

Adsuki Bean, *Phaseolus Angularis* (Willd) W. R. Wight

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by

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Adsuki bean (Sp-168) (also commonly spelled Adzuki) has been a subject of research by the Oklahoma Agricultural Experiment Station since 1960. This report summarizes results of research to date. The original seed was obtained from Formosa through the courtesy of Stassen Soong, a former graduate student.

According to Leese (1), the Adsuki bean is native to India and is cultivated in northern China and Japan where it is eaten boiled with soup or mixed with rice. The Japanese use Adsuki bean for making pastry. The beans are cooked until tender; sugar and spices are added and this mixture is either blended with the pastry or used as a filling. The seed are used for food either green or dry.

In Angola and Belgian Congo, the beans are used for food and feed and are considered medium to high in nutritive value and medium to high in palatability for humans and livestock (2).

The dry seed contain approximately 23 percent protein, 65 percent carbohydrate and 0.3 percent fat (2).

TABLE 1. Summary of data obtained in observation and replicated tests conducted from 1960-1962.

Location	Year	Date Planted	Date Harvested	Seed Yield (lbs./A)	Gms/100 seed	Row width (inches)	Plant Ht.
Paradise	1960	4-20	8-5	216	--	20	--
Perkins	1960	6-21	10-3	250	--	40	16
Paradise	1961	4-7	8-1	216	--	20	--
Stratford	1962	5-31	8-22	140	7.1	40	19
Perkins	1962	5-5	8-7	472	7.1	40	29
Perkins	1962	6-8	8-28	291	7.6	40	22
Mangum	1962	5-21	8-16	80	7.7	40	--
Heavener	1962	6-2	8-20	168	7.1	40	--
Goodwell*	1962	5-30	9-20	600	--	28	--

*Irrigated

If the yields could be increased by closer spacing to make production profitable in Oklahoma, the crop offers a possibility for a double crop. It could be used as a catch crop to produce dry legume seed for food or the production of planting seed for other countries.

RESULTS

Description

The bush type plants are 16 to 29 inches tall (Table 1 and Figure 1). Leaflets are pinnate trifoliate with the odd leaflet supported on a long petiolule. Some leaflets are slightly cleft. The yellow blooms appear 30 to 40 days after planting. Pods are green turning straw-color with maturity. Mature pods are 7 to 10 cm. long (Figure 2). Approximately 85 percent of the pods are mature at the first harvest date. The pods contain from four to eight seeds (Figure 2). Dry pods are approximately 50 percent seed. The seed are deep red with a long white hilum and range in size from 7.1 to 7.7 grams per 100 seed (Table 1 and Figure 2).

Disease

The plants were relatively free of disease symptoms during the period tested. Sporadically small necrotic areas were noted on a few leaflets.



Figure 1. Plants of Adsuki bean seeded May 17, 1963 near Perkins. The rows were spaced 40 inches apart and photographed August 9, 1963.

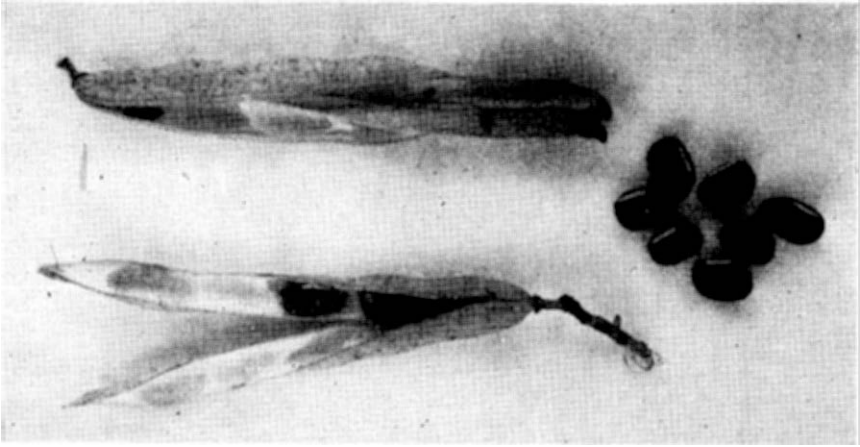


Figure 2. Seed and pods of Adzuki bean (Sp-168) produced in 1962.

Performance

The pods of Sp-168 started ripening 60 days after planting but required 80 to 116 days for maturity in station tests. Some shattering was noted when ripe pods were allowed to remain on the plants. Mean seed yields for nine station years was 270 pounds per acre and ranged from 80 to 600 pounds (Table 1).

Two additional sources of Adzuki bean (Sp-313 and Sp-416) were planted for evaluation in 1963. Sp-313 is considerably later than Sp-168.

LITERATURE CITED

1. Leese, Bernard M., Jr. Identification of Asiatic species of *Phaseolus* by seed character. *The American Naturalist* 60:132-144. 1958.
2. Tabulated information on tropical and subtropical grain legumes. Plant Production and Protection Division. Food and Agri. Organizations of United Nations. Rome, Italy. 1959.