

Nebraska EXTENSION Know how. Know **now.**

Fall Annual Forages



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Nebraska Grazing Conference - 2013

Annual Forages

Warm Season Annuals

Late-spring or summer seeded:

- Millet (grazing & hay types)
- S X S hybrids
- Sorghum
- Sudangrass
- Crabgrass
- Teff
- Corn
- Several legumes



Warm-season annuals

- ❑ **Planting date:**
 - Mid-May to August (soil 60 – 70°F)
 - Less yield (regrowth potential) with later planting
- ❑ **Seeding rate:**
 - Check with seed supplier or Extension office
 - **NebGuide G2183** (*Summer Annual Forage Grasses*)
- ❑ **Fertilization:**
 - Soil test
 - **Extension Circ.: EC 155** (*Nutrient Management for Agronomic Crops in Nebraska*)
 - 40 – 80 lb N/acre (high end when irrigated)

Range of dry matter yield for summer annual forages under irrigated conditions.

Forage	Tons/acre
Sudangrass	4.1 to 4.8
Sorghum-sudangrass hybrid	4.2 to 5.3
Forage sorghum	4.4 to 5.3
Pearl millet	3.8 to 4.5
Foxtail millet	2.8 to 3.8
Teff	2.6 to 3.8

* Yield ranges include the primary and regrowth harvest for all forages except forage sorghum and foxtail millet.



September yield of irrigated, warm-season annual forages planted July 11 or July 27, 2007, North Platte, NE.

Forage (planted July 11)	September yield (Tons/acre)
'Grazex 725 BMR' sorghum-sudangrass	4.18
'White Wonder' foxtail millet	2.43
'Tiffany' teff	2.36
Forage (planted July 27)	
'Grazex 725 BMR' sorghum-sudangrass	3.96
'White Wonder' foxtail millet	2.83
'Tiffany' teff	2.34

Annual Forages

Summer or late-summer seeded (for fall / winter forage):

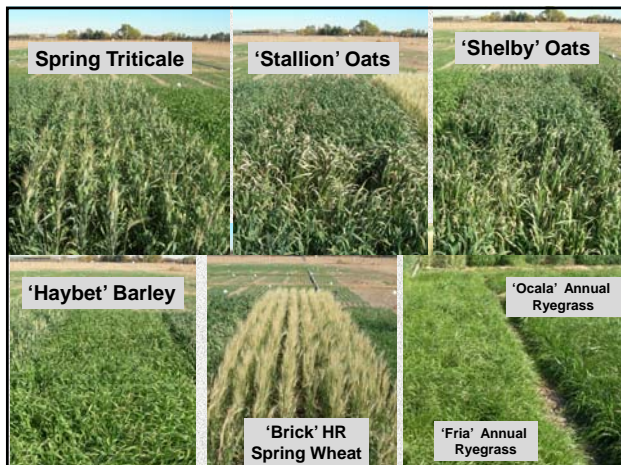
Oats, barley, spring triticale, spring wheat, ryegrass, peas, and/or turnips, other brassicas

- **Planting date:** late July through August

Winter wheat, rye, triticale

Planting date: late August – September

- Some fall/winter forage, mostly the following spring



Fall small grain harvest date, height at harvest and forage yield, North Platte, NE – 2012^{1,2}.

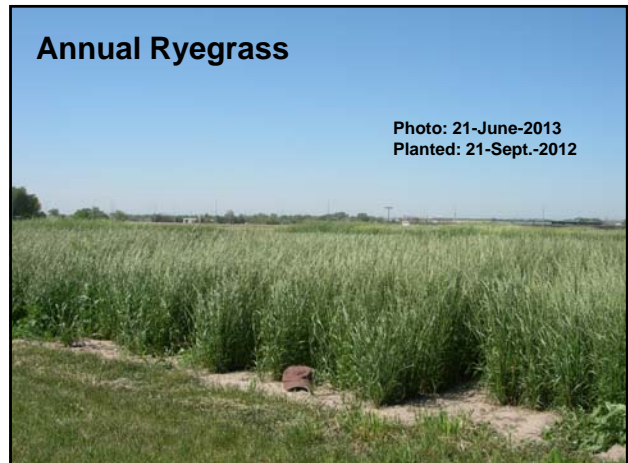
Entry	Harvest date	Height (inches)	Forage yield ² (tons/acre)
Spring triticale	29-Oct	38	4.48 ^A
'Shelby' oats	29-Oct	35	4.07 ^{AB}
'Haybet' barley	29-Oct	30	3.88 ^B
'Brick' hard red spring wheat	29-Oct	31	3.17 ^C
'Stallion' oats	29-Oct	32	3.08 ^C
Winter wheat	29-Oct	15	2.38 ^D
LSD _{0.05}			0.56

