

# Fertilizing Established Grass, Native Grass, Irrigated Grass and New Seedlings of Grass

SF-721 (Revised), October 1992

W. C. Dahnke, Soil Testing and Soil Science Dept.

C. Fanning, Extension Soils Specialist

A. Cattnach , Extension Soils/ Sugarbeet Specialist

Yields in North Dakota are limited largely by the available water supply. The plant nutrients that most often limit production are nitrogen and phosphorus.

## Nutrient Recommendations:

Nitrogen fertilizer recommendations for grasses are not based on a nitrate-nitrogen test. The reason for this is that the soil nitrate-nitrogen level under a perennial crop such as grass, alfalfa, sweet clover, etc., is always at a very low level. This is because when a crop is continuously growing on the soil, accumulations of nitrate-nitrogen never occur unless excessive amounts were applied. The nitrogen, phosphate and potash recommendations for tame and native grass are given in Table 1.

### Nutrient recommendations for established grass, native grass, irrigated grass, and new seedlings of grass.

		Soil Test Phosphorus, ppm					
Yield goal	Soil N plus fertilizer N required	Bray-I Olsen	VL	L	M	H	VH
			0-5	6-10	11-15	16-20	21+
ton/a	lb/acre-2'				lb P2O5/acre		
2	50		40	20	10	0	0

		Soil Test Potassium, ppm					
Yield goal	Soil N plus fertilizer N required	Bray-I Olsen	VL	L	M	H	VH
			0-40	41-80	81-120	121-160	161+
ton/a	lb/acre-2'				lb K2O/acre		
2	50		70	50	25	0	0

Nitrogen recommendation = 25 YG

Bray-I P recommendation = 45.0-2.5 STP

Olsen P recommendation = 45.00-3.45 STP

Potassium recommendation = 80.00-0.53 STK

The abbreviations used in the equations are as follows:

- YG = yield goal
- STN = soil test nitrogen
- STP = soil test phosphorus
- STK = soil test potassium
- SDA = sampling date adjustment
- PCC = previous crop credit

## Time of Application:

Fall nitrogen application on sandy soils is not recommended. On all other soils apply fertilizer in late fall or early spring. Continued application of nitrogen in late fall or early spring will favor the growth of cool season grasses at the expense of warm season grasses in native pasture. If you want to promote the growth of warm season grasses, apply nitrogen in early summer.

## Other Nutrients:

Sulfur deficiencies are not common but may occur on sandy soils after several heavy applications of nitrogen. If your grass appears to be deficient in nitrogen (yellow) after an application of nitrogen, test for sulfur. Response to iron, zinc, copper or manganese by grass is unlikely in North Dakota.

## Grass Tetany:

This is a disease that sometimes occurs when lactating animals eat nitrogen fertilized grass in early spring. Apparently it is partly associated with lower levels of magnesium found in lush growth that occurs during cool wet springs. It occurs most often on soils high in potassium and low in magnesium. While most soils in North Dakota are high in potassium, they are also high in magnesium, reducing the likelihood of this disease occurring.

---

**SF-721** (Revised), October 1992

---

County Commissions, North Dakota State University and U.S. Department of Agriculture cooperating. North Dakota State University does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, disability, age, status as a U.S. veteran, sexual orientation, marital status, or public assistance status. Direct inquiries to the Vice President for Equity, Diversity and Global Outreach, 205 Old Main, (701) 231-7708. This publication will be made available in alternative formats for people with disabilities upon request, 701 231-7881.

**INFORMATION ACADEMICS RESEARCH EXTENSION PUBLICATIONS CALENDAR WEATHER DIRECTORY**

[Information for Prospective Students](#)

NDSU is an equal opportunity institution

This information may be photocopied for noncommercial, educational purposes in its entirety with no changes.  
Requests to use any portion of the document should be sent to [NDSU.permission@ndsu.edu](mailto:NDSU.permission@ndsu.edu).  
North Dakota State University Agriculture and University Extension  
Dept. 7070, Morrill 7, P.O. Box 6050, Fargo, ND 58108-6050