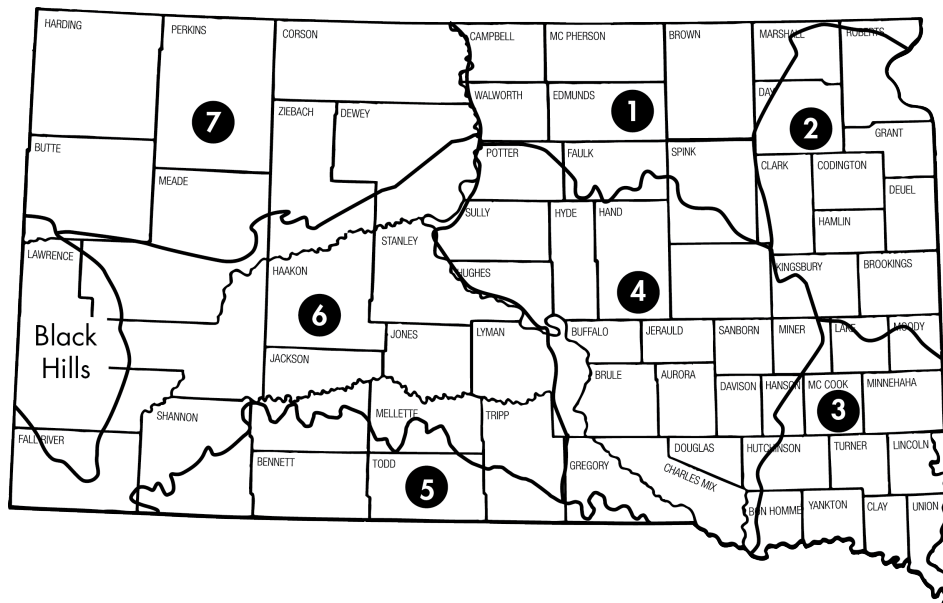


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Crop Zones in South Dakota



Trial Highlights

The 2017 Field Pea Variety Trials consisted of 5 sites (Blunt, Dakota Lakes, Ft. Thompson, Selby and Sturgis) across the central and western portions of South Dakota. In total, 35 varieties (25 yellow and 10 green – Table 1) were tested. Planting and harvest dates can be found in Table 2. All planting was done with a no-till drill and a planting population of 350,000 seeds per acre. Phosphorus was applied based on a pre-plant soil test along with any micronutrient deficiencies. Nitrogen fertilizer was not applied. A typical herbicide application was preplant surface applied using Pendimethalin (Prowl H2O) and Sulfentrazone + Imazethapyr (Authority Assist). Plots were harvested using a Wintersteiger plot combine.

Across all sites, the trial average was 25 bu/ac (down 9 bu/ac from 2016 and down 18 bu/ac from 2015) with a range of 17 – 29 bu/ac. The highest yielding site was Sturgis with a trial average of 33 bu/ac and a range of 17-40 bu/ac (Table 3). This range (23 bu/ac) highlights the fact that variety selection is incredibly important. Hot, dry conditions during flowering likely played a significant role in the decreased yields this year. The central part of the state experienced temperatures above 90 F for several days in a row, which coincided with the critical pollination period of the peas, with much of the state in moderate to severe drought for a large portion of the growing season.

Tables 4 and 5 show the 2- and 3-year averages for the sites and varieties that have been available. Dakota Lakes data does not include the 2017 growing season. Because weather plays such a significant role in crop development and varies greatly from year to year, these are generally better guidelines when choosing an appropriate variety.

Acknowledgements: A special thanks is extended to our cooperators for allowing space and time to conduct these trials. Specifically, we'd like to thank Raleigh Leesman (Blunt), Dwayne Beck (Dakota Lakes), John and Mason Daly (Ft. Thompson), Dave Wilson (Sturgis) and Mark Steigelmeier (Selby). Finally, we would like to thank the South Dakota Pulse Council for the funding for these trials and to all of the seed companies for participating in the trials.

