

**2019 Winter Wheat - Recrop**

**Dickinson, ND**

Variety	Winter Survival	Heading Date from 1/1	Seeds		Plant Height in	Test Weight lbs/bu	Protein %	----- Grain Yield-----			Average Yield	
			per Pound	2017				2018	2019	2	3	
										Year	Year	
							-----bu/ac-----			bu/ac	bu/ac	
AC Emerson	100	171	17,563	31	58.5	14.8	52.5	83.1	45.2	64.1	60.2	
Decade-Fhb1	100	168	16,431	27	56.6	13.6	--	--	51.8	--	--	
Ideal	100	171	16,982	27	58.1	12.8	52.1	90.6	49.6	70.1	64.1	
Jerry	100	172	15,134	35	57.5	13.8	58.4	84.6	46.7	65.7	63.2	
Keldin	100	171	13,762	29	57.0	13.0	59.9	99.0	53.9	76.5	70.9	
Loma	100	173	17,172	27	54.4	14.4	45.2	80.2	46.7	63.5	57.4	
Northern	100	173	15,839	30	57.5	13.3	51.5	85.2	54.0	69.6	63.6	
Oahe	100	168	14,147	30	57.5	13.0	54.5	74.7	54.6	64.6	61.3	
Overland-FHB1	100	167	16,312	30	57.1	13.3	55.8	71.0	48.6	59.8	58.5	
Peregrine	100	171	17,750	34	57.0	12.7	58.6	90.6	51.3	71.0	66.8	
SY Monument	100	169	16,306	28	54.5	12.8	62.0	76.2	54.9	65.6	64.4	
SY Sunrise	100	167	17,035	22	54.9	13.2	60.2	64.1	49.3	56.7	57.9	
SY Wolf	100	168	15,473	27	58.3	13.4	57.9	80.5	60.4	70.5	66.3	
TCG-Boomlock	100	170	16,520	29	58.3	13.5	--	--	53.2	--	--	
Thompson	100	169	16,557	31	58.5	13.3	--	84.4	53.2	68.8	--	
WB4462	100	166	14,942	30	55.6	12.8	56.2	68.7	55.2	61.9	60.0	
WB4595	100	168	16,140	27	60.6	12.1	--	--	60.0	--	--	
Trial Mean	100	169	15,938	29	57.2	13.2	55.2	83.3	53.0	--	--	
CV %	0	0.5	5.2	6.3	1.0	3.0	9.0	8.8	8.5	--	--	
LSD 0.05	0	1	1,167	3	0.8	0.7	7.0	10.3	6.4	--	--	
LSD 0.10	0	1	975	2	0.7	0.5	5.9	8.6	5.3	--	--	

Planting Date: September 17, 2018

Harvest Date: August 6, 2019

Previous Crop: Cover Crop

Seeding Rate: 1 million live seeds/ac

**2019 Oat - Recrop**

**Dickinson, ND**

Variety	Days to Head	Seeds per Pound	Plant Height in	Test Weight lbs/bu	----- Grain Yield-----			----- Average Yield-----	
					2017	2018	2019	2017	2018
					-----bu/ac-----			-----bu/ac-----	
AC Pinnacle	68	12,599	41	38.8	83.4	116.2	102.5	109.4	100.7
Beach	68	11,297	36	40.1	70.3	83.5	108.5	96.0	87.4
CDC Dancer	69	12,769	35	39.5	74.4	95.3	102.3	98.8	90.7
CDC Minstrel	68	12,381	32	37.6	70.2	106.0	127.5	116.7	101.2
Cs Camden	69	11,998	34	36.5	72.4	111.4	102.4	106.9	95.4
Deon	70	12,357	37	38.6	76.1	95.5	149.8	122.6	107.1
Hayden	68	12,131	37	39.8	80.9	117.4	129.5	123.4	109.3
HiFi	69	13,291	35	38.0	69.7	109.4	118.0	113.7	99.0
Hyttest	68	12,960	38	39.5	66.0	101.6	90.5	96.1	86.0
Jury	69	11,979	33	38.5	73.2	95.2	122.6	108.9	97.0
Killdeer	68	13,042	31	37.6	81.8	109.3	125.7	117.5	105.6
Leggett	68	12,919	31	39.1	70.9	95.4	97.9	96.7	88.1
Newburg	68	12,915	40	37.8	73.2	82.1	107.5	94.8	87.6
Otana	69	14,158	37	39.5	76.5	97.7	108.0	102.8	94.1
Paul	72	19,743	37	43.5	43.3	82.2	87.5	84.8	71.0
Rockford	69	14,349	38	39.6	71.2	99.1	123.4	111.2	97.9
Souris	68	12,965	33	37.6	78.2	94.5	110.9	102.7	94.5
Stallion	69	13,814	35	40.4	83.2	103.6	113.7	108.7	100.2
Warrior	68	13,992	31	38.3	--	--	97.0	--	--
Trial Mean	69	13,144	36	38.9	72.9	100.7	113.7	--	--
CV %	0.7	6.1	5.1	1.5	9.6	13.7	14.6	--	--
LSD 0.05	1	1,133	3	0.8	9.8	19.3	23.2	--	--
LSD 0.10	1	948	2	0.7	8.2	16.1	19.4	--	--

