

Table 2. Soil characteristics at harvest averaged over in row and between row samples cow based farms.

site	hybrid	CO2 correlated to BD	SLAN ppm	Aggregate Stability	Nitrate	water soluble organic carbon	bulk density g/cc	Water Soluble C:N	Grain yield bu/a
L-beef	17.461	97	109	32.0	41	153	1.03	4.0	207
L-beef	17.C2B2-4	90	111	32.5	27	109	1.08	4.0	171
L-beef	C2B2-2.461	114	119	26.0	31	120	1.09	4.0	172
L-beef	FOS8500	106	149	32.0	42	149	1.04	3.5	200
		102	122	30.6	35	133	1.06	3.9	188
S dairy	17.461	79	121	22.5	22	181	0.99	8.0	227
S dairy	17.C2B2-4	92	129	20.0	20	188	0.96	9.0	215
S dairy	C2B2-2.461	67	130	23.5	23	161	0.92	6.5	185
S dairy	FOS8500	60	147	24.5	24	188	0.96	7.5	253
		74	132	22.6	22	179	0.96	7.8	220
T dairy	17.461	85	147	31.0	25	201	0.94	8.0	164
T dairy	17.C2B2-4	75	153	37.0	33	229	0.97	7.0	188
T dairy	C2B2-2.461	100	126	34.0	32	240	0.94	8.0	151
T dairy	FOS8500	57	135	26.5	27	237	0.94	8.5	228
		79	140	32.1	29	227	0.94	7.9	183
M dairy	17.461	83	104	30.5	17	122	0.94	7.0	132
M dairy	17.C2B2-4	84	109	10.0	20	131	0.90	7.0	131
M dairy	C2B2-2.461	77	113	27.0	19	118	0.99	11.2	123
M dairy	FOS8500	78	101	18.0	16	126	0.95	7.5	150
		81	107	21.4	18	124	0.94	8.2	134
V nm dairy	17.461	60	134	7.0	15	82	1.21	5.5	180
V nm dairy	17.C2B2-4	67	113	3.5	16	106	1.19	7.0	167
V nm dairy	C2B2-2.461	82	115	3.5	22	96	1.19	5.0	181
V nm dairy	FOS8500	48	105	4.5	17	101	1.20	6.0	177
		64	117	4.6	17	96	1.20	5.9	176
U m dairy	17.461	76	122	5.5	17	114	1.20	6.5	145
U m dairy	17.C2B2-4	63	115	11.5	16	104	1.21	6.5	172
U m dairy	C2B2-2.461	58	127	7.5	38	135	1.19	3.5	169

U m dairy	FOS8500	71	126	8.0	32	106	1.17	3.5	214
		67	123	8.1	26	115	1.19	5.0	175

Table 3. Soil characteristics at harvest averaged over in row and between row samples for the cash farms.

site	hybrid	CO2 correlated to BD	SLAN ppm	Aggregate Stability	Nitrate	water soluble organic carbon	bulk density g/cc	Water Soluble C:N	Grain yield bu/a
A cash	17.461	88	83	17.0	12	194	1.03	17.5	79
A cash	17.C2B2-4	65	85	8.5	14	206	1.06	15.0	112
A cash	C2B2-2.461	81	91	14.0	9	180	1.01	20.0	70
A cash	FOS8500	68	79	13.0	12	188	1.02	15.5	81
		75	85	13.1	12	192	1.03	17.0	86
O cash	17.461	62	76	32.0	12	134	1.13	11.0	98
O cash	17.C2B2-4	75	74	25.0	13	176	1.17	14.0	122
O cash	C2B2-2.461	71	65	26.5	13	166	1.17	13.5	95
O cash	FOS8500	61	77	22.0	18	146	1.18	8.5	59
		67	73	26.4	14	155	1.16	11.8	94
C cash	17.461	66	79	23.0	12	140	1.08	12.0	122
C cash	17.C2B2-4	65	86	31.0	14	141	1.08	10.0	103
C cash	C2B2-2.461	88	97	16.5	15	174	1.03	11.5	139
C cash	FOS8500	90	103	16.5	19	212	1.03	11.0	173
		77	91	21.8	15	167	1.05	11.1	134

Table 4. Grain yields varied with the farm and the hybrid with highest yields with the plots in blue were not fertilized.