Table 1. Field Pea Varieties included in 2016 Variety Trial

Variety		
	Cotyledon Type	Distributor
AAC Carver	Yellow	Meridian Seeds
Agassiz	Yellow	Meridian Seeds
Arcadia	Green	Pulse USA
Bluemoon	Green	JB Farms
Bridger	Yellow	Great Northern Ag
CDC Amarillo	Yellow	Meridian Seeds
CDC Greenwater	Green	Meridian Seeds
CDC Inca	Yellow	Meridian Seeds
CDC Meadow	Yellow	Meridian Seeds
CDC Patrick	Green	Meridian Seeds
CDC Raezer	Green	Meridian Seeds
CDC Saffron	Yellow	Meridian Seeds
CDC Striker	Green	Pulse USA
CDC Treasure	Yellow	Meridian Seeds
DS-Admiral	Yellow	Pulse USA
Durwood	Yellow	Pulse USA
Earlystar	Yellow	Meridian Seeds
Ginny	Green	Pulse USA
Hyline	Yellow	Great Northern Ag
Jetset	Yellow	Meridian Seeds
Korando	Yellow	Pulse USA
LG Amigo	Yellow	Pulse USA
LG Koda	Green	Pulse USA
Majestic	Yellow	JB Farms
MP1907	Yellow	Legume Logic
Mystique	Yellow	Pulse USA
Navarro	Yellow	Great Northern Ag
Nette 2010	Yellow	Pulse USA
Salamanca	Yellow	Great Northern Ag
Shamrock	Green	Great Northern Ag
Spider	Yellow	Great Northern Ag
SW Midas	Yellow	Pulse USA
Viper	Green	Pulse USA

Table 2. Planting and harvest dates and previous crop.

Variety	Planting Date	Harvest Date	Previous Crop
Blunt	4/5/17	8/8/17	Corn
Dakota Lakes	4/6/17	-	Sorghum
Ft. Thompson	4/6/17	8/7/17	Soybeans
Selby	4/6/16	8/1/17	Soybeans
Sturgis	4/12/17	7/20/17	Winter Wheat

Table 3a. 2017 Blunt, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 4		
	Blunt		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	24.6	26.8	62.5
Agassiz	32.0	28.2	60.9
Arcadia	27.8	27.4	61.7
Bluemoon	25.2	28.3	62.0
Bridger	29.1	28.4	60.8
CDC Amarillo	26.2	28.5	63.0
CDC Greenwater	22.9	27.9	62.6
CDC Inca	32.0	27.7	61.6
CDC Meadow	28.2	27.6	61.5
CDC Patrick	24.0	27.3	62.4
CDC Raezer	23.9	28.7	62.2
CDC Saffron	25.9	26.8	63.1
CDC Striker	26.2	28.5	62.7
CDC Treasure	33.8	27.5	62.4
DS-Admiral	28.6	27.1	62.2
Durwood	25.2	28.2	62.3
Earlystar	33.4	27.5	61.8
Ginny	26.4	27.9	61.6
Hyline	30.0	27.7	61.7
Jetset	28.1	27.4	62.8
Korando	19.2	28.5	62.0
LG Amigo	22.9	27.9	61.0
LG Koda	31.6	27.2	63.0
LL 7647	29.1	27.9	62.5
Majestic	21.1	27.6	62.1
MP1907	29.7	27.9	62.6
Mystique	24.2	27.6	61.6
Navarro	18.8	28.3	61.8
Nette 2010	25.9	28.4	62.2
Salamanca	27.4	28.3	61.6
Shamrock	29.2	27.9	61.1
Spider	27.8	28.8	62.9
SW Midas	32.8	28.3	60.9
Viper	21.9	28.3	62.9
Average	26.9	27.9	62.0
LSD	6.7	0.7	0.7
TYG [†]	27.0	28.0	62.4

