

# Pinto Bean Variety Demonstration in Bonita, Graham County, 1990

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## ***Abstract***

*Nine pinto bean varieties were tested in the Bonita area of Graham county as a follow up to the tests the previous two years. The top yield in 1990 was nearly 1700 pounds per acre compared with 3200 to 3000 for 1989 and 1988, respectively. Late planting, early frost and bean rust all figured into the reduced yields. Additionally, a replicated, small plot test was planted to eleven different species of beans as diverse as garbanzo, lima and kidneys. Yield results and comments on these beans adaptability to the area are included in this report.*

## **Introduction**

High yields and bean prices the past two years have stoked a lot of interest in planting pinto beans in southern Graham and Cochise counties. This interest has brought a wide group of farmers into bean production, some of whom have never produced beans before and others who decided to experiment with planting beans earlier or later than the traditional bean planting time. Experiments were also done with harvesting upright beans directly, with no cutting and windrowing costs and losses. The pinto bean variety demonstration in this report contained two upright varieties to observe their yield potential and the planting date was later than would normally be done.

## **Materials and Methods**

This demonstration was not replicated, however, the field variety was included as a check strip between each other variety. Field variability was then removed from the plot yields using these check strips.

### **Crop History**

Cooperator: Haas Farm  
Soil type: Sandy loam  
Planting date: 28 July 1990, watered up 2 August  
Rate: 70 pounds per acre  
Fertilizer: 160 lbs/ac 11-53-0 at planting  
                  100 lbs N during the season  
Herbicide: Treflan and eptam  
Insecticide: 2 applications of pyrethroids  
Fungicide: 3 applications of fungicide  
Irrigation: Center pivot  
Plot size: 6-30 inch rows 2500 feet long  
Harvest date: 13 November

All plots were harvested with the farmers equipment and individual plots were weighed in a weigh wagon, sampled and then dumped into semi trucks to be taken to the warehouse. The samples were tested for moisture, percent cleanout and seed weights. The yields were corrected to 10% moisture for all varieties.

The crop history of the small plot trial was similar to those listed above except that the plots were planted and harvested by hand. The plots were 2 row wide by 25 feet long, with 4 replications. At harvest time, subplots were collected from these plots and taken to the Safford Agricultural Center where they were hand threshed.

## Results and Discussion

The results of the field demonstration plots are recorded in Table 1. Comparing these yields with yields of the previous two years (1,2), one can tell that conditions were considerably different in 1990. (The top yields in Bonita in 1989 and 1988 were 3250 and 3007 lbs/ac, respectively.) The plots were in the last field planted in the area in 1990 and were two to three weeks after the optimal planting date. Reduced heat units at maturity put a crop planted this late in jeopardy and when coupled with the early frost that occurred in late October, the question arose whether it would be worth while harvesting the entire field. Pods that were immature at the time of the frost produced discolored beans in the case where the beans matured with enough size to be retained by the combine. Olathe had 12% discolored beans which indicates that it is later maturing than the other varieties. There is another complicating factor, however, that of bean rust. Because of the long bean growing season (many acres of early plantings as well as the normal and late plantings) and weather conditions, rust spores were abundant and affected the test field. Othello was hurt badly by the rust and in fact was prematurely defoliated by the rust. This stopped its bean production before the frost and hence it had a very low percentage discolored. Roger's Brothers RB84-350 was known to be a later maturing variety. It was much greener than the other varieties late in the season, partially because of the late maturity and partially because it appeared to be resistant to rust. Flint and Agate were the two upright varieties in the test. They were slightly more upright than the other varieties by the differences were quite subtle. In the fields planted entirely to upright varieties and harvested directly, it was observed that there were still too many low pods on the plants. Losses in these fields appeared to be worse than where beans were knifed, and then harvested.

Plant populations in the hand planted plots was not as consistent as the machine planted parts of the field. Poor stands along with the late planting make it difficult to draw firm conclusions about the yield potentials in the test. It was felt that the top seven types of beans have the potential for production as a double crop bean and should be tried again, but with an earlier planting date. The limas and garbanzo need a much longer season and should not be considered as a double crop option.

As a conclusion to our observations for 1990, we would make the following comments:

Early plantings will likely be harvested during the monsoon season, and will increase the likelihood of rust outbreaks for the later crops.

The upright varieties are not sufficiently tall to prevent bean losses during direct harvest.

Planting later than the middle of July increases the chance of losses or damage from frost.

Field research should continue to find a high yielding pinto bean with rust resistance and/or another type of bean that is adapted to the area that would have a higher profit potential.

## References

1. Clark, L.J., E. Schwennesen and R.E. Cluff. 1990. Pinto Bean Variety Demonstration in Bonita, Graham County, 1989. Forage and Grain, A College of Agriculture Report, The University of Arizona, Tucson, AZ. Series P-84, pp. 102-104.

2. Clark, L.J., E. DeRosa, E. Schwennesen, and R.E. Cluff. 1989. Pinto Bean Variety Trials in Graham and Greenlee Counties, 1988. Forage and Grain, A College of Agriculture Report, The University of Arizona, Tucson, AZ. Series P-79, pp. 71-73.

Table 1. Pinto bean yields, percent moisture, seed size and percent discolored beans by variety for bean varieties grown on the Haas farm in Bonita, 1990.

Variety	Yield <sup>1</sup> (lbs/ac)	Percent Moisture	Weight per 1000sds (lbs)	Percent Discolored
Bill-Z	1538	11.8	0.70	3.3
Agate	1379	12.6	0.83	4.8
Othello	1357	11.0	0.76	1.2
RB84-354	1346	12.4	0.71	4.0
RB84-350	1334	14.1	0.66	5.8
UI 129	1229	11.8	0.77	3.0
Olathe	1196	11.8	0.72	12.0
UI 126	1178	12.4	0.75	1.4
Flint	1057	12.1	0.75	4.0
Average	1290	12.2	0.74	4.4

1. Yields were corrected for dirt cleanout and then converted to 10% moisture.

Table 2. Yields and Comments on the Small Plot Trial.

Variety	Yield	Comments
Isabella LR Kidney	1270	Good growth, some shattering
Small reds	1253	Good stand
Harris Grt Northern	1239	Good growth
Fleetwood Navy	1213	Good growth, look good
Harold Pink	1103	
Black Turtle	1040	Look good
Cranberry	1039	Good vines
Pima Lima	0	Very poor stand, too late maturing
Baby Lima	0	Too late maturing
Garbanzo	0	Good growth, good set, too late
Large Lima	0	Insufficient season to mature