

North Dakota Dry Pea Variety Trial Results for 2016 and Selection Guide

Hans Kandel, Kevin McPhee and Adnan Akyüz (NDSU Main Station); Blaine Schatz, Steve Zwinger and Steve Schaubert (Carrington Research Extension Center); John Rickertsen and Rick Olson (Hettinger Research Extension Center); Bryan Hanson, Travis Hakanson and Lawrence Henry (Langdon Research Extension Center); Jerry Bergman, Gautam Pradhan, Austin Link, Emma Link, Tyler Tjelde and Justin Jacobs (Williston Research Extension Center); Thomas Stefaniak (North Central Research Extension Center, Minot); Glenn Martin (Dickinson Research Extension Center)

Acknowledgments

Research specialists and technicians helped with the field work and data compilation. The assistance given by many secretaries in typing respective portions of this document is very much appreciated. A special thank you goes to Lisa Johnson, Extension Plant Sciences, for assisting in the compilation of this publication.

List of Figures and Tables

- Figure 1. North Dakota Dry Pea Harvested Acreage, 1999 to 2016.
- Figure 2. North Dakota Dry Pea Yield in Bushels per Acre, 1999 to 2015.
- Table 1. April-September 2016 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.
- Table 2. 2016 Dry Pea Description and Yield of Selected Yellow and Green Cotyledon Varieties.
- Table 3. 2016 Locations Where Pea Varieties Were Tested.
- Table 4. 2016 Dry Pea - Organic - Carrington.
- Table 5. 2016 Dry Pea - Langdon.
- Table 6. 2016 Dry Pea - Minot.
- Table 7. 2016 Dry Pea - Recrop - Dickinson.
- Table 8. 2016 Dry Pea - Williston.
- Table 9. 2016 Dry Pea - Irrigated (Williston REC).
- Table 10. 2016 Dry Pea - McKenzie County (Williston REC).
- Table 11. 2016 Dry Pea - Golden Valley County (Williston REC).
- Table 12. 2016 Dry Pea - Divide County (Williston REC).
- Table 13. 2016 Dry Pea - Hettinger.

Introduction

Field pea fits well into small-grain rotations. The green- and yellow-seeded varieties are used for human consumption as dry split peas. Field peas also are used as protein concentrates for livestock and pigeon feeds. Field pea stems grow to a length of 33 to 36 inches, and the plant reaches its maximum height at the early pod-fill stage. A cool growing season (a mean temperature of 55 to 65 degrees) is necessary for optimum pea yields. Hot weather during flowering may result in a reduced seed set.

NDSU EXTENSION
SERVICE

NDSU NORTH DAKOTA AGRICULTURAL
EXPERIMENT STATION

Fargo, North Dakota

November 2016

In North Dakota, field pea takes about 60 days from seeding until flowering and 90 to 100 days to maturity. The moisture requirement for field pea is similar to that for cereal grains. Field pea can be grown on a wide range of soil types, but drainage must be adequate because field pea does not tolerate saturated or soggy conditions. Field pea can be grown in a no-tillage or conventional-tillage cropping system. Field pea grows best when seeded into a weed-free seedbed and fertile soils. Land preparation for seeding is similar to that of wheat.

To obtain good soil-to-seed contact, seedbeds should be firm. Avoid seedbeds with large clods. Do not work the soil too finely because subsequent soil crusting following rains may cause poor emergence. Drill the seeds 2 to 3 inches deep in narrow rows (less than 10 inches apart) as early in the spring as possible. The soil should not be excessively wet at seeding.

Seeding can be done with an air seeder or grain drill. Adjust the seeder to prevent cracking of the seed, especially with the large-seeded varieties because cracked seed will not germinate. Do not pack or roll immediately after seeding if the soil moisture is high because excess compaction or crusting can occur.

