. (Such pests include: gypsy moth, Mediterranean fruit fly, and imported fire ant, among others.)

**Animal Services Division**
We protect consumers from contagious and infectious disease in livestock, poultry, commercially raised fish, meat, milk, and eggs. We do this by enforcing laws concerning the movement, sale, importation, transport, slaughter, and theft of livestock. In addition, we conduct food quality and safety inspections of milk and meat products produced and processed in Arizona, and of egg and egg products produced in, or imported to, Arizona.

**Environmental Services Division**
Register and licensing feed, fertilizer, seed and pesticide companies or products in accordance with federal and state laws; Sampling for product quality to help protect the consumer; Enforce pesticide use compliance to ensure established buffer zones are adhered to, environmental concerns are met, and people are protected; Train and certify pesticide applicators and advisors. This includes the Worker Safety program, which is responsible for preventing or limiting farm workers exposure to pesticides.

**Citrus, Fruit and Vegetable Standardization**
The Citrus, Fruit, and Vegetable Standardization program monitors and enforces the quality standards for all fresh fruit and vegetables produced and marketed in Arizona.

Citrus, Fruit, and Vegetable Standardization continues to support the state-wide gleaning program -- a collection of wholesome food for distribution to the poor and hungry. This program gathered and distributed over 29 million pounds of produce during fiscal year 2004.

**Agricultural Consultation and Training** - Leads to Voluntary Compliance
The Agricultural Consultation and Training program (ACT) is an innovative compliance assistance program designed to assist farmers, ranchers and others involved in agriculture. Act responds to requests from the agricultural community for on-site visits providing compliance in a non-regulatory mode.

**State Agricultural Laboratory**
We provide quality agricultural and environmental laboratory analysis, identification, certification and training services to various regulatory divisions of the Department and others as provided by law. To accomplish this mission, we are divided into Biology and Chemistry.
Arizona Department of Education -
Career and Technical Services
Future Farmers of America

The National FFA Organization was organized as the "Future Farmers of America" in 1928 in Kansas City, Mo. In 1988, the organization began doing business as The National FFA Organization to reflect the broadening field of agriculture, which today encompasses more than 300 careers in everything from agriscience to biotechnology to turf grass management.

FFA operates on local, state and national levels. Student members belong to chapters organized at the local school level. Agricultural education instructors serve as chapter advisors. Chapters are organized under state associations headed by an advisor and executive secretary, often employees of the state department of education. States conduct programs and host annual conventions.

In 1988, the official organization name was changed to The National FFA Organization to reflect the broadening field of agriculture, which today encompasses more than 300 careers in everything from agriscience to biotechnology to turf grass management. Through active participation in the FFA, members learn by taking part in and conducting meetings, speaking in public, participating in contest based on occupational skills, earning awards and recognition and becoming involved in cooperative efforts and community improvement. The FFA offers opportunities for becoming productive citizens in our democracy.

FFA members believe in leadership, citizenship, and patriotism. They believe in free enterprise-freedom under the law-in making their homes, schools, and communities’ better places in which to live and work.

Members participate in regular chapter meetings, present motions, debate issues, and take part in decision making. They work hard, but they also play hard, as recreation is also a part of each year's program of activities.
Arizona Farm Bureau

Arizona Farm Bureau is a grassroots organization dedicated to preserving and improving the Agriculture industry through member involvement in education, political activities, programs and services. The Arizona Farm Bureau is Arizona’s largest farm and ranch organization with membership that represents production agriculture throughout the state of Arizona.

Farm Bureau’s purpose is to be an, independent, non-governmental grassroots organization that analyzes problems and formulates action to achieve educational improvement, economic opportunity, and social advancement in order to promote the financial and overall well being of agriculture and our members.

We are the "Voice of Agriculture in Arizona."

As the agriculture industry faces new challenges in the future, Farm Bureau will be there to assist our members in meeting those challenges. We will be involved in lobbying on county, state and national issues. We will be there to discuss issues of profitability, property rights, labor, water, trade, farm policy, tax issues, environmental issues and much more. We will also continue to offer value to our members by making products and services available to our members.

We reach out to the public in many ways, to teach them that their food, fiber and ornamentals come from farms and ranches, not from the store. Activities to promote agriculture to the public and the schools are also a focal point of the Farm Bureau.

Farm Bureau is local, county, state, national, and international in its scope and influence, and is non-partisan, non-sectarian, and non-secret in character. We are supported by dues-paying members, and we offer a myriad of services, discounts and benefits to our members.

Arizona has 13 active county Farm Bureaus covering all 15 counties. These are the basis of our grassroots organization. Each county Farm Bureau is an independent entity governed by local farmer and rancher volunteer leaders. All ideas, solutions, and leadership come from the members of the county Farm Bureau.
The Arizona State Cowbelles is a unified, professional organization made up of generations of Arizona women playing a vital role in the state’s cattle industry. The organization got its start in 1939 when a group of ranchers’ wives in the Douglas area formed a social club to cement good will and friendship among the wives and mothers of cattlemen in southeast Cochise County. The women named their organization “The Cowbelles.” The club immediately began doing charitable work.

Word of the unique organization spread quickly. The Wyoming State Cowbelles was formed in 1940. Texas women also asked permission to organize their own state Cowbelles. The Arizona State Cowbelles was formally organized in January, 1947, during the annual convention of the American National Cattlemen’s Association in Phoenix. Mattie Cowan, president of the original Cowbelles in Douglas, was elected the first state president. A total of 16 local Cowbelles groups have been organized around the state.

Over the years, the Cowbelles have turned their primary focus to beef promotion and public education about the nutritional value of beef and the lifestyle of ranch families. Arizona Cowbelles work hand in hand with the Arizona Beef Council to bring the message of ranching and the beef industry to their local schools, communities, and businesses.

Find out more about the Cowbelles’ Scholarship Program.

Find out how to contact the Cowbelles’ Officers and Local Presidents.
Booth Machinery

Booth Machinery is proud to offer a broad range of products and services designed to help increase yields and reduce costs in your farming operations. The purpose of our business is to satisfy the NEEDS of existing and prospective customers differently and better than our competitors. If we do this, using sound management practices, we will profit and GROW.

Company Philosophy
The only asset of a company that can not be duplicated by a competitor is the skills and talents of its employees!

Booth Machinery Inc. opened its 53,000 square foot facility on March 1, 1999. This facility is located on 12 acres at 6565 East 30th Street. With easy access to Interstate 8 our facility is easy to find. Currently the Parts Department occupies 12,000 square feet of building space with 3,000 feet dedicated to self service parts displays. With over $1,100,000 in parts inventory and a first pass fill rate of 90+% Booth Machinery provides its customers parts service that is one of the best in North America. Our commitment to stocking the right part, assures our customers of maximum uptime. In order to service our customers promptly, we have 7 customer stations at the parts counter. We understand that time is money.

The Service Department
The Service Department's shop area consists of 20 service bays that occupy 22,000 square feet that is climate controlled. The shop is equipped with four 5 ton bridge cranes and ten bulk oil dispensing stations. Each group of 4 technicians has their own computer terminal that they use to look up and order their parts. These investments were made in order to minimize the time that a customers unit stays in the shop. Again we want to maximize our customers uptime. These features also benefit our customers monetarily. Because we are so efficient Booth Machinery is a flat rate shop. Our customers will never be billed more than Case's warranty flat rate amount for labor. Most dealers are time and material shops. We have found that our customers save approximately 30% on their cost of labor when we do a repair vs a time and material shop.

