

Pod Ceal® for Direct Harvest in Great Northern Beans

Study ID: 0015013202401

County: Box Butte

Soil Type: Valentine sandy loam

Planting Date: 6/10/24

Population: 110,000

Row Spacing (in): 7.5"

Variety: Virgo Great Northern

Reps: 4

Previous Crop: Corn

Tillage: 2x disk, 1 pass finisher w/dry spread fertilizer

Herbicides: **Pre:** 32 oz/ac Roundup PowerMAX® + 2 pt/ac Prowl® H2O + 2 oz/ac AIM® **Post:** Varisto® + Outlook® + Cleo® + Basagran®

Seed Treatment: Apron® + Maxim® + Rancona® + Vibrant® + Crusier®

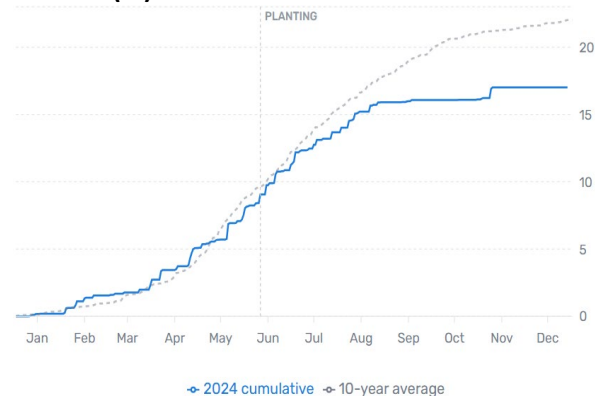
Foliar Insecticides: None

Foliar Fungicides: None

Fertilizer: April 2024: Dry Spread: 125 lbs/ac 11-52-0 MAP, 6.6 lbs/ac Nitrolock® urea, 3.6 lbs/ac manganese 8% LS, 5 lbs/ac Soygreen® granular, 1.4 lbs/ac zinc 10%

Irrigation: Pivot, Total: 8-10"

Rainfall (in):



Introduction: Pod Ceal® by Miller® is a product applied on dry edible beans to reduce moisture intrusion into the pod. The product is a formulation of cyclohexane polymer concentrate, which forms an elastic, semi-permeable membrane on the pods. The intent is to reduce harvest loss due to shelling by preventing pods from popping open during natural wetting and drying prior to harvest. This producer was interested in evaluating Pod Ceal® on pinto beans to determine the impact on yield and harvest loss. Pod Ceal® was applied on September 18, 2024, at a rate of 1 pt/ac, and was compared to an untreated check. Both treatments received a Paraquat® desiccation application on September 18, 2024. The Pod Ceal® treatment and Paraquat® were applied in a tank mix. The field was harvested with a Gleaner® S77 Combine with MacDon® 35 foot FlexDraper® head.

Baseline Soil Samples 0-8" (December 2023):

pH	OM LOI %	Nitrate-N ppm N	P1-Bray ppm P	Sulfur ppm S	K ppm	Ca ppm	Mg ppm	Na ppm	CEC me/100g
7.6	1.0	12	16	10	318	1338	238	54	9.7
7.6	1.5	10	13	10	290	1277	290	59	9.4
7.4	1.3	11	16	8	275	1151	275	53	8.5

Samples from each plot were analyzed for bean quality parameters. Harvest loss estimates were determined by taking counts in one-square-foot frames randomly chosen in the harvested area, but equally representing the left, center, and right side of the header area behind the combine.

Results:

	Harvest Loss (bu/ac) †	Split (%)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ (\$/ac)
Check	2.4 A*	1.8 A	9.3 A	41 A	979 A
Pod Ceal®	2.2 A	1.6 A	9.3 A	41 A	968 A
P-Value:	0.43	0.68	0.49	0.86	0.55

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

†Bushels per acre corrected to 14% moisture.

‡Marginal net return based on \$24/bu at 60 lb/bu for pinto beans and \$14.49/ac for Pod Ceal®.

Summary:

- There were no significant differences for harvest loss, percent splits, moisture, yield or marginal net return between the treatments.
- The addition of Pod Ceal® by Miller® did not significantly improve yield or reduce marginal net return against an untreated check. Furthermore, the addition of Pod Ceal® did not significantly reduce harvest loss. This study design hopes to be repeated in 2025.