Planting Date: April 24, 2019

Harvest Date: August 14, 2019

Previous Crop: Cover Crop

Seeding Rate: 1 million live seeds/ac

**2019 Barley - Recrop**

**Dickinson, ND**

Variety	Days to Head	Seeds per Pound	Plant Height in	Test Weight lbs/bu	Protein %	Plump % >6/64	----- Grain Yield-----			----- Average Yield-----	
							2017	2018	2019	2	3
							-----bu/ac-----			----bu/ac----	
<b>Six Row</b>											
Lacey	66	11,462	32	49.4	16.3	88	45.6	126.3	70.3	98.3	80.7
Tradition	66	12,114	33	50.0	16.9	87	45.6	124.9	67.3	96.1	79.3
<b>Two Row</b>											
AAC Connect	69	10,476	27	48.5	15.5	90	--	--	73.7	--	--
AAC Synergy	71	10,858	28	49.0	15.1	94	47.4	141.3	73.8	107.5	87.5
ABI Balster	70	11,730	29	48.6	16.1	89	47.8	134.6	84.8	109.7	89.1
Conlon	64	9,286	30	52.0	15.8	98	45.8	79.9	60.7	70.3	62.1
Explorer	69	9,955	27	49.4	15.2	93	54.1	134.5	86.9	110.7	91.8
ND Genesis	67	10,418	31	50.0	13.9	95	49.3	134.4	69.1	101.8	84.3
Pinnacle	68	9,589	30	51.3	14.8	97	45.7	133.9	76.4	105.1	85.3
Trial Mean	67	10,186	29	49.7	15.0	94	48.8	127.8	73.0	--	--
CV %	0.9	3.9	5.5	1.1	1.6	1.7	9.7	7.2	11.3	--	--
LSD 0.05	1	564	2	0.8	0.4	3	6.7	13.0	11.8	--	--
LSD 0.10	1	470	2	0.6	0.3	2	5.6	10.8	9.8	--	--