Training Center
Because we believe in training, Booth Machinery built an on-site training facility to ensure that all of our technicians receive the training they need. Our customers can be assured that our technicians have the training to do the job efficiently and correctly. Our customers can also enjoy our training center for meetings and special functions.
Conklin Rose Company

Conklin Rose Company is a contract rose grower. They grow and ship roses to nurseries throughout the United States. They do not sell directly to the public. According to an article in the November 1998 issue of Phoenix Home & Garden, Conklin Rose Company is one of five major Arizona growers which combined account for 40 percent of all garden roses (not including cut flowers) grown in the U.S. This translates to 18 million out of the 40 million roses that are harvested annually. Each grower plants 200 to 275 rose varieties -- miniatures, hybrid teas, floribundas, grandifloras, shrubs and climbers.

The first fossil records of the rose date back 35 million years. In 3000 B.C., in what is now Iraq, the Sumerians created the first written record of the rose. Sappho, in her 600 B.C. "Ode to the Rose," referred to this beauty as the queen of flowers, a reference still popular today.

Jumping ahead to the 16th century, colonists brought the rose to North America, making it the longest cultivated European plant in this country. In 1798, Empress Josephine acquired her palace at Malmaison and created the most remarkable rose garden ever planted. It included every variety known at the time (about 250).

"Modern" rose hybrids date back to 1867, and by 1920 hybrid teas dominated the market. They remain the most popular rose variety today. All-America Rose Selections formed in 1938 to test new rose varieties to determine which, if any, could be recommended to the public. One of the most popular roses of all time, "Peace," was smuggled to the United States from occupied France in 1945.

The colors of roses have often been associated with certain sentiments and symbolism. The chart below lists some common connections:

<table>
<thead>
<tr>
<th>Color</th>
<th>Symbolism</th>
</tr>
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<tbody>
<tr>
<td>Red</td>
<td>Love, respect</td>
</tr>
<tr>
<td>Deep Pink</td>
<td>Gratitude, appreciation</td>
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<tr>
<td>Light Pink</td>
<td>Admiration, sympathy</td>
</tr>
<tr>
<td>White</td>
<td>Reverence, humility</td>
</tr>
<tr>
<td>Yellow</td>
<td>Joy, gladness, Sociability, friendship</td>
</tr>
<tr>
<td>Orange</td>
<td>Enthusiasm, desire</td>
</tr>
<tr>
<td>Red and Yellow</td>
<td>Gaiety, joviality</td>
</tr>
</tbody>
</table>

(from www.rose.org)
Coronation Peak Ranches Inc is a farming company operating over 4000 acres of irrigated cropland in the Yuma, Gila, Dome and Wellton-Mohawk Valleys near Yuma, Arizona.

Winter crops include head, leaf and romaine lettuces as well as spinach, broccoli, cauliflower and a number of seed crops. Our spring and summer crops include cantaloupe, honeydew, tuscan and watermelons, duram wheat for pasta, black-eyed peas and cotton. Almost every acre is planted and harvested twice and on occasion three times annually.

The company is owned by four, unrelated, business partners and their wives who operate the corporation in the same fashion as a family would run farm although we aren't related other than by an interest in profitable farming.
Dairy Council® of Arizona
Arizona Milk Producers

Dairy Council® of Arizona is a nonprofit nutrition education organization supported by Arizona's milk producers and is an affiliated unit of National Dairy Council®. We strive to provide you with the latest in nutrition research and educational materials to help make your job easier. We offer a wide range of scientifically based education materials for all age groups, from pre-school through adult audiences. As a leader in nutrition education services in Arizona, we provide information on current nutrition issues such as calcium needs, osteoporosis, hypertension, weight management, lactose intolerance, dental health, and general nutrition. All Dairy Council of Arizona nutrition education materials are based on the MyPyramid Food Guidance System. Some of our materials are also available in Spanish.

No school wellness policy can be complete without incorporating nutrition education into the plan. Dairy Council of Arizona provides nutrition curriculum packages for several grade levels, as well as other nutrition education materials you can use to help you implement the best wellness policy you can. Dairy Council of Arizona is proud to provide these award winning, age-specific nutrition education materials throughout the state at no charge.

Arizona Milk Producers is the advertising and promotion arm of the organization, dedicated to promoting the benefits of milk and dairy foods to consumers. One aspect of this promotion is to highlight the importance of agriculture in the state and how dairy farmers care for their land and animals.

Arizona’s dairy farmers are committed to providing you and your family with wholesome milk and dairy products. This commitment starts on the farm with top-notch animal care and extends across the supply chain — from the milk tanker trucks to the processing plant to the grocery store — to ensure that the dairy foods you enjoy each day are as wholesome and pure as nature intended.

Most dairies are family-owned, and as active members of their communities, farm families take pride in maintaining natural resources. That means preserving the land where they live and work, protecting the air and water they share with neighbors, and providing the best care for their cows—the lifeblood of their business.

Dairy Council of Arizona, PO Box 26877, Tempe, AZ 85282-6877
www.dairycouncilofaz.org
Dole Salad Plant

Founded in Hawaii in 1851, Dole Food Company, Inc. is the world's largest producer and marketer of high-quality fresh fruit, fresh vegetables and fresh-cut flowers. Dole markets a growing line of packaged and frozen foods, and is a produce industry leader in nutrition education and research. The Company does business in more than 90 countries and employs, on average, 36,000 full-time, regular employees and 23,000 full-time seasonal or temporary employees, worldwide.

Yuma is one of four Value Added vegetable plants for ready-to-eat salads. The other three are located in California, Ohio, and North Carolina. Yuma VAP was built in 1993, and opened for production in 1994. During the winter months the facility produces over a 1,000,000 packages or more than 2,000,000 pounds of raw material daily. Production is reduced by half during summer months. Dole provides over 125 individual SKU's ranging from 5 ounces to 5 pounds per package.

Dole is one of Yuma's largest employers. Dole is active with community organizations dedicated to nutrition and children's wellness. Some of these include, Yuma Community Food Bank, Arizona Children's Association, and the Yuma Regional Medical Center.
Maricopa County Farm Bureau

Maricopa County Farm Bureau (MCFB) is a grassroots membership organization dedicated to promoting and defending agriculture in a county with 4 million residents. A non-profit organization governed by an elected board of directors who are local agriculture producers, MCFB concentrates its efforts on three areas: representing agriculture in local and county legislative and regulatory actions; education and communication; and member benefits.

MCFB is one of the county Farm Bureaus that make up the Arizona Farm Bureau Federation.

As part of our educational outreach, MCFB helps organize such public events as Arizona Agriculture Day and Farm Animal Appreciation Day. Our farmers are also seen on media features that show the real source of food, fiber and ornamental plants.

Our Ag in the Classroom program includes a partnership with the University of Arizona Extension, Maricopa County, to bring presentations to your school to help your students learn about the plants and animals that provide all the food they eat, most of the clothes they wear, the materials to build their homes and the ornamental plants and trees that make their homes and properties beautiful.

