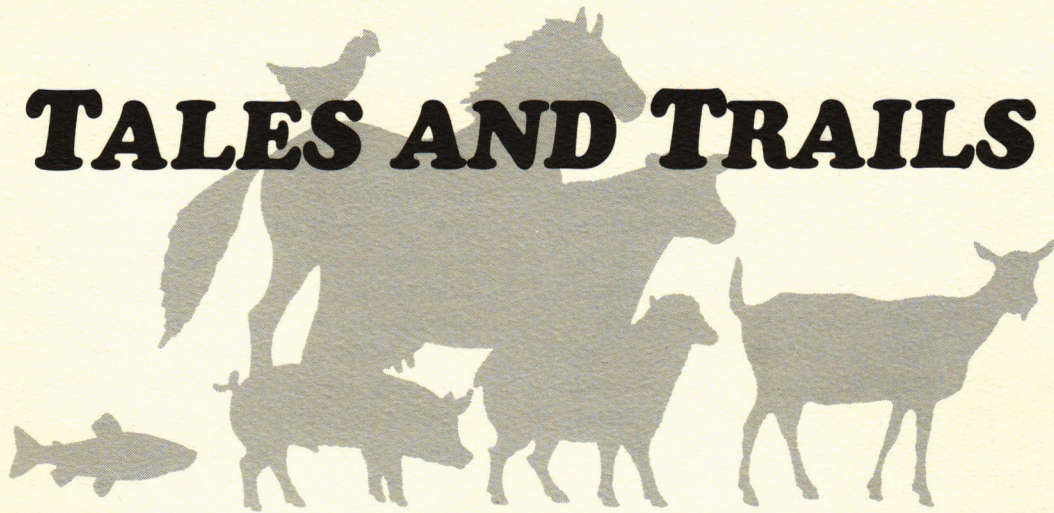


# TALES AND TRAILS



DEPARTMENT OF ANIMAL SCIENCE UNIVERSITY OF CALIFORNIA, DAVIS, CA 95616-8521 (916) 752-1250

## THE DAIRY: Improvements Include New Milking Parlor

In the face of adverse budgetary constraints, the Animal Science Department is striving to upgrade its dairy operation to meet teaching and research needs more effectively, while maintaining its success commercially as a Grade A dairy. Five hundred gallons of milk are produced daily for sale to the Crystal Creamery in Sacramento, resulting in an annual income that supports many of the expenses of the facility. With the dairy barn now over thirty years old, upgrading its milking parlor is much overdue.

With funding largely from the California Milk Advisory Board, the new parlor will cut milking time by 40%, increase revenues, and provide an opportunity to enlarge the milking herd from 72 to 100 milking cows. The improvements will allow for "cleaning in place." Since the equipment will no longer require breaking down and moving to another room for sanitation, there will be considerable labor savings. The new equipment will allow for computer identification of cows and computer recording of daily milk yield for each cow.

Cows will be restrained by individual gates and situated head to tail on an elevated platform, giving workers better access to the cows with less chance of worker injury. The new design will result in faster movement of the herd since they can be individually exited after milking, instead of holding each back until all twelve in the string are milked. Students will be better able to view the milking procedures with the single-sided design.



*The old milking parlor built in 1958 will soon be replaced with up-to-date equipment provided by the California Milk Advisory Board.*

The facility built in 1958 near LaRue and Hutchison Drive was at that time a state-of-the-art barn, having replaced the antiquated dairy barn built in 1910 (now "the Silo" student dining hall). The campus dairy facility continues to be the only dairy in the University of California system.

The Animal Science dairy demonstrates a working dairy operation to students at a convenient campus location. Teaching ranges from introductory Animal Science courses to classes in judging, animal behavior, production and management, and upper division courses in production, lactation, nutrition, and reproduction. The department also sponsors a number of dairy student internship programs.

(continued on page 2, column 1)

The UC departments of Food Science and Technology, Animal Physiology and the School of Veterinary Medicine also use the facility for their classes.

The dairy herd, although of average size by national standards, is quite small compared to most California commercial operations. It is hoped that the modernized, more efficient parlor will lead to not only a greater monetary return on the milking enterprise, but an increased herd size to support expanded research. The dairy herd has been used extensively for research studies involving a variety of topics such as fiber digestibility, the identification of milk proteins, a project with identical twin heifers to measure genetic variance in hormones, and studies of blood clotting, and trichomoniasis (parasites). Other studies include by-product utilization, measurement and identification of milk proteins associated with cheese production, bST (bovine somatotropin), rumen protection of fat to alter milk fat content, and an evaluation of drug residue in milk after intramammary treatment for mastitis. Studies are too numerous to mention all.

