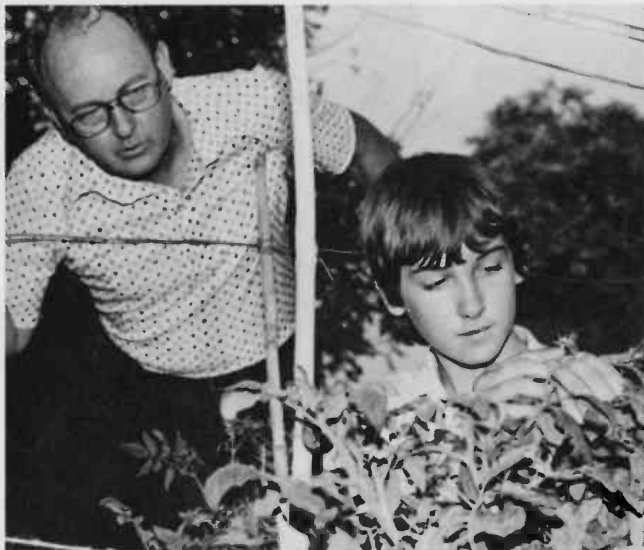


# Knowledge in the Making



Dr. Paul Bessey and son Andy check home garden tomato plants.

## Top Garden Tomatoes Resist Curly Top Disease

Forty-eight home gardeners throughout Arizona helped UA horticulturists **Dr. Paul M. Bessey** and **Carl R. Wilson** compare six varieties garden tomatoes last summer. Two varieties resistant to curly top disease gave the best yields even though 1980 was a mild year for the disease. Those two were Saladmaster, which is a small, egg-shaped tomato, and Columbia, with a medium-sized, round fruit. Varieties GS-393 and Pacesetter 511 had yields in the same range as the top two, while Improved Pearson and Walter Villemaire, both lacking curly top resistance, produced considerably less. Separate variety demonstrations conducted at the Tucson Garden Center identified Saladmaster, Pacesetter 511 and Columbia as significantly better yielding than the other three varieties in Tucson's hot climate. The Pacesetter is a sauce tomato. The cooperating gardeners in the statewide comparison judged the fruit quality of Saladmaster and Columbia as good.

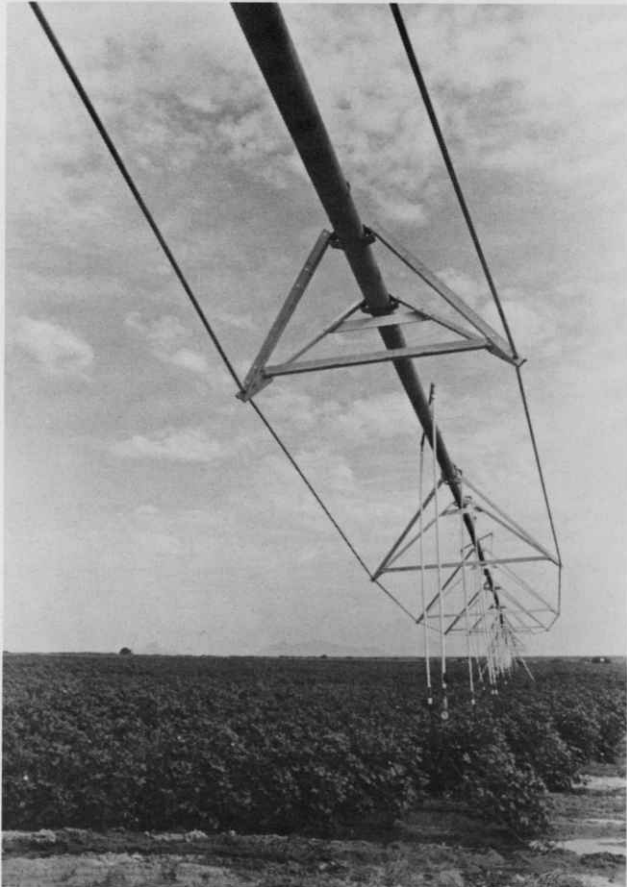
Bessey and Wilson are continuing the project this year, with three added varieties from Idaho that have curly top resistance: Super Star, Red Lode and Ida Red. The resistance is most valuable in years, such as 1981, when curly top is a problem. The disease causes serious tomato losses in home gardens throughout the West in about three out of five years. Saladmaster and Columbia seeds are available from a few Arizona nurseries and through the Washington State Crop Improvement Association, 513 N. Front St., Yakima, Washington 98901. County offices of the UA Cooperative Extension Service have much additional information helpful to home gardeners.

## Public Services: Should They Be Private?

Basic public services such as fire protection and garbage removal often are financed by local taxes. Local governments can provide such services themselves or can contract with a private company to provide them, or let residents subscribe individually to private services. Consumerist **Dr. Julia Marlowe** of the UA School of Home Economics is studying consumer satisfaction with fire and garbage services in Pima County. Satisfaction with these services provided publicly will be compared with satisfaction in other parts of the county where the services are provided by private companies. The households surveyed are in neighborhoods that vary in personal income and housing density. Marlowe expects to have results analyzed by early autumn. They should be helpful in deciding whether public or private delivery of services is more satisfactory in areas of given density and income. Knowledge from research such as this can help local governments use tax money efficiently.



City of Tucson sanitation service: consumer satisfaction studied.



Droplines deliver irrigation directly to partitioned furrows.