MCFB originated the popular “How to Grow a Pizza” traceback exercise that shows how many farms it takes to provide the ingredients for pizza. Schedule “How to Grow a Pizza” presentations for your school by calling MCFB at 602-437-1330 or Gerry Parker at the Extension office, 602-470-8086, ext. 389.

Farm Bureau is an “umbrella” organization that covers all aspects of agriculture – large and small production facilities growing everything from cilantro to horses and shrimp, from dairy cattle to zucchini. That’s why we call ourselves “The Voice of Agriculture.”

Maricopa County Farm Bureau, 4001 E. Broadway, Ste. B-9, Phoenix, AZ 85040
602-437-1330 – e-mail: mcfb@qwestoffice.net
McElhaney Cattle Company

Sam McElhaney founded McElhaney Cattle Company in 1940 when he acquired a 1000 head feed yard in Tempe, AZ. The operation remained in Tempe and grew to 10,000 until 1959 when it was moved to this location with an initial capacity of 35,000. Today, up to 120,000 head of cattle can be fed at one time with the average inventory running between 100,000 to 115,000 head. The cattle are on feed for an average of 250 to 350 days, depending on cattle type and in-weight, which enables us to process approximately 120,000 head a year. McElhaney Cattle Company continues to be family owned and ranks in the top 50 privately owned businesses in the state. The company employs approximately 120 persons from the local area on a full time basis and adds about $4 million to the local wage base.

The feeder calves are purchased from Holstein calf ranches, Texas order-buyers as well as Mexico and are transported in by truck. The average weight when placed on feed is 275 to 450 lbs. All finished feed rations are manufactured through our computer operated feed mill. The ingredients are largely feed grains, with corn being the most commonly fed, along with good quality alfalfa and sudan hay. One hundred rail car units bring in the grain from the grain producing states in the Midwest, dropped off on the company siding and unloaded in our in our high speed unloading facility. We have storage for 40,000 tons of grain in our upright tanks with additional storage of 25,000 tons in our barns. The alfalfa and sudan hay is locally grown.

The mill is a continuous flow operation with each commodity being introduced into the ration by computer controlled devices such as augers, weight belts, etc., to insure that the finished product has the proper mix of ingredients as determined by our nutritionist. The rations are sampled and sent to laboratories for analysis on a regular basis to be sure that they meet the nutritional requirements of the animals. The mill produces up to 1100 tons of feed per day during peak times at the rate of up to 120 tons per hour, depending on the particular ration being produced. In an average year, approximately 300,000 tons of finished feed will be processed.

A fleet of 8 trucks, each equipped with a laptop computer, feed each pen 2 times a day. The laptop enables any truck to feed any pen. Feed is distributed by ration with two feed callers directing the amount of feed to be delivered to each pen daily. One feed caller will follow the top ration trucks while the other will follow the lower ration. The caller will base his decision upon the reaction of the cattle to the first feeding of the day. Teams of cowboys on horseback and on foot check each pen daily. Cattle that develop any kind of problem are taken from their home pens to a hospital area where another team of employees working under supervision of a veterinarian, administer treatments and medicines as required.

As the cattle reach marketable weights, they are sorted and offered for sale to buyers from packinghouses. Most are sold on a grid basis at the feed yard while others are sold based upon grade. Brawley Beef, located in Brawley, California, slaughters the majority of the cattle we produce here. The cattle are transported by truck with the average load between 36 and 44 head. In an average year, in excess of 130,000,000 pounds of beef (live weight) will leave here for market. On a retail weight basis and based on the average annual per capita consumption, this yard would provide the beef requirements of a city of almost 900,000 people.

Each animal produces about 1 ton of organic fertilizer. This fertilizer is in great demand by the agricultural operations in the area and is utilized to grow more of the crops that in turn will come back to the feed yard to be turned back into feed. This process helps us to be environmentally safe as well as an efficient operation. In addition, dust is controlled through effective sprinklers in each pen and water trucks for the vehicular activity that takes place in the daily operations.

As each lot of cattle is shipped out, the results of their performance are captured in a database. This historical data, when combined with current market data for the feed cattle and commodities, is utilized in various management ways.

Updated 1/5/05
January: Due to the numerous procedures done to each palm during the growing season palms are dethorned in January each year. Thorns can grow up to 4-5 inches long. This helps protect workers from injury.

February: The male date palms spathe opens exposing the flower containing the pollen. These flowers are gathered and dried into a fine powder. Each male palm has enough pollen to pollinate 50 fruit bearing female palms.

March: Once the spathe opens exposing the flowers on the female date palm, the pollination process begins. A “puffer” type syringe is used to puff pollen onto the flower buds as soon as possible after they crack open.

April: Thinning begins. Each fruit arm contains strands of young date buds. The number of strands on each fruit arm, are reduced to aid the size of the dates, prevent bruising and increase production. Once the flower bud grows to the size of a pea, the date buds are reduced to about 1 ½ inches apart on the strand. Women are best to use for this procedure because their hands are smaller.

May: Each mature female palm (10-12 years old) will produce 15-18 fruit arms. As the fruit grows and ripens these fruit arms get very heavy. To prevent the arms from breaking each one is tied to the leaflet above it to give support during the growing process.

June: Each fruit bunch is bagged with a cloth bag. Cloth is used to allow for maximum air flow and quick drying of the dates should it rain. Also as the dates ripen the bags protect the date from birds and insects.

July: The bottom of each bag is tied to prevent the dates from falling to the ground as they ripen.

August to early September: Harvest begins. Date growers will go back to each tree approximately three times to complete the harvesting process. Harvest can take from 6-8 weeks each year.

September thru October: Once the Medjool dates are harvested, they are field sorted for ripeness, dried to 25% moisture level, cleaned, sorted for size and quality and packaged in 15 pound boxes. This packing procedure can take 6-8 weeks each year.

November: Post harvest removal of all fruit arms and general field clean up. A chipper machine is often used to grind up the fruit arms and spreading the chips under the palms, thereby returning the nutrients to the soil.

December: Date Palms will go dormant once the ambient temperature reaches 50-55 degrees. This allows the palm to rest before the next growing season begins.

Flood irrigation is ongoing throughout the year to water Medjool date palms.
Pinal Energy, LLC

Pinal Energy LLC, owned by Arizona Grain Inc., is proud to be the first ethanol production facility to be built in Arizona. The site of the January 2006 groundbreaking for the $62 million plant is located just 20 miles southeast of Phoenix in the city of Maricopa.

The state-of-the-art plant, being constructed by The Industrial Company (TIC), expects to be up and running by 2007. The plant will play an important role in improving Arizona’s air quality, will provide 45 new jobs for the Maricopa area and, most importantly, makes a local source of ethanol available.

Pinal Energy projects an annual ethanol production rate of 50 million gallons from roughly 18 million bushels of corn acquired from both local corn producers as well as from the Midwest. The fuel-grade ethanol can be used for the blending of E85, a clean-burning blend of 85% ethanol and 15% gasoline for use in flex fuel vehicles, it is important to note that fuel-grade ethanol is also utilized as a gasoline fuel additive during the winter months in the metro areas of many states, including Arizona.

Production of ethanol results in two other commercially viable by-products: distiller’s grain and CO2. Distiller’s grain is a feed utilized by dairies and feedlots. The CO2 produced is in the form of both liquid and dry ice.