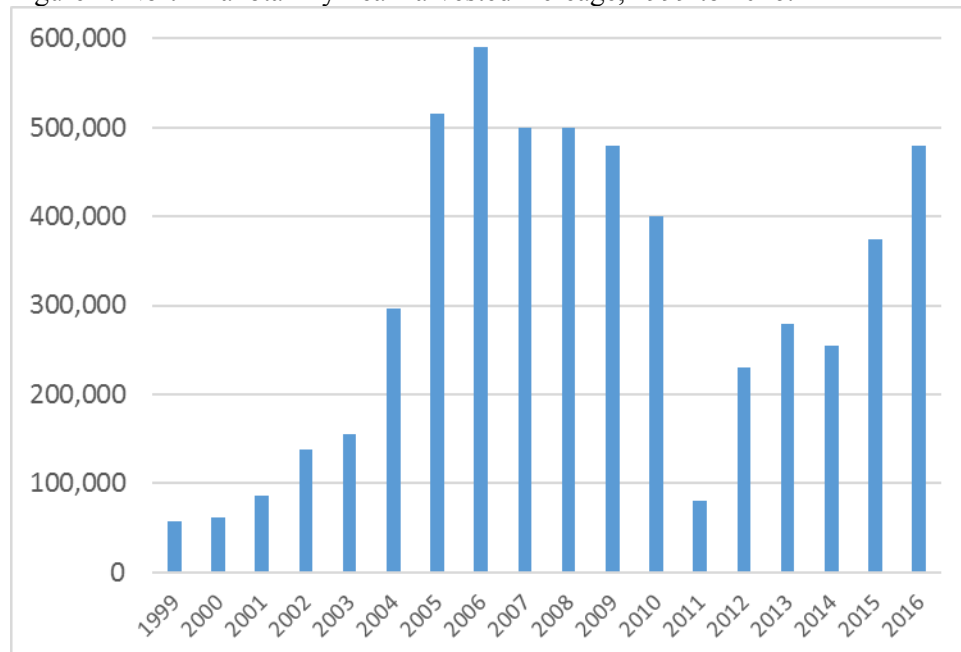
Pea seedlings can withstand considerable frost. Even if the frost is severe enough to kill the main shoot, the pea plant will regrow from buds at one of the nodes at or below the soil surface. However, this will delay plant maturity. The pea seed germination rate increases with increasing temperatures, but at temperatures greater than 64 degrees, the percentage of seed germination decreases.

Field peas are capable of utilizing bacterially fixed atmospheric nitrogen. The specific bacterial association for nitrogen fixation in field peas and lentils is with the bacterium *Rhizobium leguminosarum*, which is a different bacteria species than is used for soybean inoculation. If field peas are to be grown in a field for the first time or no peas were grown there recently, inoculating the seed with the proper *Rhizobium* bacteria prior to planting may be needed to ensure nodulation.

Treating the seed with a fungicide can improve emergence and plant establishment significantly. Fungicide labels should be checked to see if a particular fungicide can be used on field pea.

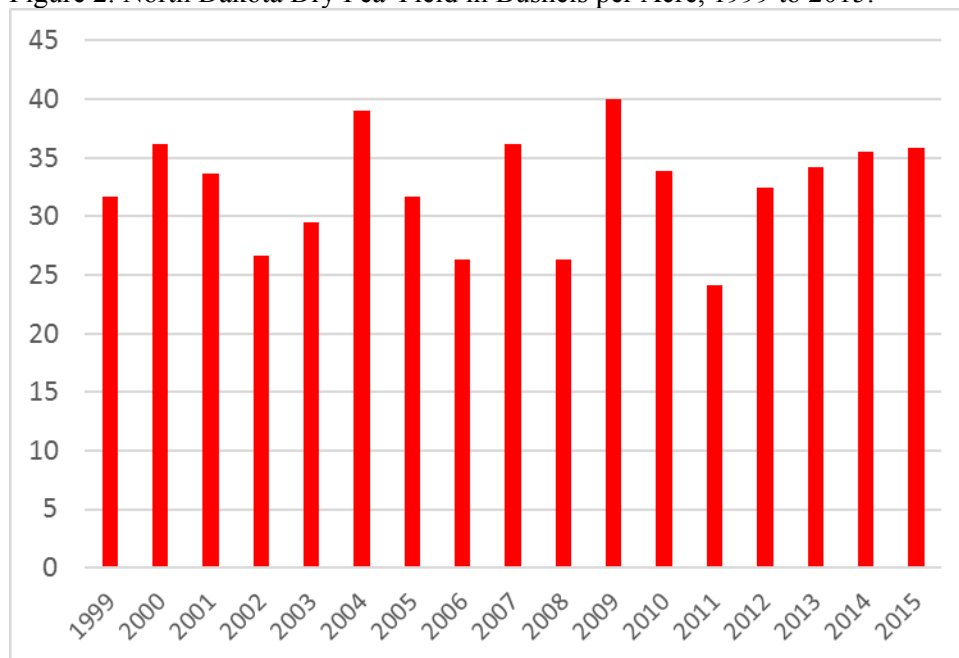
Having level ground is critical for easy harvesting. Stony fields should be avoided or rolled after seeding to bury loose stones that might be picked up during swathing and harvesting. For more production information, see publication A1166, "Field Pea Production" (www.ag.ndsu.edu/publications/crops/field-pea-production). Dry pea planted acres and yield have fluctuated during the past 18 growing seasons as shown in Figure 1 and 2.

Figure 1. North Dakota Dry Pea Harvested Acreage, 1999 to 2016.



Source: North Dakota Agricultural Statistics Service – USDA.

Figure 2. North Dakota Dry Pea Yield in Bushels per Acre, 1999 to 2015.



Source: North Dakota Agricultural Statistics Service – USDA.

2016 Dry Pea Performance Trials

Variety trial data from all NDSU Research Extension Centers for all crops can be found at www.ag.ndsu.edu/varietytrials/. Weather data are provided in Table 1.

Table 1. April-September 2016 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.

