

# Knowledge in the Making

## **Cattle Move In: Elk Move Out**

Elk stopped using the meadows much when cattle moved in for the first time in 19 years, concluded a 4-year study of elk, cattle and deer on a site near Heber on the Apache-Sitgreaves National Forest.

Wildlife biologist Dr. Paul R. Krausman of the University of Arizona said that elk at the Circle-Bar Pasture site moved to poorer, wooded habitat after 1980, when cattle started grazing the open meadows that the elk had favored. "This may be one of the best elk calving areas in the Southwest," said Krausman of the study site. The number of elk has not dropped, but Krausman said that their future calving rates under the changed conditions should be studied.

Populations of elk in Arizona are large and increasing, in contrast with past elk numbers and with current numbers of some other large wildlife species, such as big-horn sheep. "We don't have any red flags to put up," said Krausman. "Still, the elk did move when the livestock came in, and that could be fairly critical — not right now in Arizona, but it's important to know in making management decisions." Rapid growth of towns and building of vacation homes in the Mogollon Rim area will complicate management of both wildlife and livestock there in the future, he predicted.

## **Irrigation Tape Reduces Water Need**

Rows of cabbage and squash growing above buried drip-irrigation tape needed only about half the water and half the phosphorus fertilizer as furrow-irrigated rows in recent tests. The rows irrigated with 6-inch-deep drip lines matched or bettered the harvests from the furrow-irrigated rows, said the University of Arizona researchers who grew these test plots at the UA Marana Agricultural Center.

"It's sort of taken for granted that you can save water with drip, but I think the extra advantages are what will make the difference in commercial use," said UA horticulturist Dr. Norman Oebker. He worked on this project with Ibrahim Rubeiz and soils scientist Dr. Jack Stroehlein to test an experimental, water-soluble phosphorus fertilizer.

## **Coyote Gourd Could Become Profitable Commercial Crop**

University of Arizona researchers are checking whether the coyote gourd, a wild desert plant that's a shirttail relative of the pumpkin, could become an agricultural crop. If so, it might provide starch for hundreds of uses, protein supplement for animal feed and oil for industrial uses. Dr. James Berry, a food scientist, and Dr. Allen Gathman and Dr. John Nelson, plant scientists, are



Elk pause during grazing in a central Arizona meadow. (Photo by Wes Keyes, Arizona Game and Fish Department.)

beginning to answer questions about possible domestication of the coyote gourd.

They have collected seeds from gourds growing wild in many hot, dry sites in the U.S. Southwest and Mexico, in order to begin work with as much genetic variation as possible. They tested a variety of irrigation schedules and plant spacings in test plots this year on UA agricultural centers at Mesa and Maricopa. Berry has already determined that coyote gourd starch has some sought-after properties for processed foods.

The researchers know that, even when they find answers to the chemical and genetic puzzles of the coyote gourd, they cannot guarantee it will become a profitable crop.

## **Women's Nutrition Subject of Study**

Nutritional problems identified by a study of women in five Western states show the importance of nutritional checkups and of improving diets before medical problems become evident, according to Dr. Mary Ann Kight, a nutrition professor at the University of Arizona.

Being overweight was the major nutritional problem identified by the 506 women in the study, most of whom were in the 30-to-50-year age group. One-fourth were obese according to skinfold measurements. Serious shortages in dietary minerals, especially iron and calcium, also showed up in the study. Calcium and the proper calcium-to-phosphorus ratio are necessary to keep a good bone structure, said Kight.

Analyzing a person's diet and deciding what changes to make is a job for professional registered dietitians, not for clerks in health-food stores or for people who sell food supplements, Kight emphasized.