Arizona’s two metro areas, Phoenix and Tucson, consume roughly 250,000 gallons of ethanol daily. Pinal Energy will use the ethanol market in Arizona, Nevada and California.
Salt River Project

SRP, based in Phoenix, was established in 1903 as the nation's first multipurpose reclamation project authorized under the National Reclamation Act.

Today, SRP is the nation's third-largest public power utility and one of Arizona's largest water suppliers, providing power to customers throughout a 2,900-square-mile service territory in central Arizona.

SRP is two entities: the Salt River Project Agricultural Improvement and Power District, a political subdivision of the state of Arizona; and the Salt River Valley Water Users' Association, a private corporation.

The District provides electricity to about 920,000 retail customers in the greater Phoenix metropolitan area. It operates or participates in 11 major power plants and numerous other generating stations, including thermal, nuclear, natural gas and hydroelectric sources.

The Association delivers nearly 1 million acre-feet of water annually to a service area in central Arizona. An extensive water delivery system is maintained and operated by the Association, including reservoirs, wells, canals and irrigation laterals.

Mission statement
The mission of SRP is to deliver ever-improving contributions to the people we serve through the provision of low cost, reliable water and power, and community programs, to ensure the vitality of the Salt River Valley.
Select Seed of Arizona

Select Seed of Arizona, Inc. is the number one leader in product development representing all breeders and producers of quality vegetable seeds for planting. It was started in 1984 by Carol and Louis Didier. The business is a vegetable seed distribution business serving Arizona, Western New Mexico, Southern California and the border area of Mexico. There are presently 11 employees including 4 additional family members. We serve commercial fresh produce growers and shippers with the newest and best varieties of vegetable seed. Our top selling items include bunching onion, hybrid radish, hybrid broccoli, iceberg lettuce, romaine and leaf lettuce. Our Product Development Department is a leader in the industry, constantly trialing new varieties to provide our customers.
Shamrock Farms

Founded in 1922 by the McClellands, Shamrock Farms is the largest family-owned and-operated dairy in the Southwest. When you tour our working dairy farm, you’ll see firsthand the pride we put into everything we make. Our state-of-the-art processing plant is nearby in Phoenix, so our milk never travels very far from our family’s farm to your family’s table. That makes Shamrock Farms dairy the freshest you can serve. To learn more about our long Arizona history and our farm-fresh dairy products, visit shamrockfarms.net today.

For Teachers:
To make sure the tour meets your needs, we did our homework and consulted with teachers. The result is an interactive, activity-driven tour that does the following:
• Meets and reinforces Arizona education standards while making learning about dairy fun
• Works with your existing curriculum to bring classroom lessons to life
• Includes downloadable lesson plans in math, history, reading comprehension and more

About Our Farm Tour Field Trips
• The tour is given in an open-air tram that takes you around our working dairy farm. Tours last approximately 60 minutes.
• Your students will learn about dairy farming and see 200 cows being milked at once in a modern, theater-like setting.
• Your students will have the opportunity to enjoy Roxie’s Adventure Land by climbing up a 20 ft. milk bottle, sliding down a cottage cheese slide or milking a cow on our simulated milking game.
• Your students will also be visiting Roxie’s Calf Nursery where they will have the opportunity to feed and pet a baby calf.
• Extra time can be added if your want your students to bring a brown bag lunch to enjoy inside the Welcome Center Barn. For an additional fee you may purchase ice cream novelties to enjoy with your lunch.
• Roxie’s Gift Shop offers fun cow spotted items to remind you and your students of your fun day at the farm.

For reservations call (602) 477-2462 from 9 am - 4 pm or fill out our online Request a Reservation form anytime. And teachers, please call our reservation line after submitting your online form in order to confirm all of your school's details. Please have the following information when making a reservation:
• Field trip date (please have three choices ready)
• Contact person
• Contact person's cell phone number (to contact in route if need be)
• School name
• School address
• School phone and extension
• Grade level
• Number of students
• Number of teachers
• Number of chaperones (we request 1 to every 10 students)
• Tour time
• Any special needs for your group (e.g., wheelchair, etc.)
• School admission with ice cream package or school admission only
Cooperative Extension plays a unique role in both urban and rural areas of the state. Extension provides practical information and education to help people make their lives better. Outreach efforts translate relevant University of Arizona research into effective practices people can put to immediate use in their homes and businesses.

Programs are conducted by the University of Arizona College of Agriculture and Life Sciences Cooperative Extension faculty in each county office and by campus-based Extension Specialists. Faculty members – Extension Agents – form partnerships with community groups and with trained volunteers to bring the university to the people.

Cooperative Extension programs address key quality of life issues pertaining to Animals; Environment & Natural Resources; Family, Youth & Community; Marketing, Trade & Economics; Nutrition, Food Safety & Health; and Plants.

Creating a Better Environment for Families and Consumers: Healthy people are better able to contribute to a robust economy. Cooperative Extension programs are designed to strengthen families, promote healthy lifestyles and wise financial decisions and develop community leaders. Programs are offered at community centers, churches, and other venues to reach diverse audiences.

4-H Youth Development: Youth ages 5-19 can be involved in more than 100 educational projects that are offered through 4-H. 4-H uses experiential learn-by-doing projects, meetings, community service and a variety of educational experiences to teach life skills while having fun. 4-H is young people and adults growing together to become informed, educated citizens.

Agriculture and Natural Resources: Extension promotes environmental stewardship through Horticulture, Field Crops, Turfgrass and Invasive Species programs. The Water Sustainability programs create quality interactive learning experiences to promote responsible water stewardship, including conservation.

Cooperative Extension has offices across the state, in counties and on Indian Reservations, that can be accessed through the web site cals.arizona.edu/extension. These offices are located in:

- Apache (St. Johns)
- Cochise (Willcox & Sierra Vista)
- Coconino (Flagstaff)
- Gila (Payson & Globe)
- Graham (Solomon)
- Greenlee (Duncan)
- La Paz (Parker)
- Maricopa (Phoenix)
- Mohave (Kingman)
- Navajo (Holbrook)
- Pima (Tucson & Sahuarita)
- Pinal (Casa Grande)
- Santa Cruz (Nogales)
- Yavapai (Prescott & Cottonwood)
- Yuma (Yuma)
- Colorado River Indian Tribes (Parker)
- Hopi Tribe (Keams Canyon)
- Navajo Nation (Window Rock & Shiprock)
- Hualapai Nation (Peach Springs)
- San Carlos Apache (San Carlos)
Arizona Agriculture goes high tech

Precision farming or precision agriculture is the practice of using remote sensing, soil sampling and information management tools to optimize agriculture production.

Precision farming or precision agriculture is an agricultural concept relying on the existence of in-field variability. It’s about doing the right thing, in the right place, in the right way, at the right time. It uses information technologies, like Global Positioning Systems (GPS), Geographical Information Systems (GIS), satellite and aerial images and remote sensing to target inputs and management practices to variable field conditions. These technologies take into account unique soil/landscape characteristics and pest presence, resulting in higher profits and better environmental protection. Collected information may be used to more precisely evaluate optimum sowing density, estimate fertilizers and other inputs needs, and to more accurately predict crop yields. It seeks to avoid applying inflexible practices to a crop, regardless of local soil/climate conditions, and may help to better assess local situations of disease or lodging.

