

## Annual Crops For Emergency Forage—Otter Tail County

Cooperator: David Sjostrom  
Nearest Town: Pelican Rapids

For details about the experiment, see  
“On-Farm Cropping Trials January 2004” pages 27-28.

### Purpose of Study:

Wet, cool spring weather and/or alfalfa winter injury often results in the need for emergency forage plantings at less-than-optimum planting dates. Our objective was to compare the relative yield, quality, and emergency forage potential of a range of annual crops as influenced by planting date in west central Minnesota.

### Results:

When planting was delayed until mid-June to early July, relatively shorter season corn hybrids and BMR forage sorghum produced forage with the greatest milk production potential per acre. Sudangrass, sorghum-sudan, hybrid pearl millet, and Japanese millet had lower milk production potential per ton of forage but greater crude protein content than corn silage or forage sorghum. Thus, though their DM yields totaled over two cuttings were competitive with corn for the July 2 planting date, their milk yield per acre was less. Nevertheless, where a multi-cut or grazing crop is needed, all would be good options. Millets offer the advantage of no prussic acid poisoning potential. Foxtail millets produced good one-cut yields from late planting dates, but quality was only moderate and may have been improved by harvesting earlier at less mature stages (boot or pre-boot). But foxtail millets produced consistently thick, uniform stands that were competitive with weeds.

*Total season forage yield, milk production potential<sup>1</sup>, and season average forage quality<sup>2</sup> of single- and multiple-cut annual crops as influenced by planting date at Pelican Rapids, MN, 2003. Listed in descending order of milk production potential per acre within planting dates.*

Species	Variety	Harvest(s) Days After Planting	Total DM Yld (ton/a)	Total <sup>1</sup> Milk/Acre (lb/a)	Season <sup>1</sup> Milk/Ton (lb/ton)	Season CP %DM	Season <sup>2</sup> RFQ
<b>May 16 Planting</b>							
Corn	81 RM	98 (23K) <sup>3</sup>	5.90	19,800	3,340	8.1	na
Corn	95 RM	104 (21K)	6.75	19,300	2,850	7.3	na
Corn	103 RM	104 (18K)	4.85	15,100	3,150	7.9	na
BMR Forage Sorghum	Dairy Master	104	4.38	12,400	2,830	7.7	144
BMR Sorghum-Sudan	Drip-O-Honey	55,82,124	4.62	9,980	2,170	14.3	123
Sudangrass	Greenleaf	55,82,124	4.76	9,100	1,930	13.8	108
Foxtail Millet	German	77	5.22	8,620	1,650	10.8	94
Sorghum-Sudan	Greantreat IV	55,82,124	4.34	8,380	1,930	15.1	111
Pearl Millet	PP102M Hybrid	55,82,124	3.48	6,840	1,970	15.7	115
Soybean <sup>4</sup>	RM 2.5	104	2.90	6,810	2,330	19.2	138
Barley/Pea	Robust/Trapper	55	3.40	5,490	1,620	14.0	87
Soybean <sup>4</sup>	RM 0.7	95	2.87	5,450	2,190	18.7	124
Barley	Westford	55	3.06	5,240	1,710	16.1	97
Foxtail Millet	Manta Siberian	66	2.93	4,570	1,560	11.1	88
Japanese Millet		55,82,124	2.34	4,560	1,940	14.9	111
Oat/Pea	Jerry/Trapper	55	3.09	3,820	1,250	11.5	69
Chickling Vetch	AC Greenfix	62	1.38	2,990	2,170	24.0	143
Alfalfa <sup>5</sup>		62,91	1.04	2,970	2,860	21.3	209
LSD 0.05			0.89	2,550	220	2.0	13

<sup>1</sup> Milk/acre and milk/ton calculated using Milk2000, Univ. of Wisconsin

<sup>2</sup> Weighted season averages; RFQ = relative forage quality index

<sup>3</sup> Corn plant population at harvest (x1000, per acre); many corn plots were thinner than desired for silage production.

<sup>4</sup> Deer damaged many soybean plots, so yield estimates, particularly for the July 2 planting, are low.

<sup>5</sup> Potato leafhopper injury combined with August drought stunted alfalfa yields, particularly for the July 2 planting.