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 3b. 2017 Ft. Thompson, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 6		
	Ft. Thompson		
	Yield (bu/ac)	Protein (%)*	Test Wt. (lb/bu)
AAC Carver	20.9	25.8	60.7
Agassiz	21.4	26.9	61.1
Arcadia	19.0	27.2	60.7
Bluemoon	20.3	27.8	61.3
Bridger	20.5	27.4	60.2
CDC Amarillo	21.5	26.9	62.3
CDC Greenwater	18.4	27.0	61.8
CDC Inca	17.5	27.2	61.4
CDC Meadow	19.1	26.1	60.6
CDC Patrick	14.4	27.4	60.9
CDC Raezer	16.9	29.1	60.8
CDC Saffron	18.4	26.3	62.0
CDC Striker	12.9	30.3	60.4
CDC Treasure	19.9	27.2	60.5
DS-Admiral	21.6	26.7	61.5
Durwood	18.0	26.5	60.9
Earlystar	19.7	25.7	60.5
Ginny	20.0	27.8	61.2
Hyline	21.9	27.4	60.6
Jetset	19.8	27.5	61.1
Korando	18.0	29.4	59.7
LG Amigo	18.5	27.6	61.2
LG Koda	18.9	27.7	61.1
LL 5053	19.8	29.1	61.6
LL 5196	21.1	29.0	60.6
LL 66	19.8	28.1	60.9
LL 7647	13.2	27.4	61.7
Majestic	15.4	28.0	61.2
MP1907	21.6	27.1	61.8
Mystique	19.9	26.8	60.5
Navarro	19.2	28.1	60.9
Nette 2010	19.9	27.6	61.3
Salamanca	21.3	28.8	60.0
Shamrock	14.7	27.8	60.9
Spider	23.1	26.6	61.3
SW Midas	18.6	27.2	61.3
Viper	18.7	28.7	60.8
Average	19.0	61.0	27.5
LSD	3.1	0.6	0.6
TYG [†]	19.9	61.6	28.7

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value.

* Value based Korando

Table 3c. 2017 Selby, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 4		
	Selby		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	32.2	23.8	64.1
Agassiz	31.6	25.7	59.5
Arcadia	32.3	24.4	60.5
Bluemoon	27.2	25.1	61.5
Bridger	28.5	24.3	59.9
CDC Amarillo	34.8	26.8	61.1
CDC Greenwater	23.2	24.9	58.5
CDC Inca	29.3	26.5	62.7
CDC Meadow	24.3	25.7	62.1
CDC Patrick	20.4	25.4	60.3
CDC Raezer	28.0	25.3	62.5
CDC Saffron	29.3	24.4	62.7
CDC Striker	22.1	26.7	60.9
CDC Treasure	31.0	24.7	63.1
DS-Admiral	33.5	24.3	60.9
Durwood	33.2	25.1	58.7
Earlstar	33.8	23.6	60.9
Ginny	29.6	24.4	63.3
Hyline	33.6	24.6	62.5
Jetset	33.4	24.6	59.1
Korando	33.7	25.4	63.9
LG Amigo	34.4	24.9	61.5
LG Koda	35.9	23.9	61.1
LL 5053	26.8	25.8	62.7
LL 5196	31.1	26.2	58.2
LL 66	33.9	25.5	59.9
LL 7647	28.3	25.4	60.5
Majestic	29.3	25.6	61.7
MP1907	34.0	24.2	61.9
Mystique	35.7	25.4	59.9
Navarro	34.9	25.1	58.7
Nette 2010	33.6	24.5	62.5
Salamanca	32.3	25.7	57.6
Shamrock	26.8	24.4	62.3
Spider	30.1	25.6	60.7
SW Midas	31.9	23.8	60.3
Viper	29.1	25.3	61.3
Average	30.6	61.1	25.1
LSD	4.0	2.0	1.0
TYG [†]	31.9	62.1	25.8