It is associated not only with sustainable agriculture but with mainstream farmers who are trying to maximize profits by spending money only in areas that need fertilizer. This practice allows the farmer to vary the rate of fertilizer across the field according to the need identified by GPS guided Grid Sampling. Fertilizer that would have been spread in areas that don’t need it can be placed in areas that do, thereby optimizing its use.

Precision farming may be used to improve a field or a farm management from several perspectives:

- agronomical perspective: adjustment of cultural practices to take into account the real needs of the crop (e.g., better fertilization management)
- technical perspective: better time management at the farm level
- environmental perspective: reduction of agricultural impacts (better estimation of crop nitrogen needs implying limitation of nitrogen run-off)
- economical perspective: increase of the output and/or reduction of the input, increase of efficiency (e.g., lower cost of nitrogen fertilization practice)
- Other benefits for the farmer may be to help him set a history of his/her farm practices and results, to help him in his decision making and traceability requirements (as increasingly required in developed countries).

(From Wikipedia)
U of A Maricopa Agriculture Center

As one of the major centers of the Arizona Agricultural Experiment Station, the Maricopa Agricultural Center strives to be at the forefront of disciplinary field investigations, to develop, deliver and service the best appropriate integrated agricultural technologies for all problems faced by Arizona consumers and producers, and to provide assistance to all scientists conducting their research and educational outreach programs. The Center not only provides facilities and support for extension outreach programs, but also provides support and facilities for teaching University classes and Ag-Literacy to all age groups.

The **MAC Farm Ag-Ventures** educational programming includes a combination of videos, educational presenters, hands on learning experiences and trailer rides around certain parts of the 2100 acre farm for a first hand view of what makes a working plant farm work. Our philosophy is for students to learn and to have a fun time learning about the source of our food and fiber.

**Nutrition Ag-Ventures - (September-October, March-May)**
In this “food comes from the farm series”, students learn how many farms it takes to make a pizza. As pizza is the most popular item of choice among today’s youth, students learn about how plants grow and all the work it takes to bring healthy, nutritious food to the table. Classroom activities are provided to help further the Ag-Literacy experience.

**Amazing Corn Festival - (October, November)**
For thousands of years, corn has been a major staple in our diets. We have grown, ground, and gobbled it down! Students participate in a variety of educational activities ranging from harvesting, grinding and tasting corn products to corn art.

**Desert Ag-Ventures - (January, February)**
During the months of January and February, a special series titled 'Desert Ag-Ventures' opens up to let seniors and winter visitors learn about arid land agriculture. Most of the world's agriculture takes place in arid environments, so this is a great opportunity for adults from around our nation and Canada to learn about and experience Arizona's agriculture in a fun way.

**Water & Science Ag-Ventures - (February)**
Junior high school and high students participate in a cooperative effort with U.S. Water Lab research scientists, community supporters and MAC to learn about the science and technologies being applied in agriculture today. In addition to experiencing various rotating workshop presenters, students also get an opportunity to learn about aquaculture in addition to trying their hand as using siphon tubes in the fields.

**Garden Ag-Ventures - (March, April, May)**
Vegetables are an important part of our diet. Elementary students learn about nutrition, growing techniques, effects of weather, insects, & have the chance to harvest vegetables (depending on harvest conditions.)

For program reservations contact Victor Jimenez at (520) 568-2273 or vjimenez@ag.arizona.edu.
Waldrons Farm is a wholesale nursery and custom grower that cultivates desert adapted landscape plants for new developments, urban parks, golf courses, street-scapes and freeway vegetation. They are located in Phoenix near the scenic base of South Mountain. You have seen their landscape vegetation beautifying a variety of outdoor scenes throughout the state. By providing desert adapted landscape plants, Waldrons Farm is assisting homes, businesses, organizations and government agencies comply with the guidelines for low water use vegetation to reduce non-essential water consumption in our desert.
Wellton-Mohawk Irrigation & Drainage District

Wellton-Mohawk Irrigation and Drainage District (District) was created by an act of the Arizona State Legislature on July 23, 1951. It was organized to provide a legal entity which could enter into a contract with the United States to repay the cost of this irrigation and power project, and to operate and maintain the project facilities. Congress authorized the irrigation features on July 23, 1947 as the Wellton-Mohawk Division of the Bureau of Reclamation’s Gila Project. President Truman signed that legislation into law on July 30, 1947.

Construction work started in 1949, and the first water was delivered to fields in 1952. Wellton-Mohawk Irrigation and Drainage District, as a legal entity, assumed operation of the first-completed features of the irrigation works in 1953.

Currently the District is comprised of approximately 58,200 irrigable acres in the valley and 4,550 acres on the mesa, for a total of 62,750 acres irrigated.

In addition to being the water provider for the area, the District is also the electric utility responsible for delivering reliable electric service to the towns, scattered residences and the agricultural community. The power distribution facilities date from 1921 and were taken over by the District upon its legal formation in 1951.

The products produced by the agriculture in the area contribute well over $200,000,000 to the annual economy of the area. The crops grown include iceberg lettuce, romaine lettuce, purple cabbage, green cabbage, baby spinach, baby lettuce, broccoli, cauliflower, cantaloupe, watermelon, alfalfa, wheat, cotton, corn, Sudan grass and Bermuda grass. Many specialty crops are grown for seed such as, artichokes, broccoli, and cauliflower. There are several livestock operations in the area with one of the largest being McElhaney Cattle Company. There are also a couple of dairy operations here. In the winter sheep are brought down from the high country to graze, get sheared and have their lambs.

The Wellton-Mohawk Irrigation and Drainage District is the foundation on which all activity in the area is based. The water brought in by the District has made this area one of the most productive agricultural areas in the State of Arizona and the western United States. So when you are enjoying a cool slice of watermelon, a tasty, healthy salad, a wonderful steak or just a cool glass of milk, remember, that any one of these products may have been produced in the Wellton-Mohawk area for your pleasure.

Wellton-Mohawk Irrigation and Drainage District, 30570 Wellton-Mohawk Drive, Wellton, AZ 85356
www.wellton-mohawk.org
Yuma Fresh Vegetable Association

The Yuma Fresh Vegetable Association (YFVA) is an agricultural trade association dedicated to promoting and protecting the Yuma vegetable industry. Yuma is known as the “Salad Bowl of the US” and our members consist of local producers of some of the country’s most prolific vegetable crops. Did you know that during the winter months, anywhere in the US and parts of Canada, it’s more than likely that the iceberg lettuce in your salad was grown in Yuma. People in the state of Arizona can take pride in the fact that members of our agricultural community are so skillful and innovative in cultivating our arid lands that they supply fresh fruits and vegetables throughout the US as well as to Canada, Australia and countries in Asia and Europe.

YFVA provides a variety of valuable services to our members including legislative support and lobbying efforts, community involvement and social and educational activities. YFVA also provides a weather report service during the winter harvest season. Members receive daily forecasts by email or fax about frost, intensity of ice, high and low temperatures, historical averages and a 10-day outlook for the Yuma Valley, the Gila Valley and Eastern Yuma County.