Planting Date: April 23, 2019

Harvest Date: August 7, 2019

Previous Crop: Cover Crop

Seeding Rate: 1.2 million live seeds/ac

Grain protein percentages reported on a 0% moisture basis

**2019 Durum - Recrop**

**Dickinson, ND**

Variety	Days	Seeds	Plant	Test	Protein	----- Grain Yield-----			----- Average Yield -----	
	to	per				2017	2018	2019	2	3
	Head	Pound	Height	Weight					Year	Year
			in	lbs/bu	%	-----bu/ac-----			-----bu/ac-----	
AC Commander	68	11,008	34	60.5	15.6	31.1	48.1	53.6	50.9	44.3
Alkabo	68	11,506	36	60.6	15.2	32.0	63.2	46.8	55.0	47.3
Alzada	67	10,740	31	59.9	15.5	35.0	38.4	50.2	44.3	41.2
Ben	68	11,413	39	60.6	15.4	33.0	56.5	52.7	54.6	47.4
CDC Verona	69	11,864	37	60.0	16.3	29.8	64.1	49.7	56.9	47.9
Carpio	70	10,759	36	60.1	15.8	33.2	57.9	47.0	52.5	46.0
Divide	69	11,174	37	60.6	15.2	33.2	62.4	49.7	56.1	48.4
Grenora	68	11,794	35	59.8	14.9	35.2	55.9	51.5	53.7	47.5
Joppa	69	11,911	37	60.4	14.5	34.0	65.8	51.0	58.4	50.3
Lebsock	68	11,336	37	61.0	15.1	31.8	59.1	53.9	56.5	48.3
Maier	68	11,988	35	60.4	15.8	32.4	57.5	47.7	52.6	45.9
Mountrail	69	11,219	37	60.3	15.9	35.9	64.8	52.1	58.4	50.9
ND Grano	70	12,405	35	60.8	15.1	32.9	64.5	53.9	59.2	50.4
ND Riveland	68	11,315	37	60.6	15.7	32.4	60.1	45.8	53.0	46.1
Pierce	68	11,952	36	61.3	15.1	32.5	56.8	47.2	52.0	45.5
Rugby	68	11,625	40	60.4	16.0	31.8	63.2	44.5	53.9	46.5
Strongfield	69	12,144	37	59.8	16.8	33.8	60.3	49.8	55.0	48.0
Tioga	69	12,041	40	60.4	15.1	32.8	63.3	52.1	57.7	49.4
VT Peak	68	11,551	37	61.0	15.4	30.0	60.3	50.5	55.4	46.9
Trial Mean	69	11,486	37	60.5	15.5	31.9	61.6	51.1	--	--
CV %	0.9	5.9	5.7	0.9	2.6	9.9	9.0	9.3	--	--
LSD 0.05	1	943	3	0.8	0.6	4.4	7.8	6.6	--	--
LSD 0.10	1	790	2	0.6	0.5	3.7	6.5	5.6	--	--

Planting Date: April 24, 2019  
 Harvest Date: August 20, 2019  
 Previous Crop: Cover Crop  
 Seeding Rate: 1.2 million live seeds/ac

## 2019 Field Pea - Recrop

Dickinson, ND

Variety	Days	Days	1000	Seeds	Plant	Test	Protein	--Grain Yield--			Average Yield	
	to	to	Seed	per				2017	2018	2019	2	3
	Flower	Mature	Weight	Pound	Height	Weight	%	-----bu/ac-----			--bu/ac--	
			gm		in	lbs/bu						
<b>Yellow Types</b>												
AAC Carver	57	88	287	1,589	29	64.5	24.5	--	--	47.0	--	--
AAC Chrome	57	92	262	1,735	24	65.0	24.2	--	--	50.1	--	--
AAC Profit	58	89	256	1,773	28	65.4	25.9	--	--	55.7	--	--
AC Earlystar	57	89	245	1,859	25	64.4	24.9	--	--	40.9	--	--
Agassiz	57	87	259	1,758	26	64.3	25.0	21.6	23.1	52.2	37.7	32.3
Bridger	56	89	267	1,699	23	65.1	25.9	--	23.1	45.6	34.4	--
CDC Amarillo	58	91	227	1,999	27	65.0	24.5	--	--	43.2	--	--
CDC Inca	58	88	242	1,882	28	65.8	25.1	--	--	54.4	--	--
CDC Saffron	58	88	266	1,707	24	64.9	25.1	--	--	47.5	--	--
CDC Spectrum	58	90	254	1,787	28	64.9	26.4	--	--	45.8	--	--
DS Admiral	57	89	257	1,789	26	64.9	25.2	23.1	25.7	40.7	33.2	29.9
Hyline	57	88	276	1,645	25	65.1	23.9	--	25.3	48.7	37.0	--
Jetset	57	88	266	1,711	22	64.9	26.2	--	--	43.6	--	--
Salamanca	57	87	294	1,545	26	65.4	26.8	--	26.5	45.5	36.0	--
Spider	57	90	242	1,882	24	64.6	26.1	18.5	28.8	43.4	36.1	30.2
<b>Green Types</b>												
AAC Comfort	59	93	290	1,576	25	64.5	25.2	--	--	46.5	--	--
Arcadia	57	87	244	1,868	24	64.1	25.2	25.8	27.9	44.3	36.1	32.6
CDC Greenwater	58	92	239	1,903	25	64.8	24.0	--	--	41.1	--	--
CDC Striker	57	88	259	1,754	22	65.0	25.4	24.8	25.7	46.2	35.9	32.2
Cruiser	57	87	244	1,867	24	63.9	25.8	22.7	21.0	35.6	28.3	26.4
Hampton	57	90	247	1,841	24	63.8	27.1	--	--	46.5	--	--
Trial Mean	57	89	255	1,791	25	64.8	25.3	22.8	24.8	45.2	--	--