Hybrid Combination 2019 strip trials.										
Farm	system	FOS8500	9.2)15 x C4-6	9.2)17 x C4-6	9.2)17 x C2B2-4-1-7	C2B2-1 x C4-6	C2B2-4-1-7 x C4-6	C4-6 x 9.2)-11	NG10-2-3-2 x Md1	average yield
bushels/acre										
A	cash	81	60	79	112	70	65	16	11	62
C	cash	173	112	122	103	139	148	154	152	138
O	cash	59	141	98	122	95	105	148	102	109
M	dairy	150	154	132	131	123	115	105	127	130
S	dairy	253	194	227	215	185	204	140	169	198
T	dairy	228	161	164	188	151	209	92	191	173
U-M	dairy	214	161	145	172	169	124	144	170	162
V-NM	dairy	177	204	180	167	181	130	138	116	162
L	beef	200	177	207	171	172	180	158		181
ave		170	152	151	153	143	142	122	130	145

Hybrid Combination 2019 strip trials.										
Farm		FOS8500	9.2)15 x C4-6	9.2)17 x C4-6	9.2)17 x C2B2-4-1-7	C2B2-1 x C4-6	C2B2-4-1-7 x C4-6	C4-6 x 9.2)-11	NG10-2-3-2 x Md1	average yield
bushels/acre										
Ave with manure		185	146	154	156	144	149	116	137	149
Ave. without manure		118	172	139	145	138	118	143	109	135
Ave cash		104	104	100	112	101	106	106	89	103
Ave cow		203	175	176	174	164	160	130	155	168

Table 5. Yield results from Hybrid x Inoculate study 2019.

	Anibas + manure	Weiss + N	Weiss + N +manure
bu/acre			
17.461 -inoc	127	125	138
17.461 +inoc	125	114	135
FOS8500 -inoc	144	153	195
FOS8500 +inoc	160	177	163

Table 6. IL and WI Yield data 2018 and 2019 and quality data 2018 OREI trials.

Parameter	Unit	average value			relative value in %		
		Check	17xC2B2 (RM110)	17xC4-6 (RM104)	Check	17xC2B2 (RM110)	17xC4-6 (RM104)
grain yield 2018, 2019	bu/acre	151	137	129	100	91	85
grain yield 2018	bu/acre	152	135	121	100	89	79
oil yield lbs/acre	lbs/acre	243	298	258	100	123	106
oil	%	3.38	4.67	4.53	100	138	134
lutein	µg/g	3.49	3.89	4.19	100	111	120
zeaxanthin	µg/g	0.83	1.24	1.09	100	149	132
β-cryptoxanthin	µg/g	0.39	1.03	0.56	100	264	144
β-carotene	µg/g	0.27	0.40	0.35	100	150	129
protein yield lbs/acre	lbs/acre	515	487	498	100	95	97
protein	%	7.16	7.63	8.68	100	107	121
methionine	%	0.16	0.23	0.25	100	143	157
lysine	%	0.30	0.33	0.35	100	109	114
cysteine	%	0.17	0.19	0.20	100	112	121
methionine in protein	%	2.20	2.99	2.90	101	136	132
Boron	ppm	1.71	1.96	1.86	102	115	109
Iron	ppm	13.59	16.76	17.89	100	123	132
Manganese	ppm	3.52	4.27	5.04	100	121	143
Copper	ppm	1.05	1.18	1.64	100	113	157
Zinc	ppm	16.20	17.71	18.39	100	109	114