There is strength in numbers and YFVA recognizes the value in networking with other agricultural associations, agency personnel and legislative staff. YFVA actively pursues coalitions with a variety of other agricultural organizations including Arizona Farm Bureau Federation, Western Growers Association, Arizona Cotton Growers Association, Arizona Nursery Association, Arizona Crop Protection Association, Arizona Cattlemen’s Association, Arizona Agricultural Aviation Association, Agri-Business Council of Arizona, Maricopa County Farm Bureau, Yuma County Farm Bureau and Border Trade Alliance.

“Through a unified voice, the mission of YFVA is to promote and protect the Yuma vegetable industry.”
# Summer Agricultural Institute
## Suggested Reading List

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<td>Heartland</td>
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Arizona teachers become the students at Summer Agricultural Institute

BY JOYCE LOBECK, SUN STAFF WRITER
July 8, 2007 - 12:02AM

Twenty teachers from around the state recently got a crash course in agriculture in Yuma County. They were participants in this year's Summer Agricultural Institute, held annually to educate the state's educators about the scope and value of agriculture in hopes they will take that awareness back to the classroom, said Monica Pastor, a University of Arizona Cooperative Extension agent in Maricopa County and coordinator for the program.

The goal is expose K-12 teachers to the diversity of agriculture in the state, provide motivation and resources for them to incorporate it into their lesson plans and demonstrate the career possibilities for their students, Pastor said.

"Many start with no background in agriculture," she said. "But we all eat, wear clothes, have a roof over our heads. We need to keep agriculture in this country."

Hundreds of teachers have participated since the program began 17 years ago. In past years, the five-day institute has visited various areas of the state. This year was Yuma County's turn.

"We've been avoiding Yuma because of the heat," Pastor said, "but there is so much agriculture here. It is the top agriculture area for the state."

The trip proved to be eye-opening.

"We had never done seed distribution," she said. "We had never seen black-eyed peas, never seen dates processed." Pastor said the group also heard about the need for more students to go into science, whether in farming or agriculture-related careers such as research and technology development.

Among the participants were two teachers from eastern Yuma County. Even they were amazed at the scope of agriculture here, and the experience has them considering the many ways they can use what they learned and the resources they were given in their classrooms.

"Even with my background, I found out new things," said Judy Newman, a longtime Roll-area resident since the eighth grade whose family has been involved in agriculture. She was particularly impressed by "all the new high tech stuff. I'm very aware of laser leveling ... and knew about GPS (Global Positioning System), but I didn't realize how much it is used in farming."
Newman also said she was familiar with produce being grown in the fields, but a tour of the Dole salad processing plant gave her a new awareness and appreciation for Yuma County's fresh vegetable production. That's definitely an experience she wants to share with her students, many of whose parents labor in the fields, planting and harvesting the crops.

A visit to the new ethanol plant in Pinal County and presentation on the planned plant near Tacna brought the emerging industry home to Newman. "I definitely will bring some of what I learned into my classroom," said Newman, an English teacher at Antelope High School. "We were given a lot of resources. Now I have to figure out how to put them to use. I'm on the lookout for lesson and project ideas."

She's already planning a couple of field trips "to help my students become more aware of agriculture beyond the fields." She also wants to bring in people to talk about high tech in agriculture. "And it doesn't hurt to do some reading," she said. "Maybe it would be topics for research papers."

The trip also gave Newman a chance to catch up on a couple of people she had previously known. One presenter, Marcos Moore, who works for the University of Arizona, was one of her fifth-grade students. "It was nice to see him go on in the farming world," Newman said.

Each teacher spent a night with a host farming family. As it turned out, Newman's host, Mark Spencer, had been in the same 4-H club with her while they grew up in Mohawk Valley. "So we did a lot of reminiscing."

A highlight of the trip for Newman was listening to her fellow participants talk about how much the experience had changed their perception of agriculture and the people who labor to provide this nation's food. "One said she had never met so many intelligent people," Newman said. "They gained an awareness of what agriculture is about. It's not just the guy in overalls."

Sarah Rodriguez, who teaches seventh- and eighth-grade science at Wellton Elementary School, said the trip "re-energized me" and will be a big help in teaching science. "It was an eye-opening experience in how we can use our surrounding area in our teaching," she said. "Everything we observed was tied in with our curriculum and (teaching) standards. There are a lot of good ideas out there, but it's not always clear how we can tie it in. They gave us a lot of resources and even lesson plans." She also appreciates gaining a network with other teachers to share ideas.

Even though she was born and raised in Wellton, Rodriguez said she "learned so much about agriculture" and the importance of farming there to the region and nation. As a result, she not only will be able to share with her students the many opportunities in the industry, but also to help them gain "new pride in what their fathers do. Without them, we wouldn't have what we have today."

Both teachers would recommend the trip to others. "It was an inspiring week and educational," Newman said.

Rodriguez expressed appreciation to her administrator for recommending her for the trip and to Wellton-Mohawk Irrigation and Drainage District for sponsoring her.

For more information, contact Monica Pastor, coordinator, at 1-602-470-8086 or mpastor@ag.arizona.edu.

Joyce Lobeck can be reached at jlobeck@yumasun.com or 539-6853.
Maricopa Agricultural Center hosts Arizona educators

Ag Institute puts teachers in field

By GLORIA SAVKO, Staff Writer

June 28, 2007

More than 20 schoolteachers and administrators from throughout Arizona recently visited Maricopa to expand their knowledge of agriculture. All were participants in the annual Summer Ag Institute, a program presented by the University of Arizona Cooperative Extension.

Monica Pastor, associate agent for the extension in Maricopa County, said the program arose 17 years ago from a desire to bring the subject of agriculture into the classroom and to be able to do so without time restrictions and staff limitations.

"I may have gotten into a classroom one time in a school year for maybe half an hour," Pastor said. "We decided if we could train the teachers that we could have them in the classroom 180 days a year, all day long, if they wanted to incorporate agriculture into their lessons."

This year's five-day institute was held June 18-22, and encompassed hands-on activities and classes not only in Maricopa, but also in Phoenix, Yuma, Wellton and Stanfield.

On Thursday, June 21, the group visited the Maricopa Agricultural Center (MAC), a 2,100-acre educational research facility on Smith-Enke Road.

Outdoor activities included using a net to "sweep" an alfalfa field for insects, placing the insects in bags and then freezing them. Later, the group identified what kind of insects they had gathered and cataloged them as either "good" or "bad" bugs.

"(Sweeping) gives them an appreciation for how many insects they found because they go out in the field and ... they don't really see much. For every insect they see, there are probably 500 to 1,000 more they don't see," said Ed Minch, task leader and an Arizona Department of Agriculture retiree.
Participants also learned how to operate irrigation siphoning tubes and listened to presentations about cotton, plant science, the Gila River Community Project and Project WET (Water Education for Teachers).

The week's curriculum had a positive impact on the teachers. "The broad spectrum of farming and agriculture has really opened my eyes to a lot of things," said Lee Scott, a seventh- and eighth-grade teacher at Gilbert Junior High School. "We stayed with a farm family a couple of nights ago, and that was really neat because I would never have the time to just chat and get to know them. I was surprised at how much they are like me. It's been a really fun experience."

Anne Howe teaches fourth grade at Sacaton Elementary School in the Gila River Indian Community, which is home to the 16,000-acre Gila River Farms. It produces cotton, alfalfa and various food crops. "We've been asked by the tribe to work with the elementary school to get the students more interested in agriculture," she said. "I'm hoping to plant gardens and to do some kind of in-classroom agricultural activities, so that when the students get to middle school, where they have more agricultural options, they will participate in it."