CV %	1.0	1.4	6.8	6.5	10.7	0.6	2.3	8.5	17.2	11.2	--	--
LSD 0.05	1	2	25	165	4	0.5	0.8	2.8	NS	7.1	--	--
LSD 0.10	1	2	21	138	3	0.4	0.7	2.3	NS	6.0	--	--

Planting Date: May 3, 2019

Harvest Date: August 7, 2019

Previous Crop: Cover Crop

Seeding Rate: 325,000 live seeds/ac

Grain protein percentages reported on 0% moisture basis

**2019 Flax - Recrop****Dickinson, ND**

Variety	Days to Flower	Days to Mature	Plant Height in	Test Weight lbs/bu	Oil Content %	-- Grain Yield-- 2019 bu/ac
Bison	53	103	19	46.5	43.6	16.2
CDC Bright	54	106	18	45.7	46.2	13.6
CDC Buryu	54	103	18	50.2	43.1	15.4
CDC Glas	55	105	20	47.0	44.4	13.3
CDC Melyn	56	101	19	43.3	46.1	12.1
CDC Neela	54	106	17	48.5	43.3	13.9
CDC Plava	55	104	17	46.0	43.7	9.9
Carter	54	106	17	50.5	42.8	14.7
Gold ND	54	106	20	48.2	43.9	14.1
ND Hammond	54	103	18	43.7	42.4	11.0
Omega	56	104	18	47.8	42.7	13.3
Prairiethunder	54	105	19	48.3	42.6	15.9
Webster	54	105	20	46.3	44.2	13.9
York	54	107	18	47.5	43.0	18.4
Trial Mean	55	105	18	48.1	43.9	14.6
CV %	1.7	1.6	6.2	2.7	1.5	15.0
LSD 0.05	2	3	2	2.1	1.1	3.6
LSD 0.10	1	2	2	1.8	0.9	3.0

