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Improved Short Stature Rice 4

Irradiation was used to induce short stature and early maturing mutants in the rice variety Calrose. These mutants were then combined with a gene for smooth hulls to produce improved germplasm adapted to California growing conditions.

Fungicides for Control of Sugarbeet Powdery Mildew 6

In tests where a variety of fungicide sprays and dusts were applied to sugarbeet plots near Santa Ana, it was found that sulfur dust provided excellent control of powdery mildew.

Is Walnut Drying Time Affected by Ethephon? 7

After the growth regulator ethephon is applied to mature walnuts in the field, ethephon neither increases nor decreases the time needed to dry walnuts.

Phalaris "Staggers" in California 8

The "staggers," a neurological disorder which can cause severe loss in stock grazing on grass of the *Phalaris* species, occurs only in certain areas and is most severe at midseason. Research indicates that cobalt deficiency may be involved and that tryptamine alkaloids could be the cause, but more study is necessary to draw conclusive answers.

A Crown Rot of Celery 10

Fusarium yellows has become a threatening soil-borne disease in coastal California's celery-producing counties. Several approaches to controlling the disease--fungicidal dips for transplants and soil fumigation--proved to be ineffective. However, field tests show that certain varieties of celery are much less susceptible than others.

Sex-Lure Traps Reduce Insecticide Treatments for Pink Bollworm 12

During the summers of 1971-73 in the Imperial and Palo Verde valleys, the number of insecticide applications based on a mean 3.5 to 4.0 male moths per Hexalure-baited trap showed a significant reduction when compared with automatic treatments for controlling the pink bollworm--and cotton yields were not significantly different.

Tobacco Budworm Control on Geraniums 14

During 1974 three commercially available insecticides and six experimental compounds were evaluated for control of *H. virescens* on field-grown geraniums in San Diego County. Results indicate that some of the compounds show sufficient promise to warrant additional testing.

Beet Leafhopper Transmits Citrus Stubborn Disease 15

The beet leafhopper, long recognized as the vector of curly top virus of sugarbeets, transmitted the citrus stubborn disease organism, *Spiroplasma citri*, to periwinkle and citrus.

Research Briefs

Wheat Yields Up Sharply

Average wheat yields per acre in California have doubled in recent years, reports U.C. Davis agronomist, J. D. Prato. Wheat acreage has doubled; barley acreage has dropped somewhat. The main reason for this "green revolution," says the specialist, is the introduction of Mexican wheats to California through cooperative research involving extension workers, plant breeders, and foundation seed specialists in that country and here.

Topdressing Range Soils

Most California range soils must be topdressed periodically with superphosphate to maintain a proper balance among

grasses, legumes, and filaree, says U.C. Davis agronomist, W. A. Williams. Otherwise, subclover soon becomes subordinate or disappears.

By-products Produce Top Gains

By-products in feedlot rations can produce gains as good as or better than grain alone, research by U.C. animal nutritionist Glen P. Lofgreen shows. Steers fed a mixture of 70 percent hominy, 22 percent beet pulp and 8 percent almond hulls averaged daily gains of 2.09 pounds, compared with 2.08 pounds for those fed a barley by-product mixture, and 1.93 pounds for animals fed barley only.

Nitrogen Moves Slowly

Soil scientists at U.C. Riverside have found that it takes about ten years for nitrate in sandy soils to move from the root zone of plants to a water table 120 feet down, and about 50 years for nitrates to be leached to the same depth through fine clay, silt, or silty clay.

On The Cover

Aided by University research and new production techniques such as aerial seeding, California has become the nation's leading rice producer. Photo by Jack Kelley Clark and William E. Wildman.