City	Temperature Ranking	Precipitation Ranking
Bowman	59.9 F (39th Warmest Period Since 1915)	13.4 inches (34th Wettest Period Since 1915)
Bismarck	61.9 F (28th Warmest Period Since 1875)	18.7 inches (11th Wettest Period Since 1875)
Cavalier	58.1 F (43rd Warmest Period Since 1934)	27.6 inches (The Wettest Period Since 1927)
Fargo	63.1 F (8th Warmest Period Since 1881)	16.1 inches (66th Wettest Period Since 1881)
Minot Exp. Station	59.8 F (24nd Warmest Period Since 1905)	15.4 inches (37th Wettest Period Since 1905)
Williston Exp. Station	61.7 F (11th Warmest Period Since 1894)	12.0 inches (44th Wettest Period Since 1894)
North Dakota Average	60.0 F (25th Warmest Period Since 1895)	17.4 in. (12th Wettest Period Since 1894)

Source: Adnan Akyüz, NDSU, North Dakota state climatologist.

¹Statewide values are calculated based on all available locations in North Dakota rather than the mathematical average of the list above.

The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The LSD (least significant difference) numbers beneath the columns in the tables are derived from the statistical analyses and only apply to the numbers in the column in which they appear. If the difference between two varieties exceeds the LSD value, it means that with 95 or 90 percent probability (LSD 0.05 or 0.10), the higher-yielding variety has a significant yield advantage. If the difference between two varieties is less than the LSD value, then the variety yields are considered similar.

The abbreviation NS is used to indicate no significant difference for that trait among any of the varieties. The CV is a measure of variability in the trial. The CV stands for coefficient of variation and is expressed as a percentage. Large CVs mean a large amount of variation that could not be attributed to differences in the varieties. In the tables, the “mean” indicates the average of the observations in the column.

The abbreviation PM stands for physiologically mature. Physiological maturity is reached when the bottom 75 percent of the pods have turned yellow to brown. At this time, the upper 25 percent of the pods will be a dull green, with the pod surface no longer succulent.

Yields are reported at 15 percent moisture content. The standard for reporting protein in field pea is at 0 percent moisture. The harvest index reflects the plant height at the time of harvest relative to plant height at the end of bloom (maximum plant height). The harvest ease score is taken at the time the plants are dried sufficiently to allow threshing or harvesting to occur. Harvest ease is an assessment of combining efficiency. The lower the score, the easier the operator will be able to get the cutter bar underneath the lowest pods and make decent travel speed through the field.

In the tables, the dry pea varieties are arranged in alphabetical order within market class (yellow and green cotyledon types). Footnotes provide more details for the table under which they appear. Characteristics to evaluate for selecting a dry pea variety include market class, yield potential in your area, test weight, reaction to problematic diseases and maturity date.

When selecting a high-yielding and good-quality variety, use data that summarize several years and locations. Table 2 provides information on a core group of varieties that were included in most locations. Choose the variety that, on average, performs the best at multiple locations near your farm during several years.

Presentation of data for the varieties tested does not imply approval or endorsement by the authors or agencies conducting the test. North Dakota State University approves the reproduction of any table in this publication only if no portion is deleted, appropriate footnotes are given, the order of the data is not rearranged and NDSU is given credit for conducting the trial.

Table 2. 2016 Dry Pea Description and Yield of Selected Yellow and Green Cotyledon Varieties.

Variety	Vine Length	Harvest Ease	Powdery			2012 Avg.	2013 Avg.	2014 Avg.	2015 Avg.	2016 Avg.
			Mildew Tolerance	Maturity	Seed Size	Yield 15 Locations ¹	Yield 7 Locations ²	Yield 10 Locations ³	Yield 10 Locations ⁴	Yield 8 Locations ⁵
						(bu/a)	(bu/a)	(bu/a)	(bu/a)	(bu/a)
Yellow Cotyledon Type										
Agassiz	Tall	Good	Good	Medium	Medium	50.3	56.3	54.0	56.2	45.6
CDC Meadow	Medium	Good	NA ⁶	Medium	Med. Small	--	51.6	54.2	58.5	--
DS Admiral	Medium	Good	Good	Early/Med.	Medium	49.3	47.6	51.1	55.8	41.4
Spider	Medium	Fair	Good	Medium	Medium	--	--	--	--	40.0
Green Cotyledon Type										
Arcadia	Medium	Good	Good	Early/Med.	Medium	--	--	--	--	40.5
CDC Striker	Medium	Good	Poor	Medium	Medium	51.4	46.1	48.4	57.7	40.1
Cruiser	Medium	Fair	Poor	Medium	Small	44.3	45.4	46.6	49.7	34.6
Majoret	Medium	Fair	Poor	Medium	Medium	44.3	48.4	48.1	50.6	--
Mean						48.2	49.2	50.6	54.8	40.4
CV%						7.9	9.1	9.6	7.1	12.9
LSD 0.05						--	--	--	3.5	5.3
LSD 0.10						2.3	4.1	3.6	2.9	4.4

¹These varieties appeared in all the locations reported in the 2012 publication except for Carrington Forage/Cover Crop.

