



West Central Research, Extension, & Education Center, North Platte

2023 Summer Cover Crop Variety Trial

UNIVERSITY of NEBRASKA
LINCOLN

Type	Species	Variety	Stand count (2ft ²)	Std err	Height (inches)	Std err	GC (%)	Std err	Biomass (Mg/ha)	Std err	CN ratio	Std err	CP (%)	Std err	TDN (%)	Std err	RFQ (%)	Std err	
Grasses																			
1	Sorghum-sudan	Queen	27	3	6.7	0.5	12.6	1.0	24.8	1.0	38	2.5	8	0.5	59	0.4	127	4	
2	Sorghum-sudan	WS902	30	2	6.9	0.3	17.6	1.1	32.6	3.2	48	5.8	7	0.7	56	1.8	115	9	
3	Sorghum-sudan	Sugar	35	3	7.3	0.4	16.1	0.6	34.2	4.1	50	3.7	6	0.6	56	1.5	108	8	
4	Sudan-grass	Piper	61	4	7.2	0.3	15.3	1.8	26.0	2.0	49	5.0	6	0.8	49	0.9	74	3	
5	Forage-sorghum	WS404	28	5	6.0	0.3	10.9	1.4	29.7	1.9	43	2.7	7	0.5	61	1.0	141	10	
6	Forage-sorghum	Bundle	25	3	5.6	0.3	7.1	1.7	28.9	3.0	45	5.7	7	0.9	60	0.9	128	5	
7	Pearl-millet	Tifleaf	42	5	6.7	1.0	8.0	0.8	28.6	1.2	38	1.1	8	0.1	56	1.5	106	6	
8	Foxtail-millet	German	101	8	5.7	0.3	10.8	0.6	15.2	2.6	39	1.8	8	0.2	60	1.0	111	4	
9	Corn	BMR grazing	10	1	9.4	1.0	7.2	0.4	24.5	4.3	41	2.9	8	0.5	67	1.4	169	9	
10	Teff	-	51	-	4.8	-	4.3	-	8.4	2.3	23	2.0	-	-	-	-	-	-	
Legumes																			
11	Sunnhemp	-	23	2	5.5	0.4	6.7	0.3	10.8	1.6	24	1.5	-	-	-	-	-	-	
12	Cowpea	Iron	22	2	6.3	0.4	7.4	0.5	14.6	3.6	21	1.2	-	-	-	-	-	-	
Broadleaves																			
13	Buckwheat	Mancan	38	1	7.5	0.6	28.0	2.0	3.5	0.6	27	3.7	-	-	-	-	-	-	
14	Sunflower	Black oil	8	0	4.9	0.2	8.2	1.5	48.5	3.3	25	2.3	-	-	-	-	-	-	
15	African cabbage	-	53	5	3.7	0.2	16.8	1.5	26.7	2.5	26	2.5	-	-	-	-	-	-	
Mixes																			
16	Simple mix	4-species	23	1	-	-	16.1	2.0	34.4	5.6	28	1.8	-	-	-	-	-	-	
17	Grazing mix	5-species	38	3	-	-	12.8	1.5	25.5	1.1	37	5.4	8	1.5	53	0.8	100	4	
18	Soil builder	6-species	27	2	-	-	9.6	0.8	39.6	7.5	29	1.2	-	-	-	-	-	-	
19	Pollinator	5-species	26	3	-	-	14.8	1.5	30.6	5.2	29	2.2	-	-	-	-	-	-	
20	High diversity	12-species	33	3	-	-	15.6	1.4	23.0	2.2	31	2.7	-	-	-	-	-	-	

†Std err: Standard error; GC: Ground Cover; C: Carbon; N: nitrogen; CP: Crude Protein; TDN: Total Digestible Nutrients; RFQ: Relative Forage Quality. The stand error value (n = 4) is for each corresponding parameter on the left column.

- ❖ Simple mix: sorghum-sudan (queen), sunnhemp, buckwheat, and sunflower
- ❖ Grazing mix: sudan-grass, pearl-millet, BMR corn, cowpea, and African cabbage
- ❖ Soil builder: sorghum-sudan (queen), forage sorghum (WS404), sunnhemp, cowpea, sunflower, and African cabbage
- ❖ Pollinator: forage sorghum (WS404), sunnhemp, cowpea, buckwheat, and sunflower
- ❖ High diversity: sorghum-sudan (queen), sudan-grass, forage sorghum (WS404), pearl millet, foxtail millet, BMR corn, teff, sunnhemp, cowpea, buckwheat, sunflower, and African cabbage
- ❖ Stand count was recorded 18 days after planting on July 14, 2023
- ❖ Height was recorded only in sole cover crops
- ❖ Cover crop height recorded at the time of stand count (i.e., 18 days after planting on July 14, 2023)
- ❖ Only 10 treatments focusing grass species were selected to assess forage potential of summer cover crops

Management details

Note: The pivot under which our plots were located does not have the capacity for variable rate irrigation. Thus, it received similar amounts of water as adjacent experiments with soybean.

Cooperator/site:	WCREEC/North Platte County
Soil type:	Cozad silt loam
Planting date:	June 26, 2023
Seeding depth:	1.5"
Soil moisture at planting:	Adequate at full profile
Implement/tools:	DCS research drill
Rows/plot:	6
Row spacing:	10"
Plot length:	30'
Alley width:	3'
Tillage:	No-till
Previous crop:	Soybean
Pre-plant herbicide:	Engenia 12 oz/acre, glyphosate 32 oz/acre at 15 GPA on 06/12/2023, and Paraquat 22 oz/acre, NIS 0.75% at 30 GPA on 06/28/2023
Fertilizer at planting:	None
Irrigation:	5"
Fertilizer N	None
Total precipitation during growing period:	8.3"
Termination date:	September 19, 2023