Planting Date: May 6, 2019

Harvest Date: September 19, 2019

Previous Crop: Cover Crop

No Lodging observed

Oil content reported on 9% moisture basis

**2019 Hard Red Spring Wheat - Recrop**

**Dickinson, ND**

Variety	Days to Head	Seeds per Pound	Plant Height in	Test Weight lbs/bu	Protein %	----- Grain Yield-----			Average Yield	
						2017	2018	2019	2	3
						-----bu/ac-----			---bu/ac---	
Barlow	63	14,270	33	61.1	16.6	38.1	60.2	45.2	52.7	47.8
Bolles	65	14,096	32	59.6	18.7	34.4	65.0	38.4	51.7	45.9
Boost	66	14,469	32	59.4	16.4	34.7	57.5	47.7	52.6	46.6
DynaGro Ambush	63	13,139	31	61.3	17.5	34.1	61.6	46.5	54.0	47.4
Dyna-gro Commander	64	13,331	31	60.6	16.6	--	--	47.2	--	--
Elgin-ND	64	14,587	33	59.5	16.1	36.2	60.1	47.3	53.7	47.9
Faller	65	13,915	32	59.4	15.6	34.5	72.1	51.2	61.6	52.6
Glenn	63	14,218	34	62.1	16.9	34.9	63.5	44.8	54.2	47.7
CP3504	65	15,063	28	59.3	15.9	34.8	70.3	53.9	62.1	53.0
CP3530	65	13,618	35	59.6	15.7	33.1	63.1	52.0	57.6	49.4
CP3616	65	13,218	31	59.6	17.0	32.7	69.1	50.6	59.9	50.8
CP3888	65	13,722	30	59.4	16.4	--	65.5	47.1	56.3	--
CP3910	62	14,684	29	61.5	16.3	--	--	51.0	--	--
CP3915	64	15,231	31	61.5	17.0	--	--	51.5	--	--
CP3939	63	14,283	31	60.6	16.8	--	--	51.8	--	--
LCS Breakaway	63	13,700	30	61.6	16.8	32.7	49.6	41.0	45.3	41.1
LCS Cannon	62	13,258	30	61.6	16.5	--	56.6	47.3	52.0	--
LCS Rebel	63	12,677	32	61.0	16.8	33.3	60.4	48.9	54.7	47.5
LCS Trigger	67	15,662	30	59.6	14.3	34.0	76.0	47.1	61.6	52.4
Lang-MN	65	15,670	30	60.9	16.7	35.7	61.3	51.2	56.2	49.4
Lanning	63	12,944	30	60.2	17.5	--	69.5	49.2	59.3	--
Linkert	65	13,062	29	60.0	17.1	32.8	58.8	47.1	53.0	46.3
MN Washburn	65	15,633	29	59.4	16.1	--	64.8	48.6	56.7	--
MS Barracuda	62	12,281	29	60.1	17.1	--	51.1	36.8	43.9	--
MS Camaro	64	14,929	28	60.3	17.0	33.5	54.0	48.2	51.1	45.2
MS Chevelle	63	14,404	30	60.3	15.7	35.3	67.3	54.8	61.0	52.5
Mott	65	15,099	33	60.3	17.0	29.8	60.1	42.7	51.4	44.2
ND-VitPro	63	14,145	32	61.9	17.3	28.8	59.6	44.7	52.2	44.4
Sy Ingmar	65	15,084	31	61.4	17.1	37.0	61.8	46.8	54.3	48.5
SY Longmire	65	13,971	31	60.9	16.7	--	61.5	49.8	55.6	--
SY McCloud	64	12,691	31	61.1	17.3	--	60.5	46.2	53.3	--
SY Rockford	65	13,631	31	59.1	16.2	38.6	64.9	54.0	59.4	52.5
Sy Soren	65	14,297	29	61.1	17.7	32.4	61.9	48.6	55.3	47.6
Sy Valda	65	14,024	29	60.6	16.0	38.7	62.9	47.0	54.9	49.5
SY611CL2	65	14,545	29	61.0	16.8	--	--	49.8	--	--
Shelly	65	14,350	29	60.0	16.0	39.3	70.4	48.1	59.2	52.6
Surpass	62	16,525	31	60.0	16.7	35.6	65.1	45.8	55.4	48.8
TCG-Climax	69	15,915	31	60.4	17.6	33.9	62.3	39.6	50.9	45.3
TCG-Heartland	63	14,646	29	60.9	16.7	--	--	43.9	--	--
TCG Spitfire	66	13,966	31	59.5	15.8	35.0	66.1	52.6	59.4	51.3



TCG-Stalwart	65	13,317	31	59.1	17.2	--	--	48.2	--	--
Trial Mean	64	14,174	31	60.5	16.7	34.4	63.1	47.6	--	--
CV %	0.7	4.7	4.3	0.6	1.9	11.2	8.5	8.1	--	--
LSD 0.05	1	937	2	0.5	0.5	5.4	7.5	5.4	--	--
LSD 0.10	1	785	2	0.5	0.4	4.5	6.2	4.5	--	--