²These varieties appeared in all the locations reported in the 2013 publication except Tables 10, 11 and 14.

³These varieties appeared in all the locations reported in the 2014 publication except Table 9.

⁴These varieties appeared in all the locations reported in the 2015 publication except Table 6.

⁵These varieties appeared in all the locations reported in the 2016 publication except Table 4, which was not used, and Table 10.

⁶NA is not available.

Table 3. 2016 Locations Where Pea Varieties Were Tested.

Pea Variety	Carrington Organic	Langdon	Minot	Dickinson	Williston	Williston Irrigated	McKenzie	Golden Valley	Divide	Hettinger
Yellow Cotyledon Type										
AAC Carver	--	X	X	--	X	--	--	--	--	--
Abarth	--	X	X	--	X	--	--	--	--	X
AC Earlstar	--	X	X	--	X	--	--	--	--	--
Agassiz	X	X	X	X	X	X	X	X	X	X
Bridger	--	X	X	--	X	--	--	--	--	X
CDC Amarillo	--	X	X	--	X	--	--	--	--	--
CDC Saffron	--	X	X	--	X	--	--	--	--	--
Cooper	--	--	--	--	--	X	--	--	--	--
DS Admiral	X	X	X	X	X	X	X	X	X	X
Durwood	--	--	--	--	X	--	--	--	--	X
Golden	--	--	--	--	--	X	--	--	--	--
Gunner	--	--	--	--	--	--	--	--	--	X
Hyline	--	X	X	--	X	--	--	--	--	X
Jetset	--	X	X	--	X	--	--	--	--	--
Korando	--	--	--	--	X	X	--	--	--	--
Majestic	--	--	X	--	X	--	--	--	--	--
Midas	--	--	X	--	--	--	--	--	--	--
Mystique	--	X	--	--	--	X	X	X	X	X
Navarro	--	X	X	--	X	--	--	--	--	X
Nette 2010	X	X	--	--	X	--	--	--	--	X
Salamanca	--	X	X	--	X	--	--	--	--	X
Spider	X	X	X	X	X	X	X	X	X	X
SW Midas	--	--	--	--	--	--	--	--	--	X
Vegas	--	--	X	--	--	X	--	--	--	--
Green Cotyledon Type										
Aragorn	--	--	--	--	--	X	--	--	--	--
Arcadia	X	X	X	X	X	X	--	X	X	X
Bluemoon	--	--	X	--	--	X	--	--	--	--
CDC Patrick	--	X	X	--	X	--	--	--	--	--
CDC Raezer	--	X	X	--	X	--	--	--	--	--
CDC Striker	X	X	X	X	X	X	X	X	X	X
Cruiser	X	X	X	X	X	X	X	X	X	X
Greenwood	--	--	--	--	--	X	--	--	--	--
K2	--	--	--	--	X	X	--	--	--	X
Matrix	X	--	--	--	--	--	--	--	--	--
Nette	--	--	--	X	--	--	--	--	--	--
Viper	--	--	X	--	X	X	--	--	--	X

Table 4. 2016 Dry Pea - Organic - Carrington - Authors, S. Zwinger and S. Schaubert.

Variety	Days to Flower Flower (DAP) ⁴	Flower Duration (days)	Days to PM (DAP) ⁴	Canopy Height ¹ (inch)	Seeds/ Pound	Plant Lodge ² (0-9)	1,000 Seed Weight (gram)	Seed Protein (%)	Test Weight (lb/bu)	Seed Yield	
										2016 ³ ----- (bu/a)	3-yr. Avg.
Yellow Cotyledon Type											
Agassiz	50	12	81	19	2,292	2	198	27.6	59.6	28.6	45.0
DS Admiral	49	10	76	18	2,084	1	218	26.0	60.7	24.2	39.7
Nette 2010	48	12	73	17	2,149	1	211	25.0	60.6	32.9	50.3
Spider	51	12	86	18	2,078	2	219	26.9	60.9	14.5	--
Green Cotyledon Type											
Arcadia	49	11	77	8	2,315	9	196	26.3	58.8	31.5	--
CDC Striker	49	10	77	10	2,348	8	193	26.4	59.3	30.7	39.8
Cruiser	49	13	75	15	2,383	6	191	26.0	59.4	28.5	37.3
Matrix	54	5	85	16	1,936	3	235	26.2	60.7	28.7	--
Mean	50	11	79	15	2,198	4	208	26.3	60.0	27.4	42.4
CV %	1.4	9.0	2.0	10	2.8	26	2.7	1.5	0.7	17.3	--
LSD 0.05	0.9	1.4	2.2	2.6	85	1.1	7.8	0.6	0.6	7.1	--
LSD 0.10	1.1	1.6	2.7	3.1	102	1.4	9.3	0.7	0.7	8.6	--

Planted: April 29. Harvested: July 25. Previous crop: einkorn. This trial received hail damage on July 9.