Long range research goals aim for joint participation with other departments in sustainable agriculture projects at the University's newly acquired Russell Ranch in Davis. Here, research and teaching will be directed to learning more about the relationships of animals to the environment so that, for example, plant nutrients in animal manures can be utilized efficiently and potential contamination of water supplies can be avoided. With the present State fiscal crisis, however, development in important areas such as these may be on hold.

### ***New Dairy Manager Anxious for Big Steps Ahead***

Suited up in his coveralls, Brandt Kreuzer exhibits the gusto needed to lead in a new direction. His staff listen carefully to his instructions and respond with questions and answers before heading out to perform their duties at the dairy.

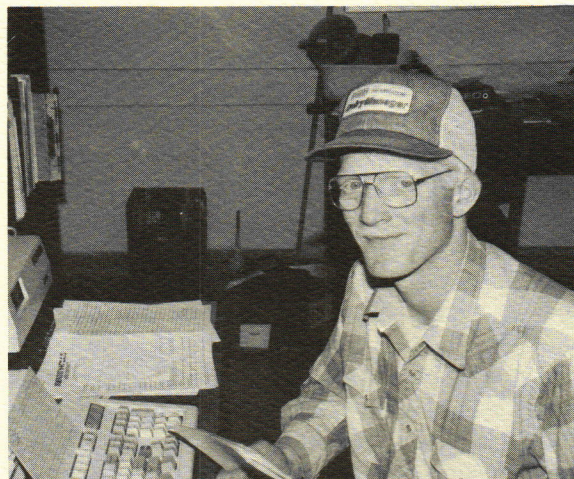
His appointment in January marks the beginning of a reorganization of the Animal Science dairy cattle and dairy goat facilities. Plans include expanding the student internship

program and increasing the research potential and income of the commercial milk operation with a new milking parlor. In his words, he hopes to "bridge the gap between research and commercial production by operating a quality research herd while producing revenue."

The duties of the dairy manager were intensified for better control of the total dairy operation. Kreuzer is responsible for the supervision of the dairy staff, will assist in teaching eight Animal Science classes and handles the more than quarter of a million dollar annual expense budget.

Brandt Kreuzer started a dairy in a small college in Virginia while serving as an agricultural instructor. He is a graduate of UC Davis in Ag Education and received a Master's from Cornell in Ag Education, with an emphasis in dairy science. As a young boy, he became interested in cattle while visiting his grandfather's ranch of 400 Angus cows in Petaluma.

After only five months on the job, Brandt is already involved in the installation of a computer interface which will build onto a database of DHIA (Dairy Herd Improvement Association) records. The comprehensive dairy management software was donated by Agritech who sent out a programmer to help install the program. The computer system will instantly provide Brandt with individual data on herd health, daily milk weights and milk production. He can graph milk production, for example, and determine when to dry off individual cows. He is involved in the design of the new milking parlor and spends many hours teaching student interns about the dairy operation.



***Dairy Manager Brandt Kreuzer reviews data on new dairy management computer program.***

## New Dairy Student Internship Program

Jennifer Figueroa is the first student herd manager in the dairy internship program established this 1990-91 academic year. Jennifer finds her dairy job "appealing from an agri-business standpoint," and certainly quite different from her Los Angeles upbringing. "The internship is longer than others--one year--long enough that you have something to show for the effort."

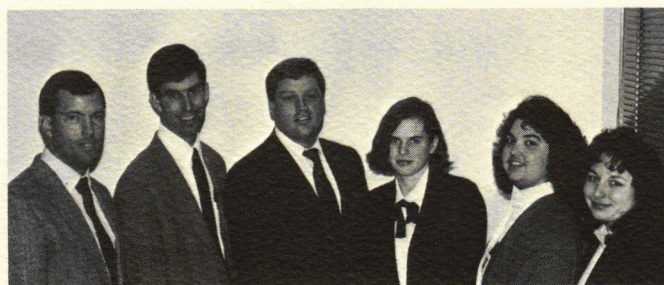
According to her supervisor, dairy manager Brandt Kreuzcher, Jennifer is "not from an ag-production background, but is diligent and hardworking and has developed a sense of a production dairy." Brandt's goal is to teach the students management practices and minimize time spent on day-to-day routine tasks. He believes students must understand production before undertaking research in the laboratories.

