New Crop of Research On Olive Cultural Problems
H. T. Harmsen

One problem which has plagued olive growers since antiquity is the infection of olive trees by the disease known as olive leaf curl, and a second problem which has been a more recent one is the lack of cultivars adapted to California conditions. Olive leaf curl disease is caused by a virus which is transmitted by the leafhopper vector, and it has been a major factor in the decline of olive groves in California. To combat this disease, researchers have been working on breeding resistant cultivars and on developing effective control strategies. A recent development in olive breeding is the introduction of new cultivars developed through techniques such as tissue culture and somaclonal variation. These new cultivars show promise in terms of resistance to leaf curl and other diseases, as well as better fruit quality and yield.

Flower-bud Formation
A study of flower-bud formation in the olive has already revealed that it occurs about the middle of March. This timing is important in determining the olive planting schedule and in planning for the olive harvest.

Further Improvements Needed Before Mechanization of Cotton Growing Reaches Full Efficiency
J. P. Fairbank

The mechanical cotton picker does not yet reach the center of the field, and this is one of the current labor cost of 100 hours per acre. Even today, most cotton is still hand picked. The picker is a new machine. One was patented back in 1850. The machine is now in use in the field, and it has been a great improvement over hand picking.

Operation
One manufacturer's pickers cut at three miles an hour, closely. Another picker operates at two miles an hour in low gear, which, in 10-inch rows figures eight-tenths-acre per hour.

The last load in turning, dumping, and serving, reduces the ar.

(Continued on page 2)

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(Continued on page 2)

Over 110 Recognized Soil Types Represented in Twelve Regons Of State's 100,000,000 Acres
E. Earl Steere

To date in California 380 different soil series have been established, with over 1100 recognized soil types. The most important of these soil types, or pedons, are the zonal soil types, which are the dominant soil types in the state. These soils are classified according to their characteristics and are used to determine the growing conditions for various crops.

Soil types vary widely in California, from the rich, well-drained soils of the Central Valley to the sandy soils of the deserts. The diversity of soil types in California is one of the factors that makes it a rich agricultural state.

(Continued on page 2)

Spring Management of Honeybee Colonies Determined By Colony Needs Rather Than By Calendar
J. E. Erickson

The condition of a honeybee colony during springtime points to its probable condition in the next six months. For instance, the amount of spring manipulation can be reduced to a minimum if each colony is provided with certain essentials the preceding fall. A colony that has a young queen, no more bees than are needed, and sufficient stores of honey and pollen to supply the bees until they can secure surplus stores in the spring, will need little attention until they require additional space for the expansion of their brood nest and storage areas.

The queen is the most important determining factor. A young queen can be provided in the fall in small colonies, and a colony containing 25 to 300 bees may be needed in the spring.

(Continued on page 2)
Yield Trials of Lima Beans for Freezing Qualities and Growing Area Extension Possibilities

John H. MacGillivray and L. J. Clemente

The rapid increase in the acreage of lima beans, the introduction of new varieties, as well as the rapid growth of the freezing industry have made it necessary for some lima bean trials in 1946. These trials were designed not only for determining the production potential of new varieties but also for learning whether yields were high enough to permit the growing of the crop for freezing.

Varieties Tested

The following varieties were tested, although not at each location:

Fordhook; Henderson; Early Market; and Westan

Location of Tests

Ryer Island (Solano County) is located about 20 miles west of the Sacramento and San Joaquin River estuaries. The trials were planted July 14th and harvested on September 26th, 1946. There were three plots per variety, representing the effects of three different soil moisture levels. The beans were all hand shelled, with the shell and bean discarded.

Santa Clara (Santa Clara County) The beans were grown north of the city of Santa Clara. The large seeded varieties were planted July 1st and harvested October 8th. The small seeded varieties (U.S. 34A and U.S. 833) were planted July 15th and harvested October 6th. Areas around the variety were about one-tenth of an acre in size and were separated from each other by a furrow to allow a voter to obtain the beans for freezing. Quality of these beans were probably the best and this is partly the reason for low yields.

Hollister (San Benito County) beans were planted north of the city on a 300 feet long, level, farmed, and irrigated field. The beans were all hand shelled, with the shell and bean discarded.

Greenfield (Monterey County) normally produces dry lima beans. Some of the beans were grown in a warm, dry climate on a 200 feet long, level, farmed, and irrigated field. The beans were all hand shelled, with the shell and bean discarded.

Conclusions

Yields obtained from these tests were encouraging when it is considered that the United States lima bean crop in 1943-1946 was 1,154 pounds of shelled beans per acre. California yields have, in 1944 and 1945, been higher and were 1,180 pounds in 1943 and 1,380 pounds per acre in 1945.

This crop is not too well adapted for growing on the sandy soils of the valley, where the deep, loose, sandy loams yield the best. The land should be kept well drained, so that the crop can be grown under field conditions, and no special attention given to making the field level.

Further studies of lima varieties and the long season variety, should be made in 1947 when conditions are more favorable for the growth of the crop.

Yield Trials Near Hollister

Three experiments with lima beans were planted June 11th, 1946, in plots of 200 feet long, 50 feet wide, irrigated by the Potteaufirrigation system. The roost were spaced 36 inches apart and the inner later was planted at 6-8 inches spacing.

The tests were initiated prior to planting and at approximately three-week intervals during the growing period. Temperatures during the growing period were increased plant yield 26 per cent for some lima bean trials in 1946. Of the strains planted at Hollister, the westan strain increased plant yield 26 per cent for some lima bean trials in 1946. Of the strains planted at Hollister, the westan strain increased plant yield 26 per cent for some lima bean trials in 1946.

The Early Market and the Henderson, the two best varieties for freezing, produced an average of 380 pounds per acre in 1946. These two varieties were hand shelled, with the shell and bean discarded.

In commercial practice, beans are harvested at approximately 30 days after the plants have 20 inches of pods. Henderson and Early Market beans were planted July 15th and harvested October 17th, 98 days after planting. The tests showed that there was a decrease in the yield of lima beans for freezing as the days increased. There were no rains during the growing period.

The day temperatures seldom exceeded 70 degrees; the rains fell during the growing period. The tests indicated that there was a decrease in the yield of lima beans for freezing as the days increased. There were no rains during the growing period. The tests indicated that there was a decrease in the yield of lima beans for freezing as the days increased.

Follow-up information on the results of freezing has increased greatly in the past few years. The grower must be careful to make sure that he is planting a variety that is suitable for freezing. The grower must be careful to make sure that he is planting a variety that is suitable for freezing.

Further studies of lima varieties and the long season variety, should be made in 1947 when conditions are more favorable for the growth of the crop.

Forage Grasses

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