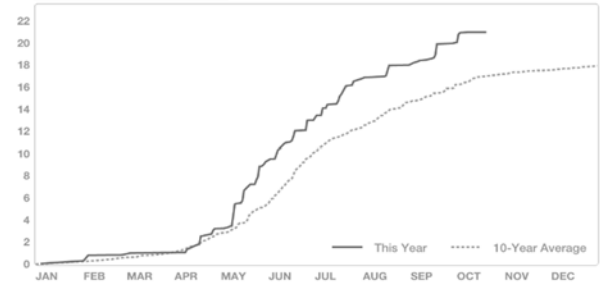


Nebraska On-Farm Research Network

Dry Bean Direct Harvest Variety Study

Study ID: 152013201501
County: Box Butte
Soil Type: Creighton very fine sandy loam; Alliance loam; Duroc loam; Keith loam;
Planting Date: 6/15/15
Harvest Date: 9/17/15
Population: approx. 120,000
Row Spacing (in.) 15
Hybrid: Varies-being studied
Reps: 4
Previous Crop: Corn
Tillage: Disked once and rolled before planting
Herbicides: *Pre:* 30 oz/ac Prowl and 15 oz/ac Outlook *Post:* 4 oz/ac Raptor and 25 oz/ac Basagran
Seed Treatment: Apron XL, Maxim, Rancona, Dynasty
Foliar Insecticides: None
Foliar Fungicides: None

Fertilizer: 40 lbs N
 Note: Desiccant/harvest aid: 25 oz/ac Roundup, 2 oz Sharpen, 10 gallons of 32 N
Irrigation: Pivot, Total: 6"
Rainfall (in.):



Introduction: The purpose of this study was to compare 4 different Pinto bean varieties in a direct harvest bean production system looking at both yield and harvest loss. Traditionally dry beans are harvested in a three step process starting with cutting, then windrowing and finally combining. Direct harvest is simply one pass through the field with the combine. A good upright bean variety, proper level field conditions and a combine header suitable for direct harvest are essential to minimize harvest loss and economically justify direct harvest.

This study evaluated four Pinto bean varieties all suitable for direct harvest. The varieties; Sinaloa, 06206 (Torreón), LaPaz and Monterrey were replicated four times in plots 500 ft by 30 ft. The plots were planted in a randomized complete block design on June 15 with a Case IH 5400 Soybean Drill. Stand counts were taken on June 29 when beans were approximately 3 inches tall. The plots were all fertilized, sprinkler irrigated and treated identically. Roundup and Sharpen were applied Sept. 9 as a pre harvest desiccant. Pod height measurements to determine the percent of pods above 2 inches were taken on Sept 14. Low hanging pods are a major cause of harvest loss in the direct harvest process.

The plots were harvested on Sept. 17 using a Case 7088 combine equipped with a MacDon FD70, 30 ft flex draper head. The center 30 feet of the 40 foot plot was harvested. The harvested plot area was 0.344 acres per treatment per rep. The beans from each plot were weighed using a Par-Kan weigh wagon with a Weigh-Tronix scale. Six square foot counts along the plot area were taken the day of harvest to estimate harvest loss during combining. A sample of beans was taken from each plot and analyzed for quality by Kelley Bean Company in Scottsbluff. All bean samples graded USDA #1, and the moistures were between 11.2 and 12.9%. The dry beans direct harvested in the surrounding field were Pinto variety Sinaloa with an average yield of 41 bu/ac.

Results:	Early Season Stand Count	Pod Height (% pods > 2")	Yield† (bu/ac)	Seeds per lb	Weight (#/bu)	Harvest Loss (bu/ac)	Marginal Net Return‡ (\$/ac)
Monterrey	116,022 A*	93 AB	42 A	1,533 A	61 B	2.3 A	\$504
LaPaz	109,923 AB	95 A	42 A	1,508 AB	61 B	2.6 A	\$504
06206	95,983 C	93 AB	44 A	1,428 B	62 A	2.4 A	\$528
Sinaloa	102,517 BC	92 B	41 A	1,508 AB	62 A	2.6 A	\$492
P-Value	0.0004	0.0893	0.3726	0.0432	0.0066	0.5786	N/A

†Bushels per acre corrected to 14% standard moisture.

*Values with the same letter are not significantly different at a 90% confidence level.

‡Marginal net return based on \$20/cwt (\$12/bu at 60 lb/bu). There was no difference in seed cost for the varieties tested.

Summary: There were no significant yield differences between treatments with yields ranging from 41.3 to 44.4 bu/ac. These are good but not exceptional yields for Western Nebraska. With beans yielding in this range, pinto beans would have to be selling for around \$26.00/ cwt to break even. Pinto beans were selling at \$20 per cwt at harvest. There was not a significant difference in harvest loss which ranged from 2.3 to 2.6 bu/ac. These harvest losses are well within the acceptable range of 2 to 4 bu/ac. Differences in pod height above the soil existed but were not significantly reflected in yield loss. 90% of pods were more than 2 inches above the soil surface for all treatments. Good pod height is very important in minimizing direct harvest loss.



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