Pam Petterborg, a seventh- and eighth-grade teacher at Gilbert Junior High School, said, "I'm all about food in the classroom, so I like to enhance the perspective of how food goes from the seed to the plate and all that's involved in the agricultural industry to produce it."

Mike Cox, principal of Alpine Elementary School, said he looks forward to sharing what he's learned with his staff. "It's going to help, especially with the AIMS science test coming up," he said.

Darryn Elliott, a second-grade teacher at Buckeye Elementary School, said the institute was "very beneficial."

Admission to the program is by application. The process requires a detailed account of the reasons for applying and an explanation as to what the applicant plans to do with what is learned. "We want to make sure we get good-quality teachers," Pastor said. "We accepted 22 teachers this year, and we have funding for up to 30. They pay an $85 registration fee, but it actually costs us $450 per person to present this program."

Funding is provided by the Arizona Foundation for Agricultural Literacy. Victor Jimenez, project leader for the Ag-Literacy program at MAC, said the Summer Ag Institute is one of several programs available.

"We reach all ages," he said, "from elementary school to high school through to the winter visitors and senior citizens who come from around the country."

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New Ethanol Plants to Be Fueled by Cow Manure

Scott Norris
for National Geographic News

August 18, 2006

While a cheap alternative to gasoline may be pie in the sky, ethanol producers in cattle country will soon be reaping the energy rewards of pies on the ground. Ethanol production plants fueled by cow manure are under construction in Hereford, Texas, and Mead, Nebraska. The new facilities may have a big impact on the growing debate over the value of ethanol—a liquid fuel distilled from food starches such as corn—as a supplement or alternative to gasoline. Critics have long argued that traditional ethanol production consumes nearly as much fossil fuel energy as it saves, once all the energy costs of growing and processing corn are factored in.

But in Hereford, a cattle town in the Texas Panhandle (Texas map), Dallas-based Panda Ethanol is building a production facility driven by the area's most abundant and least appreciated resource: manure. The new plant is expected to extract methane from 1 billion pounds (453,000 metric tons) of manure—the product of about 500,000 cows—to generate 100 million gallons (378 million liters) of ethanol, plus ash by-product, each year.

Methane derived from the manure will be burned to generate the steam necessary for processing corn into ethanol. "We thought it made a lot of sense to use a renewable fuel to create a renewable fuel," said Panda CEO Todd Carter. "There are literally mountains of manure in the Hereford area."

Cows Crack Corn

By mining those mountains for energy, the Panda facility is expected to save the equivalent of a thousand barrels of oil a day that would otherwise be required to fuel ethanol production. The manure will come free of charge, courtesy of local feedlot operators for whom waste disposal is a difficult and costly necessity. The Hereford plant will begin operating in the second half of 2007. Panda has plans to build similar facilities in Haskell County, Kansas, and Yuma, Colorado. In Mead, Nebraska, a small town of about 600 people 30 miles west of Omaha (Nebraska map), E3 Biofuels is taking the idea of cow power a step further.

Their new facility, set to begin operation in October, will integrate cattle and ethanol production in a highly efficient "closed loop" system. The E3 operation is smaller than the Panda facilities. Built around an existing feedlot, 30,000 head of cattle will provide the energy needed to produce 24 million gallons (91 million liters) of ethanol a year.

Cattle will be kept in long, covered enclosures with slotted floors, and manure falling through will be pumped directly into the processing facility. E3 CEO Dennis Langley says collecting the manure immediately eliminates the common problem of water pollution caused by manure left standing in feedlots or spread across farmland. The process also prevents the atmospheric release of methane, a powerful greenhouse gas, from manure left to slowly decompose. While Panda relies on an incineration process, E3's manure will be broken down inside an oxygen-free "digester," yielding methane fuel and an ammonia by-product that can be sold as fertilizer.

The energy generated will be used to convert locally grown corn into ethanol and wet distillers' grain, a protein-rich by-product that is fed back to the cattle on site. Langley says the three-part combination of feedlot, methane generator, and fuel processor will allow the company to make ethanol at less cost and with far better energy return than traditional methods. "The normal process is, you put one BTU [a unit of energy] in and get two BTU out," Langley said. "What we do is radical. We put one BTU in and get 46.7 BTU out." What that means, he continues, is that "producing 1 gallon [3.8 liters] of our ethanol is like producing 23 gallons [87 liters] of traditional ethanol or 15 gallons [57 liters] of gasoline."
Fueling Controversy
With gas prices high and the future of world oil production uncertain, interest in alternative fuels is surging. But ethanol, a fuel now widely used in Brazil, has been the subject of an often polarized debate in the U.S. The controversy has been playing out recently both in science journals and on energy blog sites such as The Oil Drum.

Proponents like Silicon Valley venture capitalist Vinod Khosla argue that ethanol can replace gasoline, while opponents counter that not enough agricultural land exists to meet more than a fraction of the country's energy needs. Cornell University ecologist David Pimentel is an ethanol skeptic and co-author of a study finding that corn ethanol typically costs more energy to produce than it provides. Pimentel says manure-fueled production does represent an improvement over traditional methods. "It probably would make [the net energy balance] slightly positive," Pimentel said, though he remains skeptical about the efficiency claims of E3 Biofuels. "If you omit some of the inputs, you can make it look good. I'd like to see all the data," he added. But another outspoken ethanol critic, oil industry analyst and blogger Robert Rapier, has endorsed the E3 Biofuels approach, calling it "responsible ethanol." The 2005 energy bill approved last summer by U.S. President George W. Bush included a controversial mandate for increased ethanol production, and many new facilities are now being built.

Once the Mead facility is up and running, E3's Langley hopes to see small-scale, integrated cattle-ethanol operations spread across the rural Midwest, bringing both environmental and economic benefits. "We want to build three to five new plants in 2007 and every year thereafter," Langley said.

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History of the Arizona Cattle Industry

The cattle industry has been a vital part of Arizona for over 300 years. In the mid-1700s Father Kino introduced cattle into our state. For almost a century cattle flourished in the arid climate, providing early American immigrants, Indians and Spaniards with beef. The marauding Apache Indians were pacified with gifts and rations. However, after the commencement of hostilities between the U.S. and Mexico in 1846, Spanish support ceased and the ensuing Indian uprising drove miners and ranchers southward, away from Apache land.

As haciendas were abandoned, great numbers of beef animals spread throughout the hills and canyons to roam in a truly wild state. Military brigades that passed through the area commented on the huge herds of cattle and horses that grazed the Arizona ranges. They were surprised that although the gramma grass on the hills was straw colored and dead looking, the thousands of wild cattle and horses were fat.

The discovery of gold in California in 1849 created a great beef market. Still, the local industry did not revive until miners came to reopen old Spanish workings and prospect new fields. The first actual rancher is said to be William S. Oury. He began with 100 Illinois heifers and four bulls in 1858.

After the Civil War there was a tremendous stimulus to the livestock business. Unattended herds in Texas had increased while the range had declined, creating a desperate rush to relieve the overburdened grazing lands. Hundreds of discharged Texas veterans poured into Arizona. They entered Arizona four different ways: the San Pedro River, Ft. Bowie, the San Francisco River and Beale’s Road (Highway 66 and the Santa Fe Railroad route.)

