

Castor Beans

A New Crop for Arizona?

By W. M. Wootton

Castor beans are the "Cinderella" crop of Arizona. A year ago the state had only a few experimental plots and no commercial fields. But this season the new oil seed crop is growing on about 4700 acres in the Yuma and Phoenix areas.

This rapid rise in acreage was made possible through scientific research. For several years plant breeders have been patiently developing a dwarf type plant that is short enough for mechanical harvesting yet capable of producing high yields. Such a plant type now has been established in the varieties Baker 1, 7, and 34.

These new strains also have resistance to shattering that make it possible to hold pods on the plant long after they are mature. Other features of these varieties are a high oil content and uniform seed size. Since this breeding program is still in progress, even more productive dwarf type strains are likely to be released.

New Harvester Developed

At the same time plant breeders were working on varieties, engineers were developing harvesting equipment. As a result, a mechanical harvester and huller is now available. This modified combine eliminates the hand harvesting labor which formerly made castor beans an impractical crop.

Much of the development of castor beans as a commercial crop has been done by the Baker Castor Oil Company of San Diego. This organization now holds contracts on all of the plantings in Arizona and California. However, it is likely that other companies will soon enter the field.

What are the features of this new crop which now has a good start in Arizona? Castor beans produce a high quality oil that has a wide range of uses. Here are only a few of the products that contain castor oil: adhesives, asphalt tile, cosmetics, condenser oils, emulsifiers, greases, fungicides, lubrication oil, medicinal preparations, paints, enamels, varnishes, printing ink, soap, and rubber

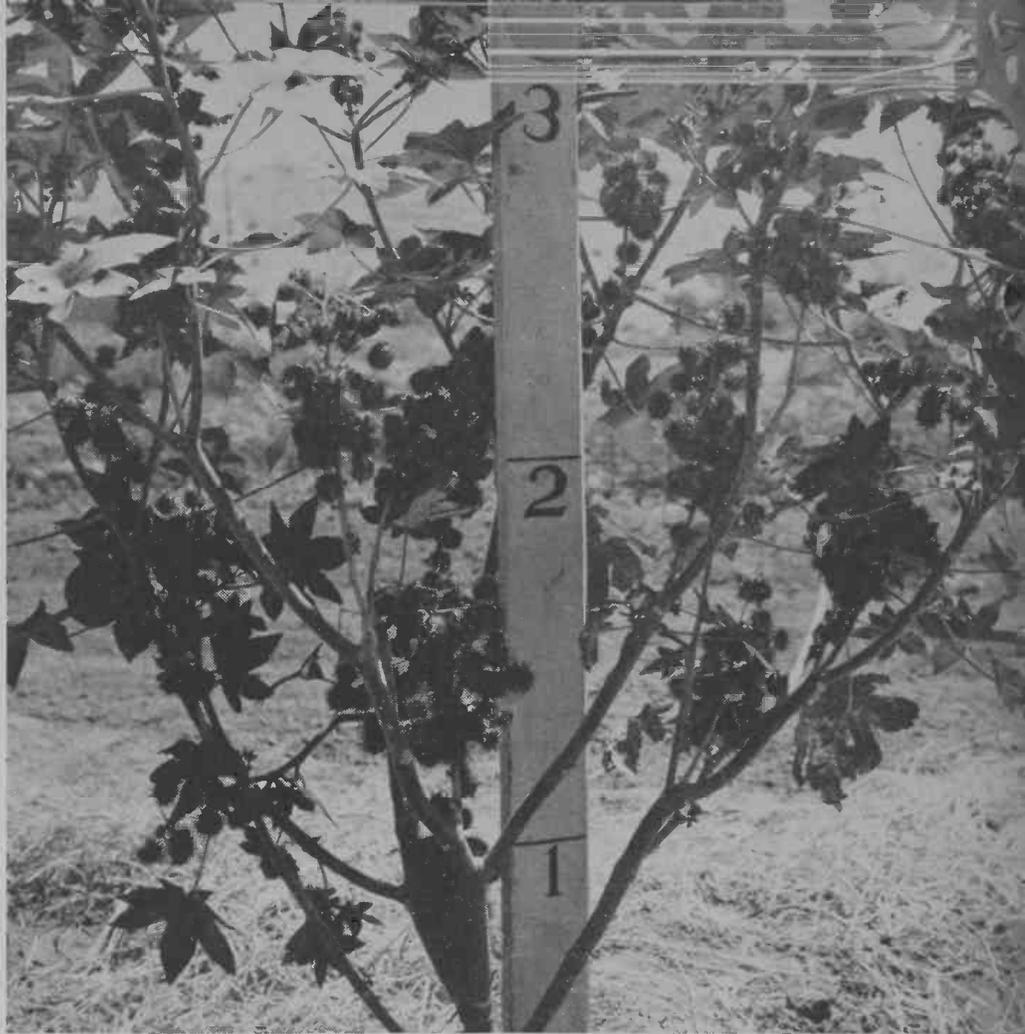
Baker No. 1 castor bean, characteristic of the dwarf type commercial variety. Planted early in April. Photo August 16, 1951, at University of Arizona Experiment Farm, Yuma, by C. W. Van Horn.

products. Castor oil is also used in manufacturing and operating military weapons including jet air planes, armor piercing bullets, and submarines. In addition, the residue from crushed beans has considerable value as an organic fertilizer.

At the present time this crop is on an import basis and the supply is short. There already is a well established cash market for castor beans. The late summer price was \$236 per ton delivered at Holtville, Calif. Because castor oil is considered an important industrial material, the government has placed a support price of \$200 per ton on the crop. Harvesting and hulling costs are about \$20 per acre and growing costs are usually less than for cotton.

Castor beans are a fast growing spring or summer crop which offers strong competition to weeds. The planting season extends from March to June. In a March planting at Yuma there were blooms in 4 to 5 weeks and a few mature pods before the plants were 3 months old. After the lower pods are set the plant continues to make new growth and successive groups of new seed stalks. The average yield is expected to be about 1 ton per acre.

The water requirements for this crop are about the same as for cotton. The general practice is to plant the beans in a dry seed bed and then irrigate. This method gives very good stands.



The fast maturity of castor beans makes them a good possibility for a rotation planting with fall or winter planted crops such as barley, wheat, or vegetables. They are harvested in one cutting which may be started between late August and January.

If necessary for early harvesting, the leaves can be chemically defoliated. However, this practice is not necessary if cutting is delayed until the first killing frost.

At first castor beans were considered fairly free from insect damage. However, this season cut worms, boll worms, beet army worms and spider mites caused some loss. Up to now, lygus bugs and stink bugs have caused no noticeable damage. If this continues to be true, the insect control program should not be as expensive as for cotton.

Tests Under Way

The Experimental Station and Extension Service now have several test plots and demonstration fields in the Yuma and Salt River Valley areas. This work is designed to determine the best varieties, dates of planting, bed type, plant spacing, and the fertilizer requirements.

It is difficult to predict the future of any new crop. In the case of castor beans, a lot depends on this season's yields and the future price of castor oil. However, from all indications it looks as though our new "Cinderella" crop is here to stay.

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