

# Dry Bean Market Class Response to Planting Dates, Carrington

Greg Endres, Mike Ostlie and Blaine Schatz

The field study was conducted at the NDSU Carrington Research Extension Center with support from Northarvest Dry Bean Growers Association to examine the response of pinto, navy and black bean to planting dates. Experimental design was a randomized complete block with split-plot arrangement (whole plot = 3 planting dates: May 23, June 5 and 18; sub plots = 3 market classes) with four replications. The dryland experiment was conducted on a conventionally-tilled Heimdal-Emrick loam soil. ‘Lariat’ pinto, ‘Avalanche’ navy and ‘Eclipse’ black bean were planted in 30- inch, 2-row plots. Dates of hand-pulling and seed harvest (plot combine): Planting date 1=September 12 and 15; Planting date 2=September 15 and 18; and Planting date 3=October 3 and 10.

Averaged across market classes, the period from planting to plant emergence ranged from 8 to 11 days and planting to physiological maturity ranged from 93 to 96 days among planting dates (Table 1). Early season plant stand was similar among dates but tended to decrease with delay of planting. Seed yield was similar among planting dates while test weight was greater with planting dates 2 and 3. Across planting dates, pinto stand was 1% less than targeted (70,000 plants/A) while navy and black stands were 6 and 13% less than targeted (90,000 plants/A), respectively. Plant lodging was greatest with the pinto bean.

**Table 1. Dry Bean Market Class Response to Planting Dates (main factors), Carrington**

Treatment	Plant <sup>1</sup>					Seed				
	Physiological			Lodge		Test				
	Emerge	Flower	Stand	Maturity	Lodge	Yield	Weight	Count	Brightness <sup>2</sup>	
	Jday		pl/A	Jday	0-9	lb/A	lb/bu	no./lb	1	2
Planting Date:										
May 23	151	195	79,685	239	2.5	1855	61.5	2142	3.5	3
June 5	167	207	78,800	249	1.0	1795	62.6	1973	3.0	4
June 18	178	218	73,930	267	2.0	1920	62.6	2366	4.5	3
LSD (0.05)	1	1	NS	1	1.0	NS	0.4	NS	0.5	1
Market Class:										
Lariat' Pinto	166	207	69,500	252	4.0	2002	59.9	1251	3.5	3
Avalanche' Navy	165	207	84,220	251	1.0	1875	64.2	2677	3.5	4
Eclipse' Black	165	207	78,685	251	0.0	1693	62.6	2553	3.5	3
LSD (0.05)	1	NS	5,905	NS	1.0	NS	0.4	373	NS	NS
Mean	165	252	77,470	252	1.5	1857	62	2160	3.5	3
C.V. %	0.1	0.6	9.1	0.6	75.6	21.9	0.7	20.5	14.5	24.3

<sup>1</sup> Stand counts taken June 12 for planting date 1 and July 8 for planting dates 2 and 3. Lodge scores (0 = none and 9 = plants flat) taken 8-12 days after physiological maturity.

<sup>2</sup> Brightness visually evaluated on Nov. 26 (1) and Dec. 10 (2) using a scale of 0 = dark and 5 = light for pinto and navy, and 0 = dull and 5 = bright for color of black bean. Ratings also included general seed quality.

Interactions for planting dates and market classes were statistically significant for plant emergence dates and lodge, and seed test weight (Table 2).

**Table 2. Dry Bean Market Class Response to Planting Dates (factor interactions), Carrington**

Planting Date	-----Lariat Pinto-----				----Avalanche Navy----				-----Eclipse Black-----			
	Plant Emerge	Plant Lodge	Seed Yield	Test Weight	Plant Emerge	Plant Lodge	Seed Yield	Test Weight	Plant Emerge	Plant Lodge	Seed Yield	Test Weight
	Jday	0-9	lb/A	lb/bu	Jday	0-9	lb/A	lb/bu	Jday	0-9	lb/A	lb/bu
May 23	151	6	2,006	58.7	151	1	1,999	63.9	151	0	1,560	62.1
June 5	168	2	1,895	59.9	167	1	1,696	64.5	167	0	1,795	63.3
June 18	178	5	2,106	61.1	178	0	1,931	64.3	178	0	1,725	62.4
LSD (0.05)	1	2	NS	0.6	1	NS	NS	0.6	1	NS	NS	0.6