Interns work 20 hours per week for 10 hours of paid labor and 3 units of credit in the Animal Science 192 internship course. Jennifer's managerial duties include milking, preparing animals for classes, maintaining dairy records, and teaching and supervising other student interns who assist in milking, heat-checking and routine care of the dairy herd. Jennifer has already become a critical part of the dairy's daily milking operation.

Four students actually live at the Dairy Barn and work there in exchange for rent. These students are essential to the calf rearing and breeding programs. Graduate student Kim Rager shares her loft-style bedroom with Julie Guttman. Julie, finding her experiences so rewarding, plans to live at the dairy next year. Marie Kelley and Libby Ring live in another bedroom. The barn has a bathroom with a shower, living room space, but no kitchen. "We eat out a lot," they say. Typically, many more hours are worked than is necessary for the rent, but these students are willing to do a lot on their own to help out.

## DEPARTMENT JUDGING TEAM WINS SOME, LOSES SOME

"It's not just a matter of loading up the van and driving down the road to the next competition," according to Dana Van Liew, coach of the UC Davis Livestock Judging Team. Van Liew estimates the team accumulates



*UC Davis Livestock Judging Team, 1990-91.*

over 2000 miles during weekends and vacations visiting various producers practicing their skills. He is also quick to point out that "When you consider the time spent practicing presentation and organizational skills you quickly realize the student must make a sizeable time commitment."

The Team enjoyed mixed success during the fall quarter. Chris Robinson, Rebecca Tracy and Chris Calderwood placed fourth overall at the Los Angeles County Fair. At the Grand National Show held at the Cow Palace in San Francisco, Rebecca Tracy placed fourth out of 46 contestants. The team placed third overall at Portland's Pacific International in October, and Chris Robinson placed second in beef cattle.

The Winter Quarter started a new judging season and the introduction of a new team. Team members are Jennifer Boutilier, Lorinda Fallini, Erin Bryne, Shane MacKenzie, Gary Darling and Bryan Appleby. The team enjoyed success at the Arizona National Show, placing third overall and second in reasons.