¹ All entries planted on August 13, 2012.
² Dry matter basis.
^{ABC} Means followed by unlike letters significantly differ (P < 0.05).

Fall Annual Forages - NGC

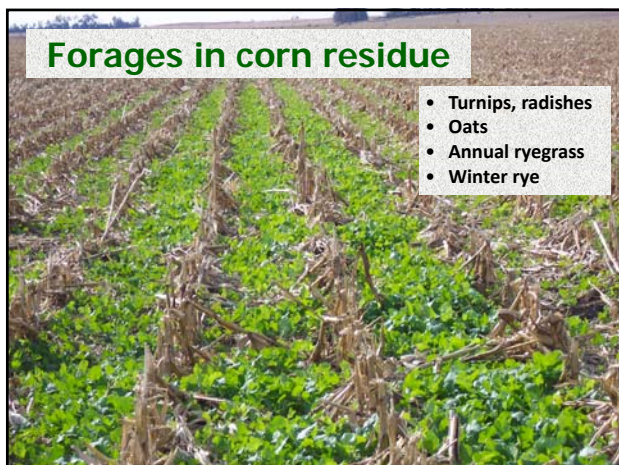
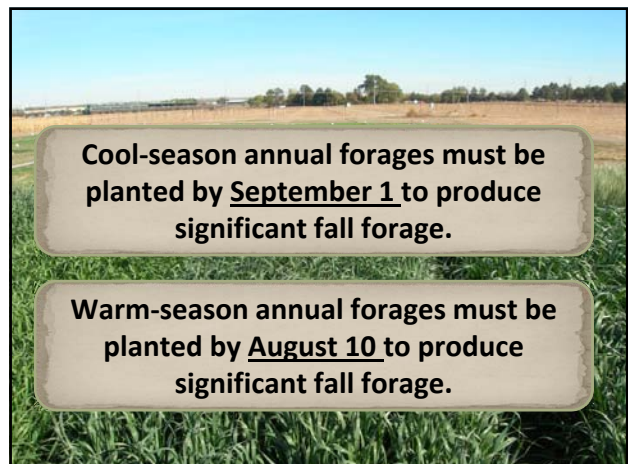
Small grain forage crude protein (CP), acid detergent fiber (ADF) and total digestible nutrients (TDN) ¹ . North Platte – 2012.			
Entry	CP	ADF	TDN
	----- (%) -----		
Wheat Border	21.6 ^A	35 ^A	64 ^A
'Ocala' annual ryegrass	19.1 ^{AB}	32 ^A	67 ^A
'Stallion' oats	18.3 ^{AB}	37 ^A	62 ^A
'Fria' annual ryegrass	18.0 ^{AB}	39 ^A	60 ^A
Spring triticale	15.9 ^{AB}	37 ^A	61 ^A
'Haybet' barley	14.8 ^B	34 ^A	65 ^A
'Shelby' oats	14.4 ^B	38 ^A	60 ^A
'Brick' hard red spring wheat	13.5 ^B	40 ^A	59 ^A
LSD _{0.05}	6.7	10.4	11.7

¹ Planted August 13. Harvested October 29. ^{ABCD} Means followed by unlike letters significantly differ (P < 0.05).



