

FORAGE SUITABILITY GROUP Not Suited

FSG No.: G102BY000SD

Major Land Resource Area: 102B - Till Plains

Physiographic Features

The soils in this group are in various landscape positions.

| | <u>Minimum</u> | <u>Maximum</u> |
|--------------------------|----------------|----------------|
| Elevation (feet): | 980 | 1640 |
| Slope (percent): | 0 | 60 |
| Flooding: | | |
| Frequency: | None | Frequent |
| Duration: | None | Very Long |
| Ponding: | | |
| Depth (inches): | 0 | 18 |
| Frequency: | | |
| Duration: | None | Very Long |
| Runoff Class: | Negligible | Very high |

Climatic Features

Annual precipitation varies widely from year to year in MLRA 102B. Average annual precipitation for all climate stations listed below is about 24 inches. Over 75 percent of that occurs during the months of April through September. On average, there are about 30 days with greater than .1 inches of precipitation during the same timeframe.

Average annual snowfall ranges from 25 to 39 inches across the MLRA. Snow cover at depths greater than 1 inch range from 15 days at Bridgewater to 79 days at Madison.

Average July temperatures are about 75⁰F and average January temperatures are about 15⁰F. Recorded temperature extremes in the MLRA are a low of -36 degrees and a high of 110 degrees both recorded at Sioux Falls.

Average annual wind speeds at Sioux Falls are 11 mph with the highest wind speeds occurring during March and April. It is cloudy an average of 157 days a year at Sioux Falls, with the greatest incidence of cloudy weather occurring in November and December. Average morning relative humidity in June is 82 percent and average afternoon humidity is 59 percent.

The climate data listed in the tables below represent high and low ranges and averages for the climate stations and dates listed. For additional climate data, access the National Water and Climate Center at <http://www.wcc.nrcs.usda.gov>.

| | From | To |
|---|-------------|-----------|
| Freeze-free period (28 deg)(days): (9 years in 10 at least) | 139 | 154 |
| Last Killing Freeze in Spring (28 deg): (1 year in 10 later than) | May 13 | May 03 |
| Last Frost in Spring (32 deg): (1 year in 10 later than) | May 24 | May 17 |
| First Frost in Fall (32 deg): (1 year in 10 earlier than) | Sep 10 | Sep 19 |

| | From | To |
|--|-------------|-----------|
| First Killing Freeze in Fall (28 deg): (1 year in 10 earlier than) | Sep 19 | Sep 30 |
| Length of Growing Season (32 deg)(days): (9 years in 10 at least) | 117 | 133 |
| Growing Degree Days (40 deg): | 4565 | 5314 |
| Growing Degree Days (50 deg): | 2600 | 3179 |
| Annual Minimum Temperature: | -25 | -20 |
| Mean annual precipitation (inches): | 23 | 25 |

Monthly precipitation (inches) and temperature (F):

| 2 years in 10: | <u>Jan</u> | <u>Feb</u> | <u>Mar</u> | <u>Apr</u> | <u>May</u> | <u>Jun</u> | <u>Jul</u> | <u>Aug</u> | <u>Sep</u> | <u>Oct</u> | <u>Nov</u> | <u>Dec</u> |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Precip. Less Than | 0.13 | 0.19 | 0.63 | 1.12 | 1.56 | 1.86 | 1.71 | 1.47 | 1.33 | 0.71 | 0.20 | 0.26 |
| Precip. More Than | 0.73 | 1.35 | 2.33 | 3.33 | 4.79 | 5.83 | 4.96 | 4.17 | 3.71 | 2.66 | 1.63 | 1.04 |
| Monthly Average: | 0.47 | 0.62 | 1.64 | 2.36 | 3.26 | 3.70 | 3.17 | 2.80 | 2.62 | 1.66 | 1.04 | 0.67 |
| Temp. Min. | 2.1 | 8.2 | 20.8 | 34.5 | 45.9 | 55.5 | 60.8 | 57.9 | 48.3 | 36.5 | 22.5 | 8.0 |
| Temp. Max. | 29.9 | 35.8 | 48.2 | 64.6 | 75.4 | 84.7 | 89.3 | 86.3 | 78.1 | 66.3 | 48.0 | 32.9 |
| Temp. Avg. | 15.1 | 21.3 | 33.5 | 48.1 | 59.9 | 69.4 | 74.7 | 71.9 | 62.2 | 50.2 | 34.2 | 19.7 |

| <u>Climate Station</u> | <u>Location</u> | <u>From</u> | <u>To</u> |
|------------------------|---------------------------|-------------|-----------|
| SD1579 | Centerville, SD | 1961 | 1990 |
| SD5090 | Madison Research Farm, SD | 1962 | 1990 |
| SD5228 | Marion, SD | 1961 | 1990 |
| SD5481 | Menno, SD | 1961 | 1990 |
| SD7667 | Sioux Falls, SD | 1961 | 1990 |
| SD8472 | Tyndall, SD | 1961 | 1990 |
| SD8622 | Vermillion, SD | 1961 | 1990 |
| SD9502 | Yankton, SD | 1961 | 1990 |
| SD1032 | Bridgewater, SD | 1961 | 1990 |
| SD1392 | Canton, SD | 1961 | 1990 |

Soil Interpretations

The soils in this group possess one or more physical or chemical properties that make their economic use for forage production difficult or impossible.

| | | | |
|---|---------------------|----|---------------------|
| Drainage Class: | Excessively drained | To | Very poorly drained |
| Permeability Class: (0 - 40 inches) | Very slow | To | Rapid |
| Frost Action Class: | Low | To | High |

| | <u>Minimum</u> | <u>Maximum</u> |
|---|----------------|----------------|
| Depth: | 0 | |
| Surface Fragments >3" (% Cover): | | |
| Organic Matter (percent): (surface layer) | 0.0 | 7.0 |
| Electrical Conductivity (mmhos/cm): (0 - 24 inches) | 0 | 32 |
| Sodium Absorption Ratio: (0 - 12 inches) | 0 | 25 |
| Soil Reaction (1:1) Water (pH): (0 - 12 inches) | 5.6 | 9 |
| Available Water Capacity (inches): (0 - 60 inches) | 0 | 12 |
| Calcium Carbonate Equivalent (percent): (0 - 12 inches) | 0 | 25 |

Adapted Species List

Unless the severe chemical and/or physical restrictions of these soil have been corrected no forage species can be expected to be economically produced on them.

Soil Limitations

These soils have severe limitations that make their use for forage production impractical or impossible. They are too steep, shallow, wet, stony, or possess unfavorable chemical properties.

Management Interpretations

If the severe restrictions have been reduced or removed the soils should be managed the same as the group that most closely resembles them without the restrictions. For instance, if a soil has been placed in this group because of stoniness and the stones have been removed, it should be managed under the same group that the non-stony phase is managed under.

FSG Documentation

State Correlation:

This site has been correlated with the following states: South Dakota

Forage Suitability Group Approval

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Original Date:

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Approval Date: 1/8/03