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 3d. 2017 Sturgis, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 7		
	Sturgis		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	36.6	23.4	66.6
Agassiz	32.7	26.2	63.7
Arcadia	28.2	25.3	63.8
Blumoon	29.5	24.6	63.5
Bridger	32.1	24.5	64.7
CDC Amarillo	32.5	26.8	65.3
CDC Greenwater	34.0	25.2	65.1
CDC Inca	36.1	26.1	65.3
CDC Meadow	29.0	25.7	65.6
CDC Patrick	17.4	26.0	64.0
CDC Raezer	31.1	25.8	64.8
CDC Saffron	30.9	26.2	64.0
CDC Striker	29.3	26.4	64.6
CDC Treasure	36.7	24.5	65.5
DS-Admiral	30.6	24.9	63.5
Durwood	38.5	24.7	64.8
Earllystar	40.2	23.9	64.3
Ginny	29.6	25.1	64.9
Hyline	36.0	24.6	65.0
Jetset	32.8	26.0	63.7
Korando	37.3	25.9	64.9
LG Amigo	30.8	25.1	63.2
LG Koda	34.6	24.5	65.7
LL 7647	29.8	27.5	65.1
Majestic	35.4	26.4	65.1
MP1907	37.3	27.0	64.3
Mystique	37.8	26.6	64.3
Navarro	34.0	25.3	64.8
Nette 2010	36.6	24.3	65.8
Salamanca	35.9	26.5	64.4
Shamrock	32.5	26.3	65.6
Spider	38.0	27.2	64.3
SW Midas	29.6	25.4	63.1
Viper	34.6	25.7	64.2
Average	33.2	25.6	64.6
LSD	5.7	0.6	0.9
TYG [†]	34.5	26.9	65.7

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value.

Table 3e. 2017 All Sites Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	All Sites		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	25.7	25.3	63.3
Agassiz	26.3	27.8	61.3
Arcadia	23.0	26.0	61.7
Blumoon	23.2	26.6	62.1
Bridger	25.2	26.8	61.7
CDC Amarillo	25.7	27.4	62.8
CDC Greenwater	22.0	26.1	61.8
CDC Inca	24.9	28.9	62.8
CDC Meadow	21.6	27.1	62.7
CDC Patrick	16.6	26.3	61.9
CDC Raezer	22.8	26.5	62.6
CDC Saffron	22.4	26.3	62.8
CDC Striker	19.9	28.6	61.8
CDC Treasure	27.3	27.9	62.8
DS-Admiral	26.0	26.4	62.1
Durwood	25.4	26.4	61.7
Earlstar	29.1	26.8	62.1
Hyline	26.1	27.0	62.6
Jetset	26.2	27.2	61.8
Korando	25.4	26.3	62.5
LG Amigo	23.7	26.0	61.7
LG Koda	26.8	27.2	62.7
Majestic	23.1	26.4	62.6
MP1907	27.3	27.8	62.4
Mystique	25.9	26.7	61.6
Navarro	24.2	25.9	61.7
Nette 2010	25.1	26.0	62.8
Salamanca	25.6	28.2	61.2
Shamrock	23.0	27.5	62.4
Spider	26.0	27.9	62.3
SW Midas	24.6	26.8	61.5
Viper	23.1	26.6	62.0
Average	24.5	26.9	62.2
LSD	2.9	1.8	0.8
TYG [†]	26.2	27.1	62.5