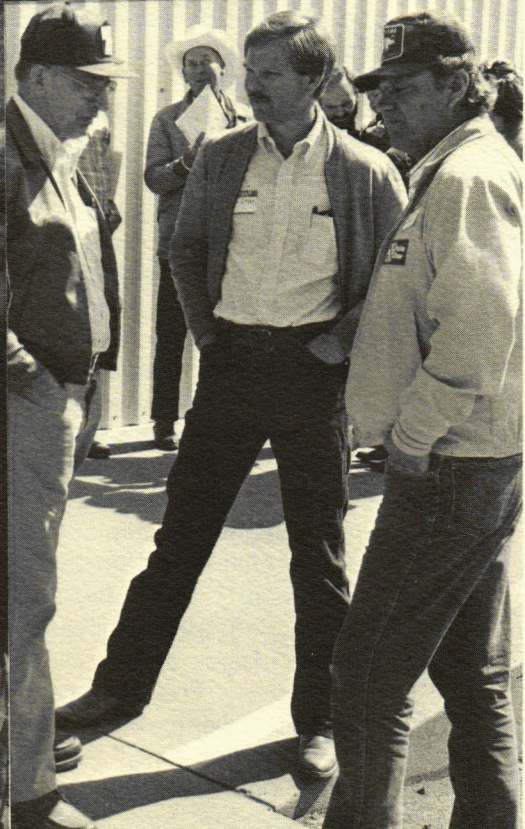
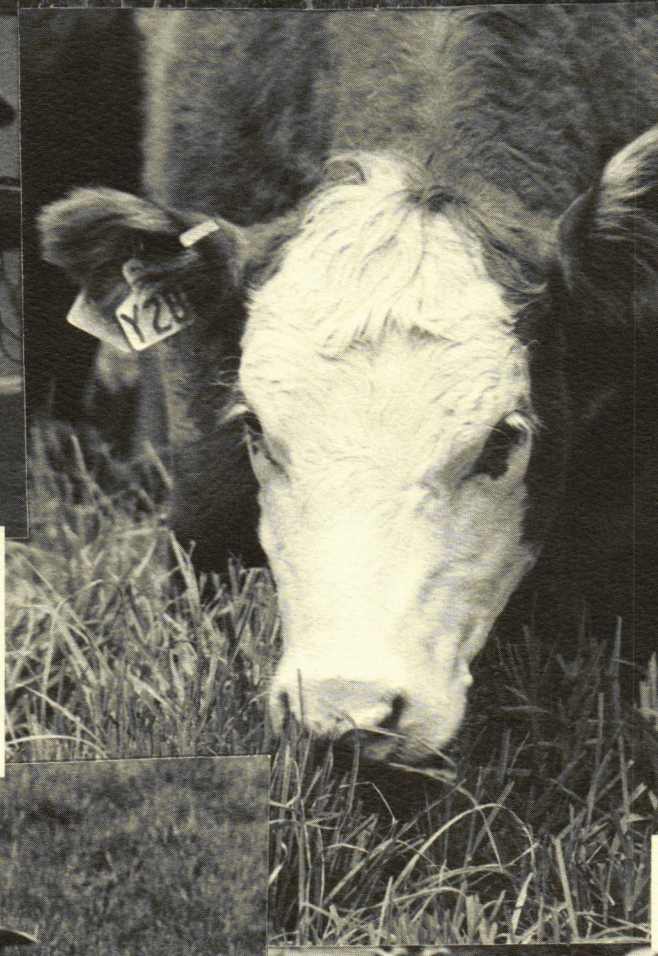
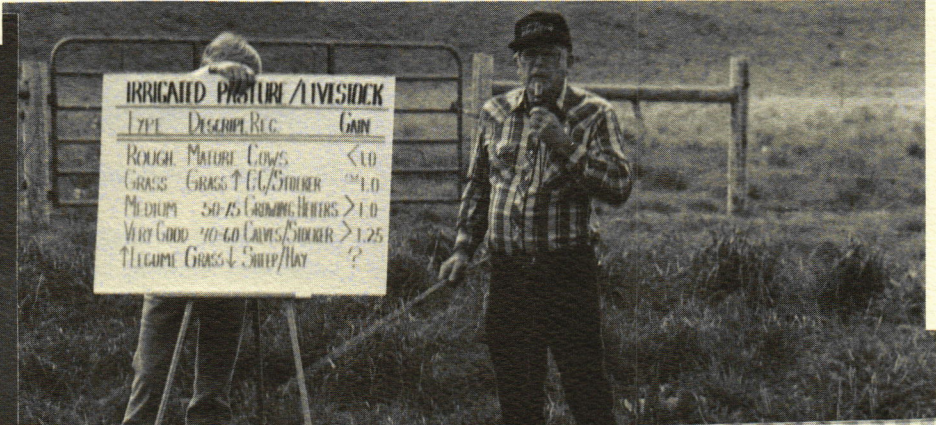
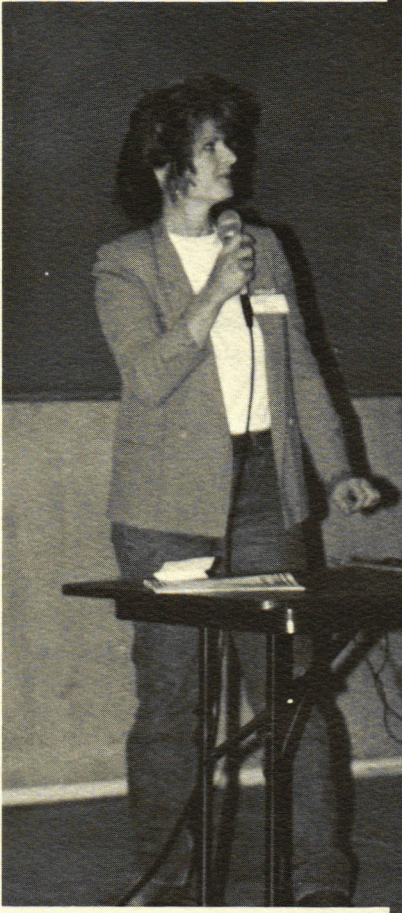
The show in Denver was a disappointment with a twenty-first place finish. However, Van Liew felt "The experience was invaluable. We competed against teams from Texas, New Mexico, Utah, Colorado and Wyoming. It was humbling, but I know we came away with a lot of lessons."

