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CATALOG OF AGRICULTURAL PUBLICATIONS, January 1961.

WHAT YOU SHOULD KNOW ABOUT FARM LEASES, by A. D. Reed and J. H. Snyder, Cir. 491.

CALIFORNIA OLIVE INDUSTRY, by Jerry Foytik, Cir. 492.

CALIFORNIA PLUM INDUSTRY, by Jerry Foytik, Cir. 493.

Plant breeding of lima beans for

NEMATODE RESISTANCE

Several strains of lima beans in California have good resistance to the root-knot nematode, but not one is of commercial quality.

In cooperation with the University of Hawaii a plant breeding program is in progress. Two backcrosses are underway, using the accessioned lines L76 and L136 as sources of resistance and the commercial variety Ventura as the recurrent parent. Crosses are made in the field and in the greenhouse. Results from an inheritance study indicate that two generations of screening are necessary for recognition of homozygous resistant lines. Every backcross of screened lines is given further testing. To reproduce the variety Ventura with good nematode resistance included, six backcrosses probably will be necessary.

A bulk population with the nematode resistant line L76 as one parent has been screened, and 24 homozygous resistant lines crossed to the Ventura. Seeds from the crosses will be assayed in the field to select suitable stock to continue the lima bean breeding program for California.—*Carl L. Tucker, Dept. of Agronomy, Davis.*

Tomato varieties resistant to

TOMATO RUSSET MITE

In current investigations 190 varieties of tomato are being field tested to evaluate their abilities to resist natural russet mite populations. All plants which show

promise will be saved for future greenhouse studies.

Greenhouse studies will include attempts to determine the biotic potential of the russet mite on the 190 varieties. Such phenomena as the rate of population increase, longevity and fecundity of adults, size of adults, and general activity of the mites will be studied. The ability of the individual plants to tolerate a given number of mites will also be investigated.

Any plants that possess attributes detrimental to the mites will be given to cooperating tomato breeders to be included in a plant breeding program designed to transmit those special qualities to commercial varieties.—*Richard Rice and Frank E. Strong, Dept. of Entomology, Davis.*

Research is under way on the effect of fertilization and irrigation on yield and canning quality of tomatoes.

Resistance to

SPIDER MITES IN COTTON

Forty-five genetic lines of cotton are being investigated, to determine how important the genetic background of cotton strains may be in the severity of infestation by spider mites in cotton-breeding nurseries. Five cotton species are represented by commercial cotton types grown in California, the southeastern United States and South America, and wild cotton types from Arizona and Central America.

Wide differences in severity of spider mite attack have been found in some of the types from which the Acala variety was derived. Differences in severity of attack appear to be related to the ability of mites to colonize and reproduce on the host, and that ability varies with the different genetic lines of cotton.—*Thomas F. Leigh, Dept. of Entomology, Davis.*



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