

## FABABEAN VARIETY TRIALS

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### ABSTRACT

Fababeans (Vicia faba L.) are well adapted to Central Oregon but no markets exist which will enable the crop to contribute to the economy. Trials were conducted in 1984 to obtain additional information on variety performance. Conditions in the Madras test did not permit a proper evaluation of Chinese, Herz-Freza, Ackerperle, Diana, Alladin, and Petite. All were similar in yield. However, at Powell Butte the 3,775 lb/A yield of Herz-Freza was significantly greater than the other varieties. The yield of Petite was similar in both trials but the production of seed from the other varieties was greatest at Powell Butte. Excellent seed yields were also obtained from Alladin, Frederick, Herz-Freza, and Diana at Redmond in 1983. Climatic conditions in Crook and Deschutes counties may be the most favorable for fababean production.

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Fababeans continue to interest Central Oregon growers because the crop is well adapted to cool climates and short growing seasons, but market development looms as a gigantic challenge. This annual legume has excellent potential for rotation with cereal crops. The greatest opportunity in our area appears to be for seed production, reseeding, or protein supplement in livestock rations. Therefore, two trials were conducted in 1984 to obtain additional information on adaptation of varieties.

### MATERIALS AND METHODS

Seed of six varieties was obtained from the USDA Regional Grain Legume Group at Washington State University for tests at Madras and Powell Butte in 1984. Each variety was replicated four times in a randomized complete block design.

Madras. Non-inoculated seed of each variety were planted about three inches deep on April 17, 1984, in plots 14 feet long and four feet wide with eight inches between rows. Two hundred pounds per acre of 16-20-0 and 100 lb/A of 0-0-60 were worked into the seedbed. A pre-plant application of 1.5 pts/A Treflan was also soil incorporated. About 20 inches of irri-

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gation water was applied by sprinkler as needed throughout the season. A four foot x ten foot plot was harvested by hand August 30. Plants with seed pods were placed in large burlap bags and air dried. Seed was threshed with a stationary plot thresher, conditioned, and weighed. Data on seed yield, 100-seed weight, and mature plant height were analyzed statistically.

Powell Butte. Seed inoculated with Rhizobium leguminosarum was planted April 30, 1984, about two inches deep in plots four feet wide and 16 feet long with eight inches between rows. Five hundred pounds per acre of 27-12-0 was incorporated into the seedbed. All plots were hand weeded. The nursery was irrigated as needed throughout the season. A four foot x 14 foot area of each plot was harvested on September 24, 1984. Material and data were handled in a manner similar to the Madras trial.

## RESULTS AND DISCUSSION

Madras. No significant differences existed among varieties for seed yield (Table 1). Considerable variation existed within the trial. The stands were poor and seedling diseases may have been involved. Because of the wet soil condition, the seedbed was too cloddy and in poor tilth. Consequently, planting was difficult with poor seed coverage. Seed shatter at harvest time ranged from 0-25 percent. The variety Petite did not shatter. The pod wall and inner tissue adhered tightly around the seeds which made threshing difficult and growers probably would have problems threshing this variety. The variety Chinese was also hard to thresh but not as much as Petite. The seed of Petite was about one-fourth inch in diameter, much smaller than the other varieties. In contrast, the seed of Chinese was by far the largest. The seeds were rather flat and oval in shape with the largest ones measuring about one-half inch wide by three-quarters inch long. This made planting difficult with the station plot drill. It is doubtful if a grower could plant Chinese with a conventional grain drill without severe seed damage.

All varieties were rather short which probably was caused by heat stress. Likewise, seed yield probably was adversely affected. Symptoms of chocolate spot (Botrytis) began to appear on all varieties June 18 and gradually increased in severity.

Powell Butte. The seed yield of Herz-Freza was significantly higher than other varieties (Table 2). Diana, Ackerperle, Chinese, and Alladin were similar in yield. Petite was the poorest seed producer. The 100-seed weights reflect the seed size of the varieties. Chocolate spot existed in this trial on all varieties but was not nearly as severe compared to Madras.

Excellent seed yields of Fababeans can be obtained in Central Oregon. However, the greatest productivity may be expected

Table 1. Madras fababean variety trial, 1984

Variety	Yield (lbs/A)	Pod Shatter (%)	100 Seed Wt.(gm)	Height (in)
Chinese	2,612	1	77.1	32
Herz-Freza	2,507	11	46.8	36
Ackerperle	2,422	25	41.5	36
Diana	2,017	13	41.6	34
Alladin	2,073	24	42.7	40
Petite	1,832	0	27.6	26
LSD 5%	NS	--	3.5	3
CV (%)	25	--	5	6

from planting in the cooler areas, Deschutes and Crook counties. An aggressive market development program to establish favorable markets and prices for the seed as a protein supplement for livestock and for replanting is a critical need. Future research on weed control is planned in cooperation with growers. No variety trial is planned in the near future.

Table 2. Powell Butte fababean variety trial, 1984

Variety	Yield (lbs/A)	100 Seed Wt. (gm)	Height (in)
Herz-Freza	3,775	50.3	41
Diana	3,021	46.0	35
Ackerperle	3,017	43.0	39
Chinese	2,756	79.9	28
Alladin	2,690	45.9	36
Petite	1,868	28.1	24
LSD 5%	488	3.1	3
CV (%)	11	4	6

#### References

1. Hebblethwaite, P.D. 1983. The Faba Bean: A Basis for Improvement. Butterworth Publishers, 80 Montrale Ave., Stoneham, MA 02180.
2. James, S.R., J.L. Nelson and R. Brevig. 1984. Fababeans-a New Crop for Central Oregon? pp 28-30. In Irrigated Crops Research in Central Oregon 1984. Oregon Agricultural Experiment Station, Special Report 717. July 1984.