Asked whether livestock judging may be an anachronism in modern livestock production, Van Liew turns evangelical. While he feels type may not have the importance it once did, the benefit to the student "...goes far beyond simply trying to identify superior animals....The students must be able to organize their thoughts in a pressure situation, and communicate them with self confidence in a clear, concise fashion. There is no doubt in my mind that this experience develops the students' communication and organizational skills."

**BEEF AND RANGE FIELD DAY, APRIL 17, 1991**  
**Sierra Foothill Range Field Station, Browns Valley, California**

**LEFT:**  
**Specialist**  
**J. (Roy) Hull**

**LOWER:**  
**Grover**  
**Roberts,**  
**Calif. Farm**  
**Bureau (L)**  
**Specialist**  
**Jim Oltjen (C)**



**TOP: Cindy Daley,**  
**Staff Research Assoc.**

**BOTTOM: Bob Laben,**  
**Professor Emeritus**

**LOWER: Cindy Daley (C)**  
**Professor Tom Adams (R)**



## **SIERRA FOOTHILL FIELD STATION HOSTS SUCCESSFUL FIELD DAY**

Management strategies other than selling the herd or finding additional pasture should be considered in response to long term drought according to Dr. Jim Oltjen, the Department's Animal Management Systems Specialist. Speaking to over 150 participants at the Sierra Foothill Field Station annual Beef and Range Field Day, Oltjen outlined six alternative strategies. The strategies ranged from providing additional feed beyond reserve stocks to maintain the pre-drought level of production per cow, to reducing the cow herd size, but not to the extent that per cow production decreases. The best choice would be based on conditions of the particular herd, with the goal in all cases to minimize income loss from the herd and from the cost of additional feed.

Cindy Daley, Staff Research Associate with the Department, presented information on weight gain and economic return of stocker cattle under two different levels of stocking on the station.

Roy Hull discussed livestock management on irrigated pasture during the afternoon session. His main theme was the importance of tailoring type of animal to pasture type in order to maximize production efficiency.

Nine additional presentations were given at one of the most successful Field Days held in recent years. Proceedings of the day are available from: Mike Connor, Sierra Foothill Field Station, P.O. Box 28, Browns Valley, CA 95918.



***Animal Science 1 instructor, Dr. Tom Famula, discusses the importance of educating urban students on animal agriculture issues.***

## **BIG SQUEEZE IS OVER FOR ANIMAL SCIENCE 1 CLASS**

In response to over enrollment, Animal Science 1 will be offered twice each year, beginning Fall quarter, 1991. The course has proven to be a very popular General Education course. Fifteen lab sections were necessary to accommodate the class in Fall 1990.

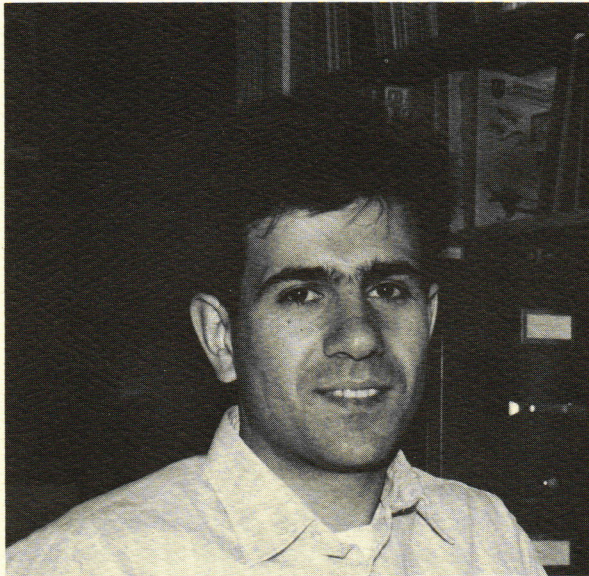
Animal Science 1 covers the fundamental biology of production animal: sheep, beef, dairy cows, and goats, as well as laboratory animals, aquatic species, and companion animal, such as horses, dogs and cats. Dr. Tom Famula taught the course this last fall. What is the appeal of this class? Famula thinks students like the course's direct approach to issues, as well as its hands-on experience with a variety of animal species. "I'll discuss whatever the students want to talk about," he remarks, "They love to handle the animals."