Late summer planted annual ryegrass forage yield, North Platte, NE: 2012 - 2013.				
Planting date - Entry	29-Oct Harvest	30-Nov Harvest	10-June Harvest	Total yield ¹
13-Aug.-2012	----- tons/acre -----			
'Ocala' annual ryegrass	1.33	0.28	2.06	3.67
'Fria' annual ryegrass	1.18	0.29	1.55	3.02
21-Sept.-2012				
'Ocala' annual ryegrass	-	-	3.69	3.69
'Fria' annual ryegrass	-	-	3.59	3.59

¹ Dry matter basis.



Turnips in seed corn residue



Grazing



Grazing Annual Forages

- **Grazing not as efficient as haying.**
 - Grazing interrupts plant growth, may reduce potential growth.
 - Trampling losses.
- **Start at appropriate stage or height.**
- **Simple rotations beneficial.**
- **Staggered plantings (warm-season annuals).**

Grazing Annual Forages

- **Stocking flexibility.**
- **Nearby 'backup' pasture.**
- **Potential of nitrates and prussic acid**
- **Lush green pasture (cool-season).**
 - Dry hay available
 - Grass tetany (high magnesium mineral)
- **NebGuide G2183** (*Summer Annual Forage Grasses*)

Start grazing at appropriate stage or height

- **Small grains (cool-season)**
 - Spring planted: 6 to 8 inches (May 15 – 25)
 - Late summer planted: could allow more growth (October 1 +)
- **Warm-season annuals**
 - Sudangrass/pearl millet: 15 to 20 inches
 - S-S hybrids: 18 – 24 inches

Carrying Capacity – Stocking Rates: Annual Forages

- 1 AU (animal unit) = 1000 lb animal
 - 1 AUD (animal unit day) = 26 lb forage
 - 1 AUM (animal unit month) = 780 lb forage
 - Cow-calf pair = 1.5 AU
 - Weaned calf (500 lb) = 0.5 AU
-
- Assuming 50% grazing efficiency:
1.3 AUM per ton of potential forage

Fall Annual Forages - NGC

Carrying capacity: Warm-season annuals:
(Sorghum-sudangrass hybrids, sudangrass, pearl millet)

Potential hay yield Tons/acre	Grazing efficiency (%)	Cow-calf pairs/acre for:				
		AUM/acre	AUD/acre	1 month	2 months	3 months
2	40	2.05	62	1.37	0.68	0.46
3	40	3.08	92	2.05	1.03	0.68
4	40	4.10	123	2.74	1.37	0.91
5	40	5.13	154	3.42	1.71	1.14
2	50	2.56	77	1.71	0.85	0.57
3	50	3.85	115	2.56	1.28	0.85
4	50	5.13	154	3.42	1.71	1.14
5	50	6.41	192	4.27	2.14	1.42
2	60	3.08	92	2.05	1.03	0.68
3	60	4.62	138	3.08	1.54	1.03
4	60	6.15	185	4.10	2.05	1.37
5	60	7.69	231	5.13	2.56	1.71

Carrying capacity: Small grain cereals:
(Oats, barley, spring triticale, turnips or mixtures)
Planted late July or August. Grazing period October and November.

Potential hay yield Tons/acre	Grazing efficiency (%)	Cow-calf pairs/acre for:			
		AUM/acre	AUD/acre	1 month	2 months
1.5	40	1.54	46	1.03	0.51
2.5	40	2.56	77	1.71	0.85
3.5	40	3.59	108	2.39	1.20
1.5	50	1.92	58	1.28	0.64
2.5	50	3.21	96	2.14	1.07
3.5	50	4.49	135	2.99	1.50
1.5	60	2.31	69	1.54	0.77
2.5	60	3.85	115	2.56	1.28
3.5	60	5.38	162	3.59	1.79

Fall / Winter Grazing Options

- Warm-season annuals
 - ✓ Stockpiled (standing)
 - ✓ Windrow grazing



Fall / Winter Grazing Options

- Cool-season annuals
 - ✓ Grazing until freeze-down
 - ✓ Windrow grazing



Oats + Turnips
Nov. 1, 2004



Oats
Oct. 20, 2011



Dec. 21, 2011