¹Height to the top of the canopy at harvest.

²Lodging: 0 = none, 9 = lying flat on the ground.

³The experiment had some hail damage.

⁴DAP = Days after planting.

Table 5. 2016 Dry Pea - Langdon - Authors, B. Hanson, T. Hakanson and L. Henry.

Variety	Days to Flower Flower (DAP) ⁴	Flower Duration (days)	Vine Length (inch)	Canopy Height ¹ (inch)	Height Index ² (%)	Harvest Ease ³ (0-9)	1,000 Seed Weight (gram)	Test Weight (lb/bu)	Seed Yield		
									2016 ----- (bu/a)	2-yr. Avg.	3-yr. Avg.
Yellow Cotyledon Type											
AAC Carver	56	23	34	20	59	6	181	63.5	38.9	--	--
Abarth	55	22	36	17	47	6	187	63.0	35.6	--	--
AC Earlystar	54	25	37	18	49	6	172	63.4	46.9	--	--
Agassiz	53	25	36	18	49	7	169	62.5	40.0	58.6	65.8
Bridger	52	25	36	18	50	6	186	63.7	46.8	61.7	--
CDC Amarillo	57	23	36	21	59	6	179	63.7	38.8	60.6	--
CDC Saffron	56	20	37	18	49	7	183	63.5	43.8	61.2	--
DS Admiral	54	22	34	16	47	6	174	63.5	50.1	65.6	68.0
Hyline	55	24	35	17	48	7	183	63.4	36.2	--	--
Jetset	54	20	35	20	55	5	204	63.1	56.9	--	--
Mystique	55	23	36	17	49	7	207	62.7	34.8	59.2	62.5
Navarro	49	25	36	15	42	8	231	63.7	47.0	--	--
Nette 2010	52	21	33	14	42	7	180	64.0	49.6	64.5	69.8
Salamanca	56	22	36	17	49	7	207	62.7	44.4	--	--
Spider	56	25	35	16	43	7	197	62.1	42.8	--	--
Green Cotyledon Type											
Arcadia	54	20	35	12	34	8	160	62.9	44.3	--	--
CDC Patrick	56	23	33	19	59	6	141	62.8	31.5	--	--
CDC Raezer	55	20	36	17	48	6	172	63.5	47.8	--	--
CDC Striker	55	20	34	12	37	8	145	62.2	42.7	63.0	65.9
Cruiser	53	24	35	15	43	8	165	62.5	28.6	49.5	58.8
Mean	54	23	35	17	48	7	181	63.1	42.4	60.4	65.2
CV %	1.1	7.1	6.7	16	18	16	5.5	1.2	12	--	--
LSD 0.05	0.9	2.3	NS	3.7	12.1	1.5	20.8	1.1	7.0	--	--
LSD 0.10	0.7	1.9	NS	3.1	10.1	1.3	17.2	0.9	5.8	--	--

Planted: May 3. Harvested: Aug. 12.

¹Height to the top of the canopy at harvest.

²Height Index: Calculated as the ratio of canopy height/plant height.

³Harvest Ease: 0 = all plants upright (very easy harvest) to 9 = all plants flat (very difficult to direct harvest).

⁴DAP = Days after planting.

Table 6. 2016 Dry Pea - Minot - Authors, K. McPhee and T. Stefaniak.

Variety	Days to Flower	Days to PM	Seeds/ Pound	1,000		Seed Yield			
				Seed Weight	Test Weight	2016	2-yr. Avg.	3-yr. Avg.	
	(DAP) ¹	(DAP) ¹		(gram)	(lb/bu)	------(bu/a)-----			
Yellow Cotyledon Type									
AAC Carver	53	87	1,827	249	64.2	44.0	51.1	--	--
Abarth	53	89	1,720	264	62.9	55.8	--	--	--
AC Earlystar	52	88	2,323	197	63.5	55.4	54.2	46.3	
Agassiz	52	90	1,999	228	63.2	55.7	53.8	49.2	
Bridger	50	89	1,972	230	64.1	46.9	37.8	--	
CDC Amarillo	55	91	2,034	224	63.9	49.2	51.9	--	
CDC Saffron	54	89	1,902	240	64.1	54.9	57.2	--	
DS Admiral	50	87	1,925	236	63.5	55.0	51.5	44.4	
Hyline	52	90	1,973	231	63.7	47.0	52.5	43.8	
Jetset	50	87	1,808	251	63.2	46.9	49.6	43.7	
Majestic	54	90	1,753	259	63.6	50.7	--	--	
Midas	52	90	2,216	206	63.3	43.8	--	--	
Navarro	48	89	1,624	285	62.6	44.1	47.6	41.6	
Salamanca	52	89	1,821	251	63.1	56.6	50.6	41.9	
Spider	54	93	2,100	217	63.4	41.4	50.9	42.5	
Vegas	51	88	1,874	242	63.3	44.9	47.6	42.3	
Green Cotyledon Type									
Arcadia	51	86	2,057	221	62.0	47.1	37.9	--	
Bluemoon	52	88	1,850	246	64.1	52.1	55.4	45.4	
CDC Patrick	53	90	2,439	189	63.9	46.0	--	--	
CDC Raezer	51	89	1,972	230	63.4	50.1	--	--	
CDC Striker	51	88	2,174	209	62.9	49.5	50.8	44.3	
Cruiser	53	89	2,167	210	63.0	43.0	47.7	41.8	
Viper	51	88	1,960	233	62.5	39.6	33.4	--	
Mean	52	89	1,978	233	63.4	48.7	49.0	43.9	
CV %	2.8	1.7	6	6	1.4	27	--	--	
LSD 0.05	2	2	147	17	1.0	14.9	--	--	
LSD 0.10	1	1	114	13	0.8	11.6	--	--	

