

Pinto Bean Variety Trials in Graham and Greenlee Counties, 1988

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ABSTRACT

Two pinto bean variety trials were grown in Greenlee and southern Graham counties. UI 114, the most commonly grown variety in both areas, was out-yielded in both locations by other varieties. In Greenlee county, Luna, a New Mexico variety, surpassed UI 114 by approximately 100 pounds per acre. In Graham county, Olathe, a Colorado variety, out-yielded UI 114 by more than 250 pounds per acre. At \$40 per hundredweight, the latter difference translates into more than \$100 per acre.

INTRODUCTION

Drought in the Midwestern bean-growing areas increased the demand and price for pinto beans in the Southwest. The most recent data on pinto bean varieties in area of the high deserts of southeastern Arizona were developed by Marcarian in 1983 (1). Since that time, several new varieties have been developed and need to be evaluated. These two variety trials were designed to aid bean growers in Duncan and the Sulfur Springs Valley in deciding which variety of pinto beans to plant.

MATERIALS AND METHODS

Bean varieties were grown as a double crop following wheat or barley in Duncan and south of Bonita in Graham county.

Crop History

Site 1

Cooperators: Mike and Wilbur Lunt, Duncan, Greenlee county
Soil type: Pima clay loam
Planting date: 19 July 1988 Rate: 80 pounds per acre
Fertilizer: 200 pounds of urea per acre
Herbicide: None
Insecticide: None
Fungicide: None
Irrigation: Furrow
Plot size: 1100 feet by 6-36 inch rows
Harvest date: 26 October

Site 2

Cooperators: Tedd and Bob Haas, Bonita, Graham county
Soil type: Tubac sandy loam
Planting date: 9 July 1988 Rate: 75 pounds per acre
Fertilizer: 50 pounds of nitrogen per acre
Herbicide: Trellan and eptam
Insecticide: None

Fungicide: Kocide
 Irrigation: Center pivot
 Plot size: 2600 feet by 6-36 inch rows
 Harvest date: 1 November

Both locations were planted in randomly arranged strip plot designs with check plots between each variety to correct for field variation. Samples were taken to determine percent moisture, seed size and percent dockage. Yields were corrected to 10% moisture basis and also corrected for dockage.

RESULTS AND DISCUSSION

Table 1. Bean yields, percent moisture, percent dockage and seed size by variety for bean varieties grown on the Lunt farm in Greenlee county, 1988.

Variety	Yield (lbs/ac)	Percent Moisture	Percent Dockage	Corr* Yield (lbs/ac)	Weight per 1000 (pounds)
Luna	1683.5	10.0	8.83	1534.9	0.73
UI 114	1594.6	11.2	9.84	1437.8	0.68
Wyoming 167	1537.5	11.0	8.38	1408.7	0.79
UI 126	1416.6	10.9	9.32	1284.6	0.67
UI 129	1378.6	10.9	13.03	1198.9	0.62
Gala	1297.5	11.2	7.66	1198.1	0.68
Olathe	1225.2	10.6	8.30	1123.5	0.75
Nodak	1199.1	11.2	6.81	1117.4	0.75

* These yields are corrected for moisture and dockage.

Luna and UI 114 are the commonly grown varieties in Greenlee county; Luna normally produces the higher yield when conditions are favorable for rust. No disease symptoms were observed on any of the varieties in this test. The season was short, only 99 days from planting to harvest, which probably gave an advantage to the shorter season varieties, like UI 114. However, longer seasoned varieties, such as UI 126 and 129, were just as dry at harvest as UI 114. Seed sizes varied between varieties, but the biggest difference was between the seed sizes in the two locations.

Table 2. Bean yields, percent moisture, percent dockage and seed size by variety for bean varieties grown on the Haas farm in Graham county, 1988.

Variety	Yield (lbs/ac)	Percent Moisture	Percent Dockage	Corr* Yield (lbs/ac)	Weight per 1000 (pounds)
Olathe	3007.3	10.6	12.53	2630.6	0.87
UI 126	2706.8	10.6	6.78	2523.3	1.03
Gala	2766.6	11.8	9.28	2509.9	0.95
Wyoming 167	2745.6	11.3	9.66	2480.4	0.96
Nodak	2782.1	10.2	11.55	2460.7	0.84
UI 129	2679.6	11.2	9.64	2421.3	0.89
UI 114	2606.4	11.2	9.09	2369.4	0.94

Olathe, a variety from Colorado, was the highest-yielding variety even though it had the next to the smallest seed size of all varieties. In Graham County, as in Greenlee, UI 114 is the most popular variety grown. Since UI 114 is at the bottom of the list, varieties are available that will probably out-yield it on a regular basis. In 1981, two trials compared Olathe and UI 114. In one, Parsons, et.al. (2) found that Olathe yielded 1615 pounds per acre, compared with UI 114's 1613. In the other trial, Marcarian, et.al. (3) found that Olathe yielded 1986 pounds per acre and UI 114 yielded 1928 pounds per acre. More investigations will be needed to see if Olathe will continue to yield more than the University of Idaho cultivars, especially the longer-seasoned, large-seeded entry, UI 126.

REFERENCES

1. Marcarian, Victoria, David K. Parsons and Lawrence M. Sullivan. 1984. Forage and Grain, A College of Agriculture Report, University of Arizona, Tucson, AZ. Series P-62, pp. 14-5.
2. Parsons, David K., Gary Cramer and Lawrence M. Sullivan. 1982. Pinto bean variety trial. Forage and Grain, A College of Agriculture Report, University of Arizona, Tucson, AZ. Series P-57, p. 46.
3. Marcarian, Victoria, Lawrence M. Sullivan, Gary Cramer and David K. Parsons. 1982. Dry bean variety test. Forage and Grain, A College of Agriculture Report, University of Arizona, Tucson, AZ. Series P-57, pp. 46-47.