

WHERE SEEDS, EARTH AND WATER MEET, NEW IDEAS THRIVE

MARICOPA AG CENTER BLENDS FUN WITH SCIENCE

BY JOE GIUMETTE

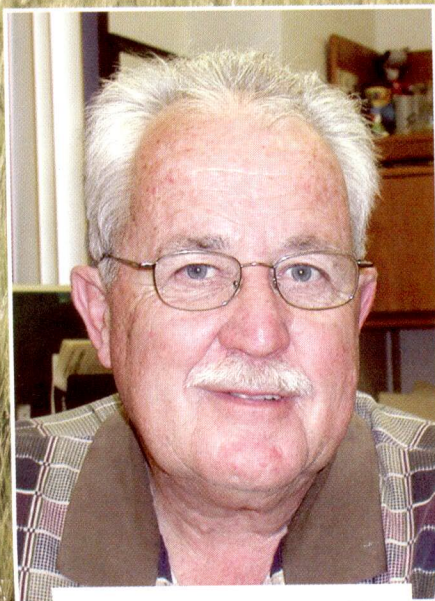
DOWN A DUSTY access road in the middle of a farm on Maricopa's western edge, Dr. Robert Roth climbed out of his Suburban and carefully walked between a few rows of what appeared to be a healthy stand of sagebrush.

He bent over, snapped off a spray of the gray-green plant and slowly stroked its woody fibers. "See there?" he asked. "That's latex."

The plant he held was speckled with small beads of a golden substance, which looked much like sap from a young maple tree. The plant wasn't sagebrush, it was *parthenium argentatum*, better known in Arizona and northern Mexico as guayule (wah-YOO-lay). It's the same plant that America turned to during World War II to help replace its traditional Far Eastern supplies of rubber.

New interest in guayule has emerged — not because there is a shortage of rubber — but because latex from guayule is hypoallergenic. It's being viewed as a practical replacement for the latex from other sources that contain high levels of protein, the apparent source of the allergies that are affecting more and more people.

The guayule project is just one of a number of demonstration projects taking place on the 2,100-acre Maricopa Agricultural Center, a facility owned and operated by the University of Arizona's College of Agriculture and Life Sciences. Dr. Roth, who lives nearby and serves as its resident director, heads a staff of 40, including seven professionals and a full complement of farm attendants. In addition, a search is on for three more faculty members, he said.



Dr. Robert Roth, director of the Maricopa Agricultural Center

PHOTO BY JOE GIUMETTE

As interest in guayule grows, Dr. Roth hastens to point out that the farm also concentrates on new and better methods of growing cotton, alfalfa, durum wheat and other specialty crops that could be used to provide oils, pharmaceuticals and fibers. Water, of course, is a large part of the equation, so much time and effort is spent on easing the problems of modern irrigation in agriculture, especially in the arid southwest.

In addition, ongoing research concentrates on insect control, animal breeding, plant diseases and soil quality.

Only about 500 acres — just under a quarter of the farm's total size — is devoted to small-plot research, dependent wholly or in part on state funding. The larger share accommodates self-sustaining commercial farming operations on land leased by private entities, such as Yulex Corp., which is transforming the guayule into latex for catheters, surgical gloves and eventually, condoms.

"IF YOU EAT, YOU'RE INVOLVED IN AGRICULTURE."

Other leases are held by such entities as Monsanto and Dow Agro-Science, Bayer Crop Science, Seeds West, Dieserto Verde, Valent, Sygenta Crop Production, Harza, Stoneville, Olvey & Associates, DuPont and the Arizona Cotton Growers. Most of these tenants are conducting research on new cotton varieties or testing new agricultural chemicals.

The "MAC," as the facility is commonly known, is in Maricopa for the same reason many of its residents are: overcrowding in other places. In 1983, the center began operations after its programs in Phoenix and Mesa were consolidated. "When those operations were first developed," Dr. Roth explained, "they were actually in the country, pretty remote from populated areas. Later, the land where they used to be became fully developed and urbanized, not really suited for agriculture on this scale. When we opened up here 24 years ago, I don't think anyone dreamed Maricopa would become as fast growing as it has."

The farm is at the western end of Smith-Enke Road and abuts part of the Gila River Indian Reservation. A 40-acre ranch near Camp Verde, also part of the

university's agriculture domain, is home to 400 head of cattle with up to 80,000 acres for grazing. Other facilities are at Safford, Red Rock and Tucson.

Students at all levels are involved in projects or field trips at the Maricopa farm, and the facility boasts dormitories for those beyond commuting distance. Two graduate students, one working on a master's degree, the other a doctorate, currently are in residence. A popular program called "Ag-ventures," created and conducted by Victor Jimenez, a 4-H extension agent, helps second-, third- and fourth-grade students achieve a new understanding — often their first — with the food chain and the importance of agriculture.

Jimenez uses all the familiar teach aids, from demonstration models to audio-visual aids, to dramatic props designed to raise a child's awareness of our limited natural resources. An oversized, fabric "hamburger," for example, contains labels on each portion of the "bun,"

the "tomato," "cheese" and "burger," demonstrating that it takes more than 600 gallons of water, on average, to produce just one of America's favorite sandwiches.

Roth, a native of Bridger, MT, was raised on a farm and holds degrees in agricultural engineering and civil engineering from the University of Montana and the University of Arizona. Originally appointed MAC's resident director upon its opening in 1983, Roth also serves as a full professor of agricultural and biosystems engineering.

Before he was named to his current post, he served in various positions in Dearborn, MI, Yuma and Tucson. He has also served as a consultant in the private sector for a number of food processors.

Anyone with a mainly urban background, whose affinity for agriculture is limited to steaming some veggies or wolfing down a lunchtime salad or fruit may be impressed by a statement emblazoned on a banner in one of the facility's demonstration rooms that tends to put things into their proper perspective.

It reads: "If you eat, you're involved in agriculture." ▲

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