Planted: April 30. Harvested: Aug. 13. Previous crop: hard red spring wheat.

¹DAP = Days after planting.**Table 7. 2016 Dry Pea - Recrop - Dickinson - Author, G. Martin.**

Variety	Days to Flower	Days to PM	Vine Length	Canopy Height ¹	Height Index ²	Seeds/ Pound	1,000 Seed Weight	Test Weight	Seed Yield	
									2016	3-yr. Avg.
	(DAP) ²	(DAP) ²	(inch)	(inch)	(%)		(gram)	(lb/bu)	------(bu/a)-----	
Yellow Cotyledon Type										
Agassiz	58	88	16	15	90	1,924	236	63.4	31.2	49.0
DS Admiral	58	88	16	15	93	1,886	241	64.4	29.7	45.6
Spider	61	95	20	17	88	1,676	271	63.3	22.6	--
Green Cotyledon Type										
Arcadia	58	87	15	13	86	2,062	220	63.2	30.3	--
CDC Striker	58	87	15	13	87	2,074	219	63.0	28.4	44.3
Cruiser	58	87	17	14	84	2,256	201	63.6	26.7	42.1
Nette	58	88	17	15	88	1,922	236	63.7	27.9	--
Mean	58	89	16	14	88	1,971	232	63.5	28.1	45.3
CV %	0.3	0.2	6.7	5.7	6.5	3.0	2.9	2.2	7.4	--
LSD 0.05	0.3	0.3	1.6	1.2	9	88	10.0	2.0	3.1	--
LSD 0.10	0.2	0.2	1.4	1.0	7	73	8.3	1.7	2.6	--

Planted: April 14. Harvested: July 22. Previous crop: rye.

¹Height to the top of the canopy at harvest.²Height Index: Calculated as the ratio of canopy height/plant height.³DAP = Days after planting.

Table 8. 2016 Dry Pea - Williston - Authors, J. Bergman, G. Pradhan, A. Link and E. Link

Variety	Days to	Days to	Canopy	1,000 Seed	Seed	Test	Seed Yield		
	Flower (DAP) ²	PM (days)	Height ¹ (inch)	Weight (gram)	Protein (%)	Weight (lb/bu)	2016	2-yr. Avg.	3-yr. Avg.
							------(bu/a)-----		
Yellow Cotyledon Type									
AAC Carver	60	91	17	251	20.0	62.8	44.1	--	--
Abarth	60	92	17	257	22.6	60.7	40.4	34.6	38.6
AC Earlstar	59	91	17	232	21.3	62.3	45.6	--	--
Agassiz	60	94	17	253	20.8	62.0	44.7	40.7	44.1
Bridger	62	92	16	226	23.1	62.5	38.8	34.7	38.3
CDC Amarillo	60	93	19	261	20.8	62.9	43.8	37.3	--
CDC Saffron	60	92	17	270	22.1	62.4	45.8	38.0	--
DS Admiral	60	90	17	254	22.6	62.3	37.7	35.3	40.6
Durwood	59	93	19	265	21.5	62.2	43.1	39.0	41.4
Hyline	62	92	16	252	20.4	62.6	44.5	40.4	42.1
Jetset	60	92	16	244	24.3	61.0	35.1	--	--
Korando	60	94	17	294	24.3	62.2	40.3	34.9	39.2
Majestic	61	92	20	266	23.2	61.2	38.8	--	--
Navarro	58	94	16	291	21.9	62.6	37.2	--	--
Nette 2010	59	94	17	257	22.0	62.9	37.5	31.6	38.2
Salamanca	61	92	18	261	22.5	62.0	42.7	--	--
Spider	60	95	20	259	22.5	63.2	43.1	--	--
Green Cotyledon Type									
Arcadia	59	91	12	228	22.8	61.5	39.4	36.7	41.3
CDC Patrick	60	92	16	190	20.7	62.2	39.6	--	--
CDC Raezer	61	93	17	235	22.0	60.7	33.0	--	--
CDC Striker	58	91	14	226	22.4	61.3	39.6	38.8	40.8
Cruiser	59	90	14	198	22.1	61.1	37.8	33.2	37.2
K2	60	93	16	230	22.4	61.7	38.8	--	--
Viper	60	93	17	257	24.0	60.9	34.1	--	--
Mean	60	92	17	248	22.2	62.0	40.2	36.5	40.2
CV %	2	1	8.5	3.4	2.8	0.8	8.7	--	--
LSD 0.05	2	1	2.0	11.9	0.9	0.7	4.9	--	--
LSD 0.10	2	1	1.7	10.0	0.7	0.6	4.1	--	--

Planted: April 22. Harvested: Aug. 5. Previous crop: barley.