### Partnership or funding information:

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## Annual Crops For Emergency Forage—Otter Tail County (continued)

Total season forage yield, milk production potential<sup>1</sup>, and season average forage quality<sup>2</sup> of single- and multiple-cut annual crops as influenced by planting date at Pelican Rapids, MN, 2003. Listed in descending order of milk production potential per acre within planting dates.

Species	Variety	Harvest(s) Days After Planting	Total DM Yld (ton/a)	Total Milk/Acre (lb/a)	Season Milk/Ton (lb/ton)	Season CP %DM	Season <sup>2</sup> RFQ
<b>June 16 Planting</b>							
Corn	95 RM	112 (28K) <sup>3</sup>	5.43	16,500	3,010	7.2	na
Corn	81 RM	99 (27K)	5.24	13,500	2,580	6.2	na
BMR Forage Sorghum	Dairy Master	112	4.41	11,600	2,640	8.9	134
Corn	103 RM	112 (27K)	4.32	11,600	2,670	7.2	na
Sudangrass	Greenleaf	38,64,93	3.71	7,610	2,050	16.3	118
Sorghum-Sudan	Greentreat IV	38,64,93	3.15	6,730	2,130	17.7	125
BMR Sorghum-Sudan	Drip-O-Honey	38,64,93	2.81	6,480	2,310	18.1	136
Pearl Millet	PP102M Hybrid	38,64,93	2.80	6,440	2,300	19.5	138
Soybean <sup>4</sup>	RM 2.5	99	2.29	6,370	2,790	17.9	180
Foxtail Millet	German	64	3.43	6,090	1,780	11.4	98
Soybean <sup>4</sup>	RM 0.7	85	2.05	5,610	2,740	21.9	186
Barley/Pea	Robust/Trapper	60	1.74	3,380	1,940	13.5	100
Barley	Westford	60	1.30	3,000	2,300	19.8	128
Foxtail Millet	Manta Siberian	51	1.73	2,950	1,700	15.0	97
Chickling Vetch	AC Greenfix	60	0.87	1,850	2,120	20.9	132
Oat/Pea	Jerry/Trapper	60	1.14	1,710	1,500	15.0	76
Japanese Millet		38,64,93	0.58	1,190	2,040	19.1	123
Alfalfa <sup>5</sup>		60	0.35	1,090	3,130	19.7	240
LSD 0.05			0.89	2,550	220	2.0	13
<b>July 2 Planting</b>							
BMR Forage Sorghum	Dairy Master	96	3.41	9,540	2,810	11.3	147
Corn	81 RM	96 (19K) <sup>3</sup>	2.51	7,280	2,860	9.0	na
Corn	95 RM	96 (15K)	2.50	7,120	2,830	8.5	na
Sorghum-Sudan	Greentreat IV	44,77	2.89	6,180	2,140	18.1	122
Sudangrass	Greenleaf	44,77	2.97	6,070	2,080	15.8	117
Pearl Millet	PP102M Hybrid	44,77	2.64	5,520	2,120	18.3	123
Foxtail Millet	German	69	2.61	5,520	2,140	14.3	116
BMR Sorghum-Sudan	Drip-O-Honey	44,77	2.22	4,920	2,230	17.5	128
Corn	103 RM	96 (20K)	2.76	4,890	2,180	9.6	na
Foxtail Millet	Manta Siberian	51	1.52	3,260	2,150	17.5	120
Soybean <sup>4</sup>	RM 2.5	83	1.23	3,200	2,600	18.6	168
Oat/Pea	Jerry/Trapper	51	1.25	3,040	2,300	20.0	125
Barley/Pea	Robust/Trapper	57	1.26	2,940	2,360	18.1	131
Barley	Westford	69	0.86	2,210	2,580	26.2	154
Japanese Millet		44,77	1.06	2,060	1,900	18.3	111
Chickling Vetch	AC Greenfix	77	0.42	880	2,120	20.7	131
Soybean <sup>4</sup>	RM 0.7	na	na	na	na	na	na
Alfalfa <sup>5</sup>		na	0.00	na	na	na	na
LSD 0.05			0.89	2,550	220	2.0	13

<sup>1</sup> Milk/acre and milk/ton calculated using Milk2000, Univ. of Wisconsin

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