Drs. Dan Brown and Ian Garnett will share in the instruction of the Winter course. "Relevant social issues are addressed," says Garnett. "It's an excellent opportunity to teach production agriculture's point of view to non-animal science students." Probably 80 percent of the students are non-animal science majors. Dan Brown feels "course information can be applied to all facets of life, and is definitely not just for the farm-minded."

Previous Animal Science 1 students were surveyed to determine primary interests in the course. Companion animals were at the top of the list. In response, class content has evolved, and in the words of Tom Famula, "the course's umbrella of domestic species is expanding."

The course examines numerous topics, from the use of companion animals in the health care of the disabled and elderly to the effects of animal agriculture on the ozone layer. Interesting issues include the effects of growth hormones, steroids and antibiotics on food safety, the use of laboratory animals in research, genetic manipulation, veal production, and the effects of agriculture on water quality.

It is hoped that students who attend Animal Science 1 will acquire an appreciation for the importance of animals and animal production to society. A better understanding of animal-agriculture issues can only improve their decisions on this subject no matter what careers they choose.



**INTERNATIONAL PROFILE**  
*Dr. Hakan Sakul*

[With this issue we begin a regular column on international visiting scholars in the Animal Science Department.]

In September 1990, the Animal Science Department welcomed Dr. Hakan Sakul of Ankara, Turkey. Dr. Sakul is a post-doctoral fellow working in international agricultural research.

Sakul completed his undergraduate and master's work at Ankara University, and then taught animal breeding and experimental statistics at Uludag University in Bursa, Turkey. Deciding that he wanted to spend more time in research, he applied for a 3-year scholarship under the Rotary Foundation "Freedom from Hunger" Scholarship program and completed a Ph.D. in Animal Breeding and Genetics at the University of Minnesota. He received his degree in June 1990 and then spent three months at *Agriculture Canada Animal Research Center* in Ottawa learning improved computer techniques for analyzing animal breeding data.

Here at UC Davis Dr. Sakul is working primarily with Dr. Eric Bradford, principal investigator on the Small Ruminant-Collaborative Research Support Program (SR-CRSP) Breeding Project. SR-CRSP is a program sponsored and supported by the United States Agency for International Development (USAID); the program studies ways to improve various aspects of agriculture in developing countries. The program conducts research projects on animal breeding, nutrition, economics,

production systems and sociology. In the Breeding Project, researchers from UC Davis and the host countries are investigating reproductive traits in hair and wool sheep in Indonesia and Morocco, and the integration of sheep grazing in rubber tree crop systems in Indonesia.

In July 1991 Dr. Sakul will visit the projects in Sei Putih and Bogor, Indonesia for some on-site training and to attend a technical committee meeting to review workplans and assess priorities for the coming year. His responsibilities on the Breeding Project include budget planning and accounting; analyzing some 30 years of data from the Hopland Field Station flock and preparing the data for publication; and advising graduate students in the department on their statistical analyses problems.

Dr. Sakul says he is especially pleased to be working on reproduction traits of hair and wool sheep while gaining experience in integrated agricultural systems such as the "sheep-under-rubber" component in Indonesia. All of his previous research work has been with dairy sheep, for which he believes an untapped market exists in the United States. He will bring that expertise to his participation in an upcoming symposium to be presented at UC Davis by the North American Dairy Sheep Association. [See announcement below.]

Dr. Sakul hopes to spend another year here on the breeding project and then find a teaching and research position that enables him to stay involved in international agriculture.

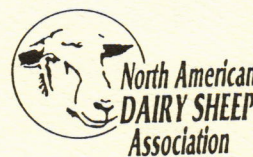
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**NORTH AMERICAN DAIRY SHEEP  
ASSOCIATION and  
UNIVERSITY OF CALIFORNIA, DAVIS  
DEPARTMENT OF ANIMAL SCIENCE**

Present

**1991 DAIRY SHEEP  
SYMPOSIUM**

AUGUST 23-24, 1991  
University of California, Davis



FOR INFORMATION:  
Ron Sundburg  
P.O. Box 141  
Linden, CA 95236  
209/763-5711

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## ***Software Programs to Control Costs, Raise Quality in Feeds and Recordkeeping***

Animal Science Extension has developed several IBM-compatible software packages to assist animal producers formulate least-cost ration programs to fit a variety of nutritional requirements for beef cattle, horses and dairy cattle. A similar program for swine, APOLLO, is near completion. All are designed to be user-friendly, are menu-driven and require a minimum of computer expertise to use. Following is a summary of these programs:

**TAURUS:** Created for use with beef cattle, Taurus is actually four programs in one: RATION formulates a least-cost ration based on weight gain, sex, age, overhead costs, frame size and condition. EVALUATION analyzes a given ration according to nutrient requirements of the animal and notes which nutrients are deficient. FEEDLIST permits editing existing feeds or formulating a custom-designed ration. DELIVERY helps formulate feed mixes for feed trucks or mixers.