¹Height to the top of the canopy at harvest.²DAP = Days after planting.

Table 9. 2016 Dry Pea - Irrigated (Williston REC) - Authors, J. Bergman, T. Tjelde and J. Jacobs.

Variety	Days to	Days	Canopy	Vine	Plant	Seed	1,000 Seed	Test	Seed Yield	
	Flower	to PM	Height	Length	Lodge	Protein	Weight	Weight	2016	3-yr. Avg.
	(DAP) ¹	(DAP) ¹	(inch)	(inch)	(0-9)	(%)	(gram)	(lb/bu)	------(bu/a)-----	
Yellow Cotyledon Type										
Agassiz	56	92	20	22	1	26.5	277	64.3	66.5	61.3
Cooper	58	97	20	21	1	28.4	283	64.1	61.7	--
DS Admiral	57	85	21	23	1	28.1	255	63.9	45.6	55.6
Golden	57	89	19	20	1	28.1	235	64.7	53.1	--
Korando	53	90	24	25	1	29.7	289	63.8	56.6	--
Mystique	56	95	23	24	2	27.5	277	64.8	61.0	--
Spider	58	93	21	24	1	26.2	246	64.9	59.6	--
Vegas	54	88	21	21	1	28.1	249	64.2	55.2	--
Green Cotyledon Type										
Aragorn	53	84	16	20	3	27.0	263	63.0	50.3	--
Arcadia	56	87	19	20	1	25.8	250	64.4	60.4	--
Blue Moon	57	92	18	20	1	28.2	262	64.2	48.3	--
CDC Striker	57	86	17	18	1	24.9	241	64.4	62.1	64.8
Cruiser	55	87	17	22	2	26.5	255	63.9	52.2	52.5
Greenwood	56	86	19	22	2	24.3	223	64.1	53.9	--
K2	56	90	19	20	1	27.9	251	63.9	51.4	--
Viper	56	87	21	23	1	28.6	228	63.8	43.6	--
Mean	56	89	20	22	1	27.2	255.0	64.2	55.1	58.6
CV %	2.0	3.4	11.4	10.4	39.1	2.9	4.8	0.7	10.5	10.9
LSD 0.05	1.6	4.4	3.2	3.2	0.8	1.1	17.6	0.6	8.3	11.8
LSD 0.10	1.3	3.6	2.7	2.7	0.7	0.9	14.7	0.5	6.9	9.4

Planted: April 22. Harvested: Aug. 1. Previous crop: barley.

¹DAP = Days after planting.**Table 10. 2016 Dry Pea - McKenzie County (Williston REC) - Authors, J. Bergman, G. Pradhan, A. Link and E. Link.**

Variety	Seed	1,000 seed	Test	Seed Yield	
	Protein	Weight	Weight	2016	3-yr. Avg.
	(%)	(gram)	(lb/bu)	------(bu/a)-----	
Yellow Cotyledon Type					
Agassiz	24.8	235	58.1	23.9	31.3
DS Admiral	24.8	238	58.1	16.6	33.7
Mystique	26.2	225	56.7	27.7	34.6
Spider	26.1	247	58.1	26.2	--
Green Cotyledon Type					
CDC Striker	24.9	206	58.1	12.2	29.8
Cruiser	25.4	199	57.5	11.5	26.2
Mean	25.4	225	57.8	19.7	31.1
CV %	2.2	4.6	0.7	24.4	--
LSD 0.05	1.0	18.6	0.7	8.1	--
LSD 0.10	0.8	15.3	0.6	6.6	--

Planted: May 9. Harvested: Aug. 23. Previous crop: spring wheat.

Table 11. 2016 Dry Pea - Golden Valley County (Williston REC) - Authors, J. Bergman, G. Pradhan, A. Link and E. Link.

Variety	Seed	1,000 Seed	Test	Seed Yield	
	Protein	Weight	Weight	2016	3-yr. Avg.
	(%)	(gram)	(lb/bu)	------(bu/a)-----	
Yellow Cotyledon Type					
Agassiz	27.6	214	59.3	53.3	43.4
DS Admiral	26.2	201	59.7	50.6	39.7
Mystique	27.8	197	58.7	43.9	32.5
Spider	27.4	213	59.8	49.8	--
Green Cotyledon Type					
Arcadia	27.0	158	59.5	44.6	--
CDC Strikes	27.4	153	59.4	30.2	34.3
Cruiser	28.9	185	58.8	34.5	30.1
Mean	27.5	189	59.3	43.8	36.0
CV %	3.7	9.4	0.5	10.3	--
LSD 0.05	NS	31.7	0.5	8.1	--
LSD 0.10	NS	26.0	0.4	6.7	--

Planted: May 17. Harvested: Aug. 31. Previous crop: spring wheat.

