There's a NEW SOYBEAN in Arizona

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The development of *Lee*,* the shatter-resistant soybean, has made possible a new crop for Arizona farmers.

Of the hundreds of varieties and strains of soybeans tested at the Mesa Experiment Station, this was the first variety which held its beans as they ripened. *Lee* is well adapted to the southern Arizona counties.

While there is still much to be learned about growing this crop under irrigation, many farmers have successfully grown *Lee;* and they and their neighbors plan to plant it this year. Not all farmers who have tried the crop have been pleased with their results. There have been reports of fields yielding less than 10 bushels per acre while a few fields have yielded more than 45 bushels per acre. Most Arizona growers agree that the break-even yield is at least 25 bushels per acre at a price of about $2.40 per bushel.

In addition to the production of foundation seed of *Lee*, several tests on cultural practices have been carried on at the Mesa Experiment Station.

Date of planting

Lee soybeans should be planted during May. Data from a date-of-planting test (See graph) show that yields were as much as 35% less when planted the latter part of June than when planted the first week in May. Better stands were obtained with May plantings and the plants were taller at maturity. The May-planted beans suffered less from insect attacks and the growth of the plants was not retarded by the first irrigation after planting.

Grower experience and the date of planting experiment in 1955 indicate that it may *not* be possible to successfully double-crop soybeans with barley grown for seed. To delay planting soybeans until small grains are harvested and a seedbed prepared may reduce soybean yields considerably.

Rate of planting

The rate of planting should result in 6 to 10 plants per foot of row. It is best to plant about 12 *viable* seeds per foot. With the 36- to 40-inch row spacing used for soybeans, 50 to 60 pounds of seed per acre should provide an adequate stand. Soybeans spaced an inch or two apart in the row produce a tall plant with few branches and the lowest pods are set several inches above the ground. In a poor stand of soybeans, short, branching plants develop which set many pods close to the ground. These pods are difficult, if not impossible, to harvest with a combine.

For best results, soybean land should be pre-irrigated. Plant the seeds about 2 inches deep in moist soil. With this method, annual weeds seldom become a problem until after postemergence irrigations.

Innoculation is necessary

Like other legumes, soybeans are capable of obtaining nitrogen from the air when grown in association with certain nodule-forming bacteria. Just before planting, soybean seed should be carefully treated with the proper strain of inoculum. It is wise to inoculate all seed, even when planting where soybeans have been grown the previous year.

Nodulation in soybean fields varied from excellent to none during the past season. Although most, and often all, of the nitrogen needed by soybean plants can be provided through the nodules on their roots, nitrogen fertilization may sometimes be necessary to achieve top yields.

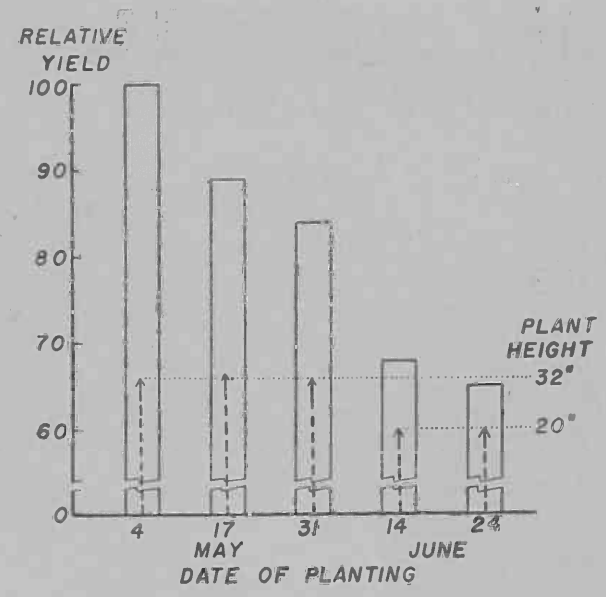
It is apparent that nitrogen provided through nodulation increased soybean yields to a greater extent than did nitrogen fertilizers (See Table). Soybean yields will not be increased by phosphate fertilization unless this element is deficient in the soil.

Yield of LEE Soybeans in Fertilizer, Inoculation Study

Treatment		Yield of Seed
Fertilization	Inoculation	Percent of Fertilized Inoculated Plantings
100 units N/a.	Yes	100%
None	Yes	86%
100 units N/a.	No	74%
None	No	58%

Irrigation requirements

Although the exact amounts of irrigation water for soybeans in Arizona have not been determined, about three acre-feet were used in growing the crop on the Mesa Station. Stressing the plant at any time during its development will very likely decrease yields.



Effect of date of planting on yield and height of Lee Soybeans, Mesa Experiment Station, 1955

A soil-conditioning crop

Some growers who have one or two seasons' experience with soybeans indicate they will grow this crop even if they only break even costwise. They have observed that land which has produced soybeans has an unusually good physical condition when prepared for the following crop. Several growers have noted that many crops grow better on land that has been in soybeans than on land which has been in sorghum or cotton.

*This variety was developed by the Forage and Range Section of the U. S. Agricultural Research Service in cooperation with the State Experiment Stations. The Arizona Agricultural Experiment station was one of the Stations cooperating in the testing and release of foundation seed of Lee.

Plant on right was not inoculated. Plant on left was treated with proper strain of bacteria.