**PEGASUS:** This package is comprised of six programs for tailoring horse rations for a variety of needs. LCGROW formulates a least-cost ration for growing horses based on weight, gain, age and whether or not the horse is in training. LCHORSE formulates rations for mature horses including working horses, breeding stallions, maintenance horses, gestating mares and lactating mares. EVLGROW analyzes a growing horse ration based on nutrient requirements of the animal and indicates nutrients that are deficient. Pegasus also has the FEEDLIST and DELIVERY components described in Taurus.

**PCDAIRY:** This program has been designed for dairy cattle. It has seven different programs, including the same FEEDLIST and DELIVERY elements as Pegasus and Taurus. The MAXIMIZE program formulates rations for lactating cows that maximizes income above feed costs based on cow weight, milk yield, fat test, weight change, feed prices and milk price. LC formulates a least cost ration based on the above factors and stage of lactation. GROWING formulates least cost rations for growing dairy animals based on sex, breed, age, weight gain and feed prices. ANLSIS-L calculates the nutrient content of a ration for lactating cows, compares it with National

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## **ANIMAL FACILITIES COORDINATOR POSITION AVAILABLE**

An operations manager is needed for the overall supervision of the Department's animal and farming operations. This position oversees the management of a feed mill, dairy cattle, beef cattle, horse, sheep, goat, swine, aquatic and laboratory animal facilities. The successful candidate will supervise the cultivation and harvest of 500 acres of crop land and will be responsible for livestock purchasing and marketing, and feed and grain purchasing. Qualifications include animal handling and management experience in industry or a research facility and excellent organizational, supervisory and communication skills. Budgeting and computing skills also required. Excellent benefits package. Call (916) 752-0531 M-F 10 a.m.-2 p.m for information. Refer to vacancy listing #208. Final filing date is 7/1/91. E.O.E.

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Research Council nutrient standards, and lists the amount of milk that is possible from the ration and the limiting nutrients. ANLSIS-G performs the same functions for growing dairy animals.

**COWBOSS:** In addition to the ration formulation programs, the department has developed this recordkeeping system for cow/calf herds. Cowboss is flexible, powerful and friendly. It consists of a cow file, a sire file and one or more calf files. There is also a master calf file which contains all the calf crops of previous years. Both cow and sire files use this master calf file to list their calves for display and calculation. Data entry and error checking functions are menu-driven; the user can sort, search and compile reports on a variety of fields or combination of fields. There is also a statistical function for advanced users which makes possible mean, standard deviation, range, simple regression and analysis of variance calculations.

Detailed descriptions and cost information for any of these programs may be obtained from the Animal Science Department, University of California, Davis, CA 95616-8521.

## **FIVE INDIVIDUALS HONORED BY ANIMAL HUSBANDRY MEMORIAL FUND**

*Five individuals have been recognized recently with donations to The Animal Husbandry Memorial Fund. The honorees include Glen Spurlock, sheep specialist; Ken Wagnon, range cattle specialist; Wes Jamison, teacher and sheep breeder; Joe Russ III, Humboldt County rancher; and Floyd Myers Marsh, sheep rancher.*

*The Fund continues to contribute to the enrichment of the student programs in the Department. Originally established in 1954 by the Regents the fund was set up "as an endowment with the income to be used for the advancement of the Department of Animal Husbandry in teaching and research, and by the award of scholarships and grants-in-aid."*

*Donations to the Fund have been made to memorialize three groups of people: livestock*

*producers who have made a substantial contribution to the California livestock industry; persons who have served the industry and made a substantial contribution; and former faculty members and livestock farm advisors in Cooperative Extension. An impressive number of honorees have been recognized since the Fund's founding with an initial endowment of over \$80,000.*

{For more information about the Memorial Fund or to find out how to honor an individual through contribution to this fund, contact Dr. William Weir c/o Department of Animal Science, University of California, Davis, CA 95616-8521, or call 916/752-1250.}

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## **Tales and Trails**

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