As the number of cattle in Arizona grew, so did competition. The ranching industry adopted more business like methods including better blood in the herds and planned use of forage. Colonel H.C. Hooker is credited with bringing a large number of Hereford cattle to Arizona in 1884. However, Colin Cameron, established near Patagonia, ran a small group of the English breed in 1883. That winter Arizona experienced severe weather hardships, but the cattle not only survived, they were in good condition in the spring. Unrivaled rustling ability, early maturing qualities and prolific reproduction soon placed the Hereford breed in a favored position on the Arizona range.

The last years of the decade ending in 1890 were truly the heyday of Arizona’s range cattle industry. Many an indolent man with money to invest must have been attracted by the imagery that claimed: “Here the climate is almost perpetual spring and even in the driest season the feed never fails and the owner can sit under the shade of his comfortable hacienda and see his herds thrive and increase in winter and summer.”

In 1890 practically every acre of range was being occupied. Unofficial estimates by experienced ranchers showed 1,500,000 cattle located on the Arizona range. However, over-
stocked lands and three years of drought beginning in 1891 produced catastrophic conditions for the cattle industry. These difficulties, harsh as they were, conferred certain benefits upon Arizona ranchers. First, the realization was brought home with emphasis that stock raising had become an involved procedure an adventure had become a business. Second, planned use of range and water was necessary. Having learned these lessons, the industry turned to more scientific husbandry and subsequently recouped its losses.

Today, Arizona ranchers continue to practice sound range ecology practices. Through improvements to the land such as adding watering sites and rotating pastures, the Western rangelands are in the best condition they’ve been in for more than a century. Almost three hundred and fifty years after their introduction into our state, cattle is Arizona’s highest valued cash commodity crop.

**Arizona Cattle Industry**

Source: 2006 Arizona Agricultural Statistics

Arizona’s inventory of cattle and calves on January 1, 2007 was estimated at 940,000 head, same as the previous year. The 2006 calf crop of 280,000 was down 5,000 head from 2005. The value of cattle and calves on January 1 was $949 million, down 7 percent.

Monthly all beef cattle prices varied by $19.10 per hundredweight during 2006, from a low of $75.30 in November to a high of $94.90 in July. The marketing year average price for beef cattle decreased $5.10 per hundredweight from a year ago to $88.30. The annual average steer and heifer price decreased $1.00 to $104.00 per hundredweight and the annual average calf price decreased $1.00 to $125.00 per hundredweight. The annual average price for cows decreased $7.10 per hundredweight to $45.50.

Cattle and calf marketings were up less than 1 percent to 812 million pounds and the gross income from these marketings decreased 5 percent to $740 million.

Arizona’s feedlot operators marketed 337,000 head during 2006. Feedlot inventories ranged from 334,000 head on January 1 to 351,000 on March 1 and April 1.

Arizona’s 14 livestock slaughter plants produced 386 million pounds of red meat during 2006, up 7 percent from the 2005 slaughter.

As of 2006, approximately 48 percent of Arizona’s total area of 72,725,000 acres is Federal and State public trust land administered by the United States Department of Interior (USDI) Bureau of Land Management, the United States Department of Agriculture (USDA) Forest Service, and the Arizona State Land Department. A majority of these public lands are leased for livestock grazing.
The wolf is back. Is that good news?
BARBRA MARKS
Guest Writer

Ten years ago, 11 pioneer Mexican gray wolves were released to run free in the forests of eastern Arizona. They immediately had two strikes against them: They didn’t know how to hunt for food and the rural residents near the release areas opposed their release. How has this decade-long experiment gone?

Aaaahhhoooooooo……the wolf howls as it stands over its recent kill of a calf. A leaf falls in the forest as another season changes from fall to winter and a ranch family stands on its porch with a telemetry antenna to determine if their dogs are barking at a wolf which is approaching their home. Two days later they take one of their prized animals – an 8 year old trained dog – to the veterinarian to stitch up a wound from an encounter with a wolf. This is real nature, an actual occurrence and what is happening under the current wolf recovery program today. So you can understand why ranching families in North Eastern Arizona are concerned about the direction of the Mexican Grey Wolf Recovery Program.

The Wolf recovery Program is failing. It is not failing because ranch families are protecting their homes, property and animals. It is failing because the reintroduction of a “top-of-the-chain” predator, with mixed canine bloodlines (the current population of wolves has a 2-3% mixture of coyote ancestry) has become a political pawn for those who want to vilify or remove ranching families from the area and a government program which swells budgets and provides salaries for more government employees to roam in the forest and chase wolves. Yes...chase the wolves.

The Recovery Program is failing because these wolves are conditioned to being fed and sustained in an environment where vehicles and people are the interactive sounds they affiliate with a meal. It is failing because they are being hounded by government programs to “study, collar, catch, move, dispatch” or otherwise regularly follow these animals. Additionally, it is failing because this process also causes ranch families to regularly follow their animals and attempt to know where the wolves are predating in order to manage their animals “away” from the areas where these “top-of-the-chain” predators are feeding. Even ranch families understand that our animals would not do very well in an environment where we were constantly studying, collaring and chasing them – rather than letting their genetic and nature trained foraging experiences lead them to the areas where they prosper and survive. The current recovery program causes everyone involved to act like the keystone cops.

Ranching families do not harass, kill or harm wolves and not a single ranch family has been charged, indicted, or convicted of harassing or killing any wolves. They are not the problem – they are immersed in the problem. They are not partners in the reintroduction effort – they are victims of it. This needs to change and the change needed is to make these ranching families an integral part of the program rather than bystanders and victims. The Program needs to recognize that their eyes and ears on the ground are valuable, with their voices and experience as tools to be utilized.

We don’t know for sure whether wolves can co-exist in Arizona today. However, we believe that the $18 million of tax payer dollars spent on the program – would be better spent if it was util-
ized to recognize the values provided by these ranch families and make them a partner by providing them resources in exchange for their expertise and information about the area and the animals who roam in it.

They can help. They just haven’t been allowed to partner nor have they been approached with resources to create the necessary partnership. A compensation program for animals killed by wolves is appreciated but ineffective in creating a partnership.

We don’t hate wolves – however, we are leery of strangers and inexperienced government personnel who drive into our driveways and tell us they are here to help us.

Barbra Marks is a rancher in the eastern Arizona community of Blue, which is in the wolf recovery area. She also is chair of the Wildlife Committee of the Arizona Cattlemen’s Association.
It takes a group of dedicated individuals to pull together all the pieces and put on a program such as this. The Summer Agricultural Institute would like to thank the 2008 SAI Planning Committee for all their efforts to organize and coordinate the entire week of activities.

Gerry Parker - Committee Chair  
University of Arizona Cooperative Extension, Maricopa County

Committee Members
Colleen Bergum  Dairy Council of Arizona  
Brett Cameron  Arizona Department of Agriculture  
Farm Family Hosts  Yuma County Farm Bureau  
Dennis Fiscus  Arizona Department of Education  
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Special Thanks…
The 2008 Summer Agricultural Institute Planning Committee extends a very special THANK YOU! to Monica Pastor for your foresight, guidance and all your hard work through the years to make this program what it is today.

HAVE A GREAT SUMMER!