

Outdoor Laboratories

All Segments of Agriculture, All Areas of State,
Served By Variety of Research Stations



A FULLY-EQUIPPED laboratory-office building (above) is center of research at the Mesa Branch Station. Below, view of the Safford Branch Station.

**Harold A. Wylie and
D. F. McAlister**

Few Arizonans know the extent of the research effort of the University of Arizona College of Agriculture, which plays a major part in bolstering our state's agricultural economy. This research extends from the central office in the Agriculture Building on the U of A campus to several branch experiment stations located throughout the farm and ranch areas of Arizona.

Included in the UA branch station list are three farms for field and orchard crops in the Salt River Valley, two in Yuma, one at Safford, one at Marana, four farms at Tucson dealing with pro-

**OUR COVER PHOTO—View
of the UA Dairy Science Re-
search Center.**

duction of domestic animals and animal products, and a regional plant materials center at Tucson. A smaller leased acreage is maintained in the Chino Valley. In addition, research is conducted in cooperation with Arizona farmers throughout the state on cooperators' farms.

Three in Salt River Valley

In the Salt River Valley, general research on field and vegetable crops is conducted at the Mesa Experiment Station, a UA research center since 1915. Here crops are bred, studied and adapted to production in the Salt River Valley.

Harold Wylie is Assistant Experiment Station Editor; Dr. McAlister is Head of the Agronomy Department and Assistant Experiment Station Director, in charge of branch stations.



Facilities include an extensive research laboratory, 160 acres of farm land, the UA Animal Pathology Laboratory for analysis of animal disease, and the superintendent's home. This farm, located on the Mesa-Tempe highway, is known by its tall palm trees lining the fields and driveway and black water tower marked "Mesa Exp. Sta."

The new UA Cotton Research Center is located on Broadway, between 40th and 48th Streets in Tempe. Here U of A cotton research has been conducted since 1956, when the center was completed. A fiber laboratory is the central research laboratory. The new U. S. Soil and Water Conservation Laboratory was recently built on the farm. Both U of A and U. S. Department of Agriculture cotton researchers work at the Center.

A citrus orchard and research facilities make up the UA Salt River Valley Citrus Farm. Here oranges, grapefruit and other citrus fruits are studied.

Two Farms at Yuma

Two farms are maintained in Yuma, one in the Yuma valley and the other on the higher area known as the Yuma-Mesa. The valley farm studies farm crops for adaptation to the Yuma desert climate. On the mesa farm is conducted research on citrus, field crops, and the production of beef and other domestic animals.

A general purpose farm for field and orchard crops at Safford consists of 66 acres of farm land, research orchards, and a superintendent's home.

The Marana farm has only recently been operated by the U of A. Laboratory facilities have not been developed.

Four Livestock Research Farms

The UA Poultry Research Farm is one of four experiment centers in Tucson devoted to research on domestic animals. Located on the Tucson Freeway, the farm consists of chicken houses, a laboratory building, and a caretaker's house. Since chickens are highly sensitive to heat, the

farm is built under the shelter of an old pecan orchard.

Two more farms used for animal research are located on the Casa Grande highway and on North Campbell Avenue in Tucson. An experimental feedlot for beef cattle adjoins the UA Poultry Farm on the Casa Grande highway. Research laboratories and additional animal pens are located on the west side of Campbell Avenue at Roger Road. These facilities are used by the UA animal science department for research on production of beef, sheep and hogs.

The new Dairy Science Research Center on the east side of Campbell Avenue is the fourth UA animal research center at Tucson. This center, including a modern milking parlor, dairy cattle pens, and research laboratories, is devoted to research on the efficient production of milk
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Disease-Resistant Onions For Arizona

Robert B. Marlatt and

Robert T. McKittrick

Our most important onion disease is pink root. It is caused by a fungus, *Pyrenochaeta terrestris*, that lives in the soil for many years. It infects many crops in addition to onions. Thus crop rotation is not a satisfactory means of control.

Infected onion roots turn pink and eventually die, while diseased plants often produce small bulbs and the tops are stunted.

Select Tolerant Varieties

Pink root losses can be prevented by growing onion varieties which tolerate the disease without serious injury. During the past four years, eight varieties were compared for pink root tolerance in the Salt River Valley. They were also rated for amounts of bolting and splitting, bulb rots in the field, behavior in storage and yields.

Dr. Marlatt is an Associate Plant Pathologist, Mr. McKittrick a research assistant, both at the Mesa branch of the Agricultural Experiment Station.

After the second year three varieties were discontinued because they did not perform well in pink root soil. These were Crystal Wax, L690 and Texas Hybrid 23. Varieties kept for further testing included two yellow hybrids, Granex and Texas Hybrid 28. Three open-pollinated varieties were also tested further—Excel, a yellow type, and L365 and Eclipse, both white varieties.

None Was Immune

Granex usually had more pink roots but its extreme vigor permitted it to tolerate the disease with very little effect on the bulbs. None of the eight varieties tested was immune to the disease, and all had some pink roots by the end of the season. Excel, Texas Hybrid 28, Eclipse and L365 varieties had less root infection than Granex.

Plants which had formed seed stalks were counted shortly before harvest. During the 1956 season Granex bolted more than Eclipse. Texas Hybrids No. 23 and No. 28, as well as L365, showed an intermediate number of bolting plants. There were not enough seed stalks in any variety to be of much economic importance.

An onion was graded as "split" if a few outer scales were torn and spread apart on opposite sides of the bulb. Texas Hybrid 28 and Granex contained more split bulbs than did Excel, L365 or Eclipse. However, splitting was not common enough to be of much interest to commercial growers.

Less Basal Rot on Granex

Fusarium basal rot was found in one of the experiments. Most of the roots rot off and a white mold is seen on the base of the bulb. A greenhouse experiment showed that onion bulbs were readily infected by the fungus if injured. Granex had much less of this disease than the rest of the varieties.

An equal number of healthy bulbs from each plot was placed in net bags and stored at 75 to 85 degrees F. They were examined twice during a period of 79 days and rotted bulbs were counted. During the three years when storage tests were run, Eclipse was rated the poorest because so many bulbs of that variety decayed. Fewer Granex bulbs rotted in storage than bulbs of other varieties.

Granex Top Yielder, Too

Bulbs were sorted to three sizes, over three inches in diameter, between two and three inches, and one to two inches. Total yields were also used for comparisons between varieties. Considering total yields and yields of the two larger sizes, Granex performed the best. Of the white varieties, L365 gave the best yields in infested soil.

Despite its susceptibility to pink rot, Granex is recommended for the average, moderately-infested soil. If pink root ever became extremely severe in a field, Excel would be the best yellow variety to try. If a white onion is preferred and a field has a history of pink root, L365 is recommended.

Outdoor Laboratories

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and dairy products. Permanent herds of Holstein, Jersey and Guernsey cattle are maintained.

Seek Better Range Grasses

In Tucson one of two Plant Materials Centers in the west is operated by the University of Arizona as a regional project. Here plant imports from foreign countries are studied and tested before release to researchers at other institutions. Primary purpose of this center is the study and development of forage grasses for western ranges. This facility was turned over to the UA College of Agriculture in 1954 by the U. S. Soil Conservation Service. It houses both U of A and U.S.D.A. research workers.

AT RIGHT is a view of the UA Poultry Research Farm, sheltered in a pecan grove.