Table 12. 2016 Dry Pea - Divide County (Williston REC) - Authors, J. Bergman, G. Pradhan, A. Link and E. Link

Variety	Seed Protein (%)	1000 Seed weight (gram)	Test Weight (lb/bu)	Seed Yield	
				2016	3-yr. Avg.
Yellow Cotyledon Type					
Agassiz	17.7	193	59.1	52.6	43.5
DS Admiral	14.6	191	60.9	44.0	41.9
Mystique	23.6	209	58.5	51.0	--
Spider	16.6	193	59.6	44.5	--
Green Cotyledon Type					
Arcadia	15.1	173	59.2	40.0	--
CDC Striker	15.7	171	58.8	52.5	46.8
Cruiser	18.6	147	59.1	39.4	35.2
Mean	17.4	182	59.3	46.3	41.9
CV %	6.1	5.4	0.6	9.2	--
LSD 0.05	1.9	17.0	0.6	7.1	--
LSD 0.10	1.5	14.0	0.5	5.8	--

Planted: April 28. Harvested: Aug. 29. Previous crop: soybean.

Table 13. 2016 Dry Pea - Hettinger - Authors, J. Rickertsen and Rick Olson.

Variety	Days to Flower (DAP) ⁵	Flower Duration (days)	Days to PM (DAP) ⁵	Vine Length ¹ (inch)	Canopy Height ² (inch)	Height Index ³ (%)	Lodge ⁴ (0-9)	Seed Protein (%)	1,000 Seed Weight (gram)	Seeds/Pound	Test Weight (lb/bu)	Seed Yield	
												2016	3-Yr. Avg.
Yellow Cotyledon Type													
Abarth	61	11	85	18	18	99	5	25.2	239	1,898	59.5	18.2	--
Agassiz	61	12	87	20	17	89	3	26.5	215	2,110	56.3	20.5	41.4
Bridger	60	12	85	20	18	91	4	26.2	208	2,181	60.3	18.5	42.5
DS Admiral	60	11	86	20	15	73	4	26.3	206	2,227	59.9	19.0	44.1
Durwood	61	12	87	22	15	67	3	26.7	230	1,982	58.4	22.2	--
Gunner	61	12	87	22	17	76	4	27	219	2,074	58.9	24.2	42.1
Hyline	61	12	87	19	15	81	6	25.3	229	1,981	58.0	17.5	--
Mystique	61	12	87	21	18	85	4	26.4	223	2,039	59.2	20.3	--
Navarro	57	16	87	20	15	77	6	27.3	257	1,770	57.8	20.1	--
Nette 2010	59	13	86	21	15	71	3	25.4	217	2,091	58.4	19.7	44.8
Salamanca	60	12	86	21	19	87	4	28.3	241	1,883	58.8	20.8	--
Spider	62	14	90	21	16	77	6	27.5	235	1,934	59.0	16.2	--
SW Midas	61	12	87	17	14	80	5	25.7	202	2,247	57.9	15.6	40.5
Green Cotyledon Type													
Arcadia	60	12	86	16	15	92	6	26.5	180	2,521	58.8	17.6	--
CDC Striker	61	11	86	18	14	82	6	26.3	195	2,336	59.2	15.9	40.2
Cruiser	60	13	87	18	15	81	7	26.3	190	2,394	60.1	14.9	36.4
K2	60	12	86	18	15	87	3	25.9	206	2,205	59.9	18.2	--
Viper	60	11	85	20	18	90	5	27.7	222	2,044	58.5	17.7	--
Mean	60	12	87	20	16	83	5	26.5	217	2,107	58.8	18.7	41.5
CV %	1.1	7.7	0.9	8.1	15.0	13.7	37.2	1.3	3.8	4.0	2.1	14.8	--
LSD 0.05	0.6	1.3	1.1	2.3	3.4	16.0	2.1	0.5	11.7	117.0	1.7	3.9	--
LSD 0.10	0.5	1.1	1.0	1.9	2.8	13.0	1.7	0.4	9.8	98.0	1.4	3.1	--

Planted: April 15. Harvested: July 25. Previous crop: durum wheat.

¹Plant height at end of flowering.

²Height to the top of the canopy at harvest.

³Height Index: Calculated as the ratio of canopy height/plant height.

⁴Lodging: 0 = none, 9 = lying flat on ground.

⁵Days after planting.

For more information on this and other topics, see www.ag.ndsu.edu

NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit www.ag.ndsu.edu/agcomm/creative-commons.

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881.