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 4a. Two-year average (2016-2017) for Blunt, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 4		
	Blunt		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	34.2	24.1	61.4
Agassiz	35.7	26.1	62.0
Arcadia	32.7	25.3	60.6
Bluemoon	30.3	26.3	61.2
Bridger	34.1	26.5	60.3
CDC Amarillo	32.1	26.2	60.9
CDC Meadow	30.2	25.3	60.1
CDC Patrick	31.8	25.5	60.8
CDC Raezer	30.1	26.5	60.2
CDC Saffron	32.2	25.6	61.3
CDC Striker	28.7	27.4	61.6
DS-Admiral	33.9	25.4	60.7
Durwood	32.9	26.2	60.5
Earllystar	33.8	24.8	60.1
Hyline	35.1	25.6	61.6
Jetset	33.4	25.6	60.8
Korando	25.5	27.0	60.8
Majestic	33.2	26.5	59.7
Mystique	31.0	26.8	59.7
Navarro	26.6	26.8	60.6
Nette 2010	32.5	25.9	62.1
Salamanca	33.4	26.8	60.1
Spider	34.8	27.1	61.1
SW Midas	33.4	25.6	61.3
Viper	26.8	26.0	60.9
Average	31.9	60.8	26.0
LSD [†]	6.1	1.5	0.8
TYG	29.5	60.6	26.6

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value.

Table 4b. Two-year average (2015-2016) for Dakota Lakes (Pierre), SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 4		
	Dakota Lakes		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	45.3	23.2	60.6
Abarth	43.9	24.7	60.9
Agassiz	47.7	25.5	60.3
Arcadia	35.5	23.4	61.0
Bluemoon	45.3	26.4	60.8
Bridger	46.1	25.5	60.7
CDC Amarillo	47.6	25.4	60.8
CDC Meadow	41.9	24.8	61.0
CDC Saffron	47.6	25.0	60.9
DS Admiral	44.4	25.3	60.5
Durwood	48.3	25.7	60.4
Earlystar	38.4	23.1	61.4
Gunner	44.8	24.5	60.9
Hyline	48.6	24.5	60.8
Jetset	42.6	24.7	60.9
Korando	39.8	26.9	59.0
Mystique	44.8	26.2	60.2
Navarro	43.7	25.9	60.9
Nette 2010	46.4	24.8	61.4
Salamanca	48.4	26.8	60.8
Spider	48.3	27.0	60.6
SW Midas	42.2	23.7	61.2
Viper	36.0	26.3	60.0
Average	44.2	25.2	60.7
LSD [†]	4.0	0.8	0.9
TYG	44.6	26.2	60.5

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 4c. Two-year average (2016-2017) for Blunt, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 6		
	Ft. Thompson		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	27.5	24.7	59.5
Agassiz	26.2	26.5	60.0
Arcadia	24.1	25.5	60.0
Bluemoon	25.0	27.5	59.8
Bridger	24.9	26.6	60.0
CDC Amarillo	27.2	26.2	61.0
CDC Meadow	24.0	25.1	60.4
CDC Patrick	22.1	26.4	60.3
CDC Raezer	20.1	27.2	60.3
CDC Saffron	27.2	26.3	60.7
CDC Striker	19.2	29.7	61.3
DS-Admiral	24.5	26.2	60.7
Durwood	26.4	26.3	60.3
Earllystar	24.0	24.3	60.6
Hyline	26.1	25.9	59.3
Jetset	24.7	26.7	60.5
Korando	24.8	28.2	58.9
Majestic	23.7	27.5	59.6
Mystique	24.7	26.8	59.6
Navarro	27.1	27.2	60.4
Nette 2010	25.7	25.9	61.6
Salamanca	29.4	28.0	59.8
Spider	28.7	27.3	60.1
SW Midas	22.5	25.6	61.1
Viper	24.1	27.5	60.3
Average	25.0	26.6	60.2
LSD [†]	3.7	1.2	1.3
TYG	25.7	28.5	60.3