Planting Date: April 23, 2019

Harvest Date: August 19, 2019

Previous Crop: Cover Crop

Seeding Rate: 1.2 million live seeds/ac

## 2019 Lentil - Recrop

Dickinson, ND

Variety	Days to Flower	Days to Mature	1000 Seed Weight gm	Seeds per Pound	Plant Height in	Test Weight lbs/bu	protein %	----Grain Yield----			Average Yield	
								2016	2017	2019	2	3
								----lbs/ac----			---lbs/ac---	
<b>Large Green Types</b>												
CDC Greenland	58	96	60	7,528	13	59.9	27.0	971	800	1,393.5	1,097	1,055
Pennell	59	95	58	7,809	11	59.8	26.6	1,302	721	1,348.1	1,034	1,124
Riveland	58	96	63	7,178	13	59.1	26.3	1,124	698	1,350.2	1,024	1,057
<b>Medium Green Type</b>												
CDC Richlea	58	96	48	9,438	12	61.8	26.3	1,584	858	1,400.4	1,129	1,281
<b>Small Green Type</b>												
CDC Viceroy	58	95	31	14,437	12	62.9	28.0	1,521	730	1,598.1	1,164	1,283
ND Eagle	58	95	35	12,949	11	63.0	26.2	--	624	1,226.4	925	--
<b>Small French Green Type</b>												
CDC Lemay	58	94	31	14,550	10	63.0	26.5	1,315	369	1,227.3	798	970
<b>Medium Red Type</b>												
CDC Red Rider	59	95	43	10,614	14	62.3	26.1	1,585	816	1,386.9	1,102	1,263
<b>Small Red Types</b>												
CDC Redberry	58	96	42	10,766	11	62.4	28.5	1,229	700	1,587.9	1,144	1,172
CDC Rouleau	59	96	34	13,232	12	62.1	25.4	1,511	590	1,533.0	1,061	1,211
<b>Extra Small Red Type</b>												
CDC Rosetown	59	95	27	16,858	11	63.3	28.7	1,406	759	1,349.5	1,054	1,172
Trial Mean	58	95	43	11,396	12	61.8	26.9	1,355	697	1,400	--	--
CV %	0.7	0.8	3.7	3.3	12.4	0.7	2.7	9.0	10.7	12.7	--	--
LSD 0.05	1	1	2	547	2	0.7	1.4	177	107	257	--	--
LSD 0.10	0	1	2	454	2	0.6	0.9	147	89	214	--	--

Planting Date: May 3, 2019

Harvest Date: August 16, 2019

Previous Crop: Cover Crop

Seeding Rate: 600,000 live seeds/ac

Grain protein percentages reported on 0% moisture basis

**2019 Industrial Hemp - Recrop**

**Dickinson, ND**

Variety	Plant Stand	1000 KWT	PLSE <sup>1</sup>	Seedling Mortality	Seeds per Pound	Test Weight	Oil Content <sup>3</sup>	-- Grain Yield-- 2019
	ft <sup>2</sup>	g	%	%		lbs/bu	%	lbs/ac
Altair	6.4	15.6	37	63	29,095	39.8	30.6	860
Altair TRT <sup>2</sup>	4.5	15.9	26	74	28,506	39.8	30.4	770
Anka	5.2	14.9	28	72	30,439	39.0	29.9	729
Anka TRT	4.6	15.4	25	75	29,501	39.6	29.9	736
CFX-1	4.9	16.2	31	69	27,978	40.9	32.5	684
CFX-2	3.7	15.9	23	77	28,661	41.0	31.7	722
CRS-1	7.2	16.5	45	55	27,434	40.8	31.8	744
Canda	4.6	19.0	29	71	23,940	40.3	30.5	897
Cyclone V-1	2.7	6.7	17	83	67,458	41.8	31.9	293
Cyclone V-1 TRT	5.5	6.9	35	65	65,847	41.6	32.6	320
Grandi	4.3	15.2	27	73	29,867	40.8	31.7	653
Joey	4.6	16.9	29	71	26,875	41.3	30.9	785
Katani	5.0	14.4	31	69	31,599	40.9	31.1	671
Piccolo	6.0	14.5	38	62	31,394	40.9	31.1	604
Rigel	4.1	16.8	31	69	27,113	39.8	30.5	804
Rigel TRT	4.1	16.8	31	69	26,943	39.5	31.0	839
X-59	2.7	16.4	17	83	27,752	40.8	29.1	891
Trial Mean	4.8	15	30	70	32,694	40.1	31.0	697
CV %	42.2	3.7	42.4	18.1	3.3	1.1	1.5	13.8
LSD 0.05	2.9	0.8	18	18	1,522	0.6	0.7	136
LSD 0.10	2.4	0.7	15	15	1,270	0.5	0.6	114

<sup>1</sup> Pure live seed emergence

<sup>2</sup> TRT = Metalaxyl + Ipconazole 3 fl oz/100 lb seed

<sup>3</sup> oil content reported as is basis (uniformly dried to approximately 3% moisture)

Target seeding rate was 12 seeds/ft<sup>2</sup> + additional 25% for expected mortality loss. Altair, Anka, and Rigel were 13, 14, and 10 seeds/ft +25% mortality loss, respectively. This was due to late seed arrival with germinations and seed weight completed after seeding the trial.

Planting Date: May 29, 2019

Harvest Dates: October 8, 2019      Cyclone V-1 and Cyclone V-1 TRT  
 September 4, 2019      All others

Previous Crop: wheat