

## LENTIL VARIETY TRIAL

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### ABSTRACT

Lentils (*Lens culinaris* Medik.) may be adapted in some areas of Central Oregon to complement crop production programs. Therefore, the six newest varieties were tested at Madras under irrigation. The best variety was Eston which produced 1,611 pounds of seed per acre. This yield was considerably less than the 2,257 lbs/A for Chilean Common grown in a small test at Redmond in 1977. However, the conditions of the 1984 Madras test were not conducive to the proper evaluation of the new cultivars.

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Lentil is a cool season, annual legume. Approximately 190,000 acres are produced in the Palouse area of Eastern Washington and Northern Idaho which is the main production area in the United States. Most of the crop is exported. Supplies, demands, and prices fluctuate as with most crops but the Palouse growers have utilized the crop to real advantage to replace peas in the rotation with winter wheat on many fields. There should be areas in Central Oregon where lentils are well adapted. From one test in 1977 at Redmond, the Chilean variety yielded 2,257 pounds of seed per acre which was impressive. This compares to many yields of 800-1,500 pounds per acre in the Palouse. Perhaps there would be an opportunity to break into the export market. However, the economics of lentil production in Central Oregon is unanswered. Nevertheless, it was decided to evaluate several new varieties to obtain additional information on adaptation.

### MATERIALS AND METHODS

The trial was at the station's Madras research site. Two hundred pounds of 16-20-0 per acre and 1.5 pints/A of Treflan were incorporated into the seedbed on April 6, 1984. Seed of six varieties as shown in Table 1 was obtained from the USDA Grain Legume group at Washington State University.

Each variety was replicated four times in a randomized complete block design. The nursery was planted April 17, 1984, in four feet x 14 feet plots. Each plot consisted of six rows eight inches apart. The seed was not inoculated with

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Rhizobium bacteria. About 20 inches of irrigation water was applied by sprinkler as needed. A four feet wide x 10 feet long area was harvested from each plot. On September 9, plants were pulled by hand and placed in burlap bags to dry. Seed was threshed in a stationary plot thresher and conditioned with a M2-B air screen machine. Yields per acre, 100 seed weight, and plant height were analyzed statistically.

## RESULTS AND DISCUSSION

Eston yielded 1,611 pounds of seed per acre, significantly more than any other variety (Table 1). This Canadian variety is a small-seeded yellow cotyledon type. The yield of Eston was much lower than the 2,257 pounds per acre for Chilean Common obtained at Redmond in 1977. Perhaps the lentil yields at Madras were adversely affected by the high temperatures but the poor stands and seed shatter (5-20%) were probably more contributory. It may be that the lentils would perform better in the cooler areas of Central Oregon, Deschutes and Crook Counties, similar to the areas where good fababean responses have been obtained. However, conditions in this trial were not sufficient to evaluate seed yields.

Differences in seed size are evident from an examination of the 100-seed weights.

The mature plant height ranged from 16-22 inches.

Table 1. Madras Lentil variety trial, 1984

Variety	Yield (lbs/A)	100 Seed Wt. (gm)	Height (in)
Chilean 78	818	5.9	16
Red Chief	755	6.0	20
Eston	1,611	4.2	18
Brewer	1,201	6.7	19
Laird	1,158	7.2	19
Emerald	1,102	6.1	22
Mean	1,108	6.0	19
LSD 5%	350	0.5	3
CV (%)	21	5	10

## References

1. Proceedings of The Palouse Symposium on Dry Peas, Lentils, and Chickpeas, held February 23 and 24, 1982, at the University Inn, Moscow, Idaho. 235 pp.
2. Summerfield, R.J., F.J. Muehlbauer, and R.W. Short. 1982. Description and Culture of Lentils. USDA, ARS, Production Research Report No. 181.