National Dry Bean Nursery Summary, 1992-1995

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Abstract

A yield summary of selected varieties from the National Dry Bean Nursery from 1992 to 1995 are contained in this paper. Average and individual yields vary from year to year depending on the planting dates and the weather of the given year. Looking at a four year average for a variety gives a better estimate of its yield potential than any single year study.

Introduction

In Arizona the acreage of dry beans has increased from 3300 acres to 7100 acres between 1992 and 1995(1). Bean acreages in Graham and Cochise counties may have increased slightly over this period of time, but are fairly stable around 1600 acres. This brings around $800,000 in income to the farmers in the southeastern counties. Beans are also an excellent crop for rotation.. This summary will be of interest to bean growers in the high desert areas of Arizona and New Mexico. These plots were grown in cooperation with the National Cooperative Dry Bean Nurseries which have test sites in 20 locations in the United States and 4 locations in Canada.

Materials and Methods

The trials were replicated small plot study planted within a 125 acre pivot on different fields on the Haas Farm in northern Cochise county and southern Graham county in southeastern Arizona. The plots were planted dry with a John Deere 71 flex-planter modified to accept cone-drop hoppers. After planting the plots were watered up using a center pivot irrigation system. The cultural practices for the plots were the same as the rest of the pivot and are highlighted below.

Crop Histories	1992	1993	1994	1995
Soil type	Tubac SL	Tubac SL	Pima L/Tubac SCL	Sonoita SL
Previous crop	fallow	corn/wheat	barley	corn
Planting date	8 July	16 July	6 July	22 July
Herbicide	treflan/eptam	treflan/eptam	treflan/eptam	treflan/eptam
Fertilizer	120 N 25 P_2O_5	63 N 45 P_2O_5	95 N 76 P_2O_5	56 N 132 P_2O_5
Insecticide	none	none	1X army worms	none
Fungicide	Maneb 3X	Cu based fung. 4X	Cu base fung 3X	none
Irrigation	center pivot	center piv 16 acin	center pivot	center pivot
Harvest date	16 October	29 October	20 October	9 November
Heat units 86/55°F	1677	1595	1940	2207

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The bean plots were cut together with the rest of the bean field and then a subsample was taken from each plot where plants were counted, weighed, threshed with a Vogle-type small plot thresher and bean weights and aerial biomass determined.

Results and Discussions

It is quite often considered that late July plantings will yield less than crops planted in the early part of July. From the data in Table 1 it can be seen that this is an oversimplification. The average yield over all reported varieties in 1995 was higher than those in 1992 and 1993, even though the 1995 plots were planted one to three weeks later than the other two years. The heat units from the crop histories chart help to explain the reason for the high yields in 1995. The higher heat units in 1995 helped to produce a better crop than in 1992 and 1993. The 1994 experiment showed the optimal situation, to plant early and then have a warm season. The very long seasoned varieties, namely the Cranberry varieties, were especially aided by a longer, warmer season.

In Table 1 varieties are ordered by bean type and within bean types they are ordered with the highest average yield at the top. Looking at the pinto bean varieties of interest in southeastern Arizona, Bill-Z is consistently the highest yield variety. Chase, a variety of interest because of its disease resistance, has performed reasonably well, but is not as consistent in its production as the leading variety. This may be because it is slightly longer in maturity than the other pinto varieties.

Many of the varieties of beans produces well in the area. This indicates the potential of growing these varieties if the market areas were to change. These tests will continue under the leadership of Dr. Jim Myers at the University of Idaho at Kimberly.

References

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Table 1. Results of the National Cooperative Dry Bean Nursery in Bonita, Arizona, 1992-1995.

Variety	Source	Yield (pounds/acre)				
		1992	1993	1994	1995	**Average**
			Navy			
Fleetwood	Ag-Canada	2497.0	1844.0	3516.5	2939.8	**2699.3**
Cygnus	Univ. Guelph	1202.1		3196.9	2176.9	**2192.0**
Vista	Gen-Tec Ltd	1476.6	2069.0	3409.3	1722.0	**2169.2**
Gryphon	Univ. Guelph	1330.1		3019.4	1553.3	**1967.6**
			Black			
UI 911	Univ. Idaho			3550.1	1460.9	**2505.5**
Midnight	SUNY	1596.7	1637.0	3040.3	1294.0	**1892.0**
			Red			
UI 239	Univ. Idaho			3537.4	2226.8	**2882.1**
NW 63	USDA-P		1583.0	3501.3	2186.5	**2423.6**
			Pinks			
Viva		2184.9	1899.0	4081.7		**2721.9**
			Pinto			
Bill-Z	CSU	2647.5		4239.6	2985.4	**3290.8**
Othello	USDA-P	2362.6		3760.5	2727.3	**2950.1**
Chase	Univ. Neb.		2274.0	4052.6	2305.4	**2877.3**
Olathe	CSU	2857.2	2122.0	3428.5	2715.9	**2780.9**
			Great Northern			
Alpine	MSU			3542.3	2245.3	**2893.8**
UI 59	Univ. Idaho	2684.3	1927	2951.6	2928.4	**2622.8**
			Light Red Kidney			
CA Early	SVM			3616.0	2080.3	**2848.2**
			Dark Red Kidney			
Montcalm	MSU	1085.2			1628.3	**1356.8**
			Cranberry			
ISB 23	Idaho Sd Bean		1142.0	3107.1	1969.9	**2073.0**
Cardinal	MSU		899.0	3084.7	1333.7	**1772.5**
Average		**1993.1**	**1739.6**	**3479.8**	**2137.8**	**2469.4**