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## Putting Irrigation Right Where it Belongs

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UA agricultural engineer **Dr. Delmar D. Fangmeier** is testing a moving, overhead irrigation system that saves water compared with conventional siphon systems and saves energy compared with high-pressure moving sprinkler systems. He has attached drop lines from a wheeled overhead irrigation pipe that can travel the length of the field. The 12-foot-high pipe reaches across the field perpendicular to the furrows. Drop lines extend down at every other furrow. Some end in a spray head five feet above the ground. Others use plastic pipes to place water directly in the bottom of the furrows. The system works at about one-fourth the pressure of most moving, high-pressure sprinkler systems. That saves pumping energy. The water savings come primarily from uniformity of application. Each furrow is partitioned along its length by soil checks or small dikes that are formed mechanically at even intervals. By causing the water to pond instead of flowing away, these

checks equalize the amount of water that soaks into the soil throughout the field. Such checks are not possible when water is applied as a surface flow rather than from above. On cotton this year at the UA research farm in Marana, Fangmeier's test system is using about half the irrigation water used by conventional siphon systems on cotton in the area. He is comparing this system, and variations on it, with costs and performance of other high-efficiency irrigation methods being tried in the state. One variation Fangmeier is trying at Marana is a center-pivot overhead pipe instead of one that moves along the field's length.

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## Caution Flags for Jojoba: Fungi and Feed Tests

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Two separate lines of research at the University of Arizona have handed setbacks recently to jojoba's prospects for becoming a commercial crop. Plant pathologist **Dr. Stanley M. Alcorn** and his co-workers have found that, under greenhouse conditions approximating those of an irrigated field, jojoba is susceptible both to Texas root rot and to verticillium wilt. Both are fungal diseases that can kill a variety of plants. In the wild, jojoba bushes apparently have little if any disease trouble. Supporting Alcorn's test results, findings of verticillium wilt have been made in commercial jojoba plantings near Kingman and near Bakersfield, California. Texas root rot has turned up in jojoba plantings in Sonora, Mexico.

Also this year, animal nutritionist **Dr. R. Spencer Swingle** has found some problems connected with using jojoba meal as a protein source in livestock feed. Jojoba's main commercial value is in the fine liquid wax that can be pressed from its seeds. However, the crushed meal that remains as a byproduct after extraction of the wax has been considered as a possible feed supplement because it is one-fourth protein. Swingle found that feeder steers ate significantly less feed when it was supplemented with 10 percent untreated jojoba meal than when the feed was supplemented with the same amount of cottonseed meal, a common protein source. Treatment of the jojoba meal with a fermentation process increased its palatability for the steers, but the test steers' ability to digest feed and to gain weight were lower with jojoba-supplemented feed than with cottonseed-supplemented feed. Despite these problems, Swingle feels that future work still may be able to make jojoba meal a practical feed ingredient.

**PROGRESSIVE  
AGRICULTURE  
IN ARIZONA**

College of Agriculture  
The University of Arizona  
Tucson, Arizona 85721

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## Arizonans You Should Know

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**Dr. Roy S. Rauschkolb**, 51, has been appointed director of the University of Arizona's statewide Cooperative Extension Service. The appointment, announced by UA Agriculture Dean Dr. B. P. Cardon and subject to approval by the Arizona Board of Regents, is effective October 1. Rauschkolb is returning to Arizona after 12 years

with the University of California, where he has been regional director of the Cooperative Extension Service since 1977. He served on the UA agriculture faculty from 1965 to 1969 as an Extension cotton specialist, then superintendent of the UA Experimental Farm in Safford, then Extension soils specialist. His doctorate in agricultural chemistry and soils was awarded at the University of Arizona in 1968. Following graduation from Glendale Union High School in 1950, Rauschkolb put in a four-year enlistment with the U.S. Air Force as an airborne radio operator. He received a bachelor's degree in chemistry from Arizona State University in 1961 and a master's in agricultural chemistry and soils from the University of Arizona two years later. In his most recent post in California, Rauschkolb supervised 15 county Extension offices and statewide programs in field crops and row crops. As director of the UA Cooperative Extension Service, he will coordinate the efforts of 147 professional and staff employees in county offices throughout the state and 121 more on campus in Tucson. He succeeds Dr. Craig Oliver, who resigned earlier this year to direct the University of Maryland Cooperative Extension Service.

Throughout history, rust fungi have taken a big bite out of the food supply people have tried to grow for themselves. In the past generation or so, advances in plant breeding and crop protection have almost eliminated rust epidemics in major crops in developed countries, though the threat of disastrous losses still exists. Much of the success in controlling crop rusts has been based on work by **Dr. George B. Cummins**. His half century of studying the biology and worldwide distribution of these disease-causing fungi has made him the pre-eminent authority on rusts. Cummins has been a visiting professor in the UA Department of Plant Pathology since 1971, when he retired after 41 years at Purdue University. This May, Purdue gave him an honorary Doctor of Agriculture degree. His research laid the basis for developing Green Revolution varieties of grains and other crops resistant to rust damage. Few individuals have made as big a contribution to increasing and protecting world food supplies as Cummins has. Now he is working with Dr. Hector Leon Gallegos of Culiacan on a book about rust fungi of Mexico.

**Dr. Paul B. Pearson**, visiting professor of nutrition and food sciences, was elected a Fellow of the American Institute of Nutrition at the institute's recent annual meeting. Pearson, 75, has chaired nutrition departments at Texas A&M and Drexel universities, been president of the Nutrition Foundation, and directed the biology division of the U.S. Atomic Energy Commission. Concurrent with his present UA post, he is Chief of the Department of Nutrition at the School of Medicine of the Autonomous University of Guadalajara in Mexico. His research has helped advance the understanding of amino acid metabolism, malnutrition effects and the nutrition of embryos.