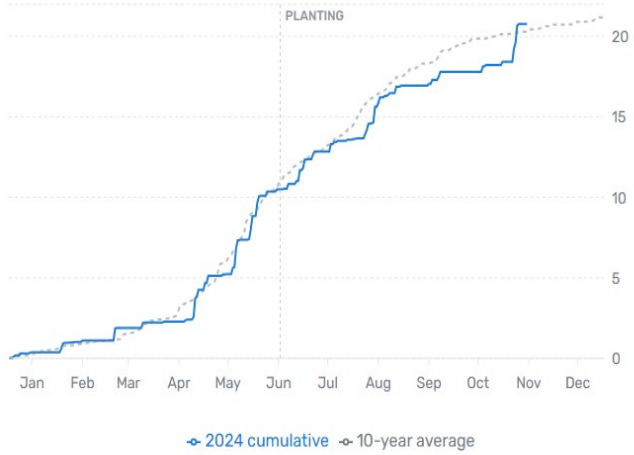
Dry Bean Population Study

Study ID: 1535057202401
County: Dundy
Soil Type: Sarben loamy sand
Planting Date: 6/16/24
Harvest Date: 9/13/24
Population: Varies
Row Spacing (in): 30”
Variety: California Black-Eyed Pea #5
Reps: 4
Previous Crop: Corn
Tillage: No-till
Herbicides: ***Pre:*** 10 oz/ac Latigo® + 1.5 oz/ac flumioxazin + 40 oz/ac glyphosate + 6.4 oz/ac Hellfire®. ***Planting:*** 3 oz/ac Sulfin® +1.3 pts/ac Medal II®+ 40 oz/ac glyphosate + 1 pt/ac Grounded® + 1.5 lbs/ac AMS. ***Post:*** Desiccation: 2 oz/ac Sharpen® + 1.3 pts/ac Paraquat® + 16 oz/ac Firezone®

Seed Treatment: Maxim® + Apron® + Cruiser®
Foliar Insecticides: None
Foliar Fungicides: None
Fertilizer: 5 gal/ac 32%-0-0 UAN, applied at desiccation
Irrigation: None
Rainfall (in):



Introduction: The purpose of this study was to compare three planting rates of Black-Eyed Peas (California #5 variety) planted in 30" row spacing. The target populations in this study were 60,000, 80,000 and 110,000 plants per acre. Due to germination and planter issues these populations were not achieved. Actual populations were determined by early season stand counts and were 44,312, 61,297, and 79,588 plants/ac. To estimate the treatment seeding rate and subsequent seed costs, 10% was added to the stand count values; this resulted in treatment seeding rates of approximately 48,743, 67,427, and 87,547 seeds/ac, and assumes all treatments had similar emergence and germination. 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 side of header, center of header, and right side of header area behind the combine.

Results:

Target Population	Stand Count (plants/ac)	Harvest Loss	Split (%)	Foreign Material (%)	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
60,000	44,312 C*	0.53 A	4.8 A	4.1 A	9.7 A	14 A	468 A
80,000	61,297 B	0.85 A	5.3 A	3.8 A	9.6 A	15 A	501 A
110,000	79,588 A	0.65 A	5.9 A	4.4 A	9.7 A	13 A	415 A
P-Value	<0.001	0.697	0.264	0.84	0.422	0.398	0.2714

*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 $36/bu black-eyed peas, $36.07/ac for 60,000, $49.90/ac for 80,000, and $64.78/ac for 110,000.seeds/ac

Summary:

- There were significant differences between stand counts.
- There were no significant differences in harvest loss, percent split, foreign material, moisture, yield, or marginal net return between treatments.
- Even though germination and planting issues affected the stand counts, there were no significant yield differences between the three target populations. Rainfall was also slightly lower than normal, which could have lowered yields for all three treatments.