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 4d. Two-year average (2016-2017) for Selby, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 1		
	Selby		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	44.3	24.7	62.9
Agassiz	46.3	25.4	60.5
Arcadia	38.7	25.0	59.9
Bluemoon	39.5	25.4	60.9
Bridger	38.5	25.1	60.7
CDC Amarillo	50.2	25.3	61.0
CDC Meadow	41.2	25.6	62.4
CDC Patrick	37.2	25.7	61.0
CDC Raezer	38.4	25.6	61.5
CDC Saffron	44.7	24.8	61.3
CDC Striker	32.1	26.0	60.9
DS-Admiral	43.9	25.1	61.4
Durwood	44.9	25.4	60.0
Earlstar	43.4	24.7	61.2
Hyline	44.7	24.9	61.4
Jetset	41.9	25.3	59.0
Korando	43.4	25.7	62.0
Majestic	40.0	25.8	60.6
Mystique	45.3	25.6	60.0
Navarro	39.9	25.2	59.0
Nette 2010	41.4	25.2	62.3
Salamanca	43.4	25.7	59.5
Spider	42.7	25.7	61.1
SW Midas	40.8	24.9	60.6
Viper	34.3	25.0	61.1
Average	41.8	25.3	60.9
LSD [†]	4.6	0.8	1.5
TYG	45.5	25.2	61.4

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 5a. Three-year average (2015-2017) for Blunt, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 4		
	Blunt		
	Yield (bu/ac)	Protein (%)	Test Wt. (lb/bu)
AAC Carver	46.0	24.1	56.5
Agassiz	42.0	27.0	61.5
Arcadia	39.6	25.4	60.7
Bluemoon	39.6	26.3	51.1
Bridger	44.7	26.1	60.5
CDC Amarillo	43.3	25.9	61.4
CDC Meadow	42.2	25.0	60.5
CDC Saffron	44.5	25.4	56.2
DS Admiral	42.1	25.4	60.8
Durwood	43.8	25.9	61.0
Earlstar	43.1	24.6	60.5
Hyline	42.8	25.5	61.1
Jetset	41.1	26.1	60.8
Korando	37.9	27.4	59.6
Mystique	39.4	26.9	59.9
Navarro	36.9	26.7	60.2
Nette 2010	41.3	25.5	61.7
Salamanca	42.3	27.1	60.0
Spider	47.9	26.9	61.3
SW Midas	40.5	25.1	61.3
Viper	34.2	26.7	59.8
Average	41.7	26.0	59.8
LSD [†]	5.0	0.7	NS
TYG	43.0	26.7	NS

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 5b. Three-year yield average (2014-2016) for Dakota Lakes (Pierre), SD Field Pea Performance Trials. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 4
	Dakota Lakes
	Yield (bu/ac)
Agassiz	42.9
Arcadia	37.0
Bridger	45.6
DS Admiral	43.4
Jetset	39.5
Korando	37.3
Mystique	46.4
Navarro	42.9
Nette 2010	43.1
Salamanca	44.9
Spider	43.3
SW Midas	40.0
Viper	35.1
Abarth	-
Bluemoon	-
Gunner	-
Hyline	-
Average	41.6
LSD [†]	5.4
TYG	40.2

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value

Table 5a. Three-year average (2015-2017) for Blunt, SD Field Pea Performance - Average yield, test weight and protein. All values are adjusted to 13% moisture where necessary

Variety	Crop Zone 1	
	Selby	
	Yield (bu/ac)	Protein (%)
AAC Carver	48.7	25.5
Agassiz	44.8	26.3
Arcadia	41.7	26.0
Bridger	41.6	26.1
CDC Amarillo	52.3	26.0
CDC Meadow	45.5	26.2
CDC Saffron	47.7	25.8
DS Admiral	43.7	26.0
Durwood	52.4	25.0
Earlstar	46.4	25.8
Hyline	47.0	26.0
Jetset	42.1	26.2
Korando	44.9	26.6
Mystique	47.2	26.4
Navarro	43.7	26.3
Nette 2010	43.7	26.3
Salamanca	45.8	26.2
Spider	48.1	26.3
SW Midas	39.2	25.4
Viper	38.8	25.9
Average	45.3	26.0
LSD [†]	4.6	0.8
TYG	47.7	25.9

[†] Yield, test weight or protein value required to determine if varieties are significantly different from one another with 95% confidence. Bolded values are not statistically different from the highest value