

Northern Idaho Fertilizer Guide

Grass Seedings for Conservation Programs

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These fertilizer guidelines, developed by the University of Idaho and Washington State University, are based on relationships between soil tests and crop yield responses. The fertilizer rates suggested are based on research results and are designed to produce above-average grass stands with optimal ground cover if other factors are not limiting. Thus, the fertilizer guide assumes good management. Fertilizer recommendations may differ slightly with different grass varieties. Recommendations will differ drastically if legumes are included in the seeding mixture.

The use of a soil test is the best way to ensure the proper type and amount of fertilizer to be applied. Without a soil test an estimate of fertilizer needs can lead to improper fertilization.

The suggested fertilizer rates will be accurate for the field provided (1) the soil sample was properly taken and is representative of the areas to be fertilized, and (2) the crop and fertilizer history supplied is complete and accurate. For help in obtaining a proper soil sample, confer with the extension educator in your county.

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Nitrogen (N) is the most important nutrient for establishing and maintaining grass stands. Nitrogen, however, is not important for legumes in a grass/legume mixture. The higher the rainfall the more N needed (Table 1). Response to N is generally best when the fertilizer is applied as split applications, with some applied in the fall and some applied in the spring. Split applications also are more expensive, however; two separate applications nearly double the application cost. Thus, a single annual application is recommended. A fall application may be the most convenient because fall work demands may be less and soil conditions may be drier. Fall applications, however, may result in substantial overwinter losses of N through leaching, runoff, and

denitrification. On the other hand, spring applications may be hampered due to wet soil conditions and time limitations created by heavy spring workloads.

The N fertilizer increases the vigor of the grass crop, which helps it compete with weeds. The increased grass vigor actually enhances control of weeds with herbicides.

Table 1. Nitrogen (N) fertilizer rates suggested for good stand vigor on established stands of grass.

Precipitation	Suggested N rate
(inches/year)	(lb/acre)
< 18	30 to 40
18 to 20	35 to 50
20 to 22	40 to 55
22+	45 to 60

Nitrogen is also necessary for grass seedling establishment. The rate required will depend on past cropping and fertilizer history. Nitrogen fertilizer recommendations for grass seedings range from 20 pounds N per acre when the previous crop was peas or lentils to 40 pounds N per acre for grass seedings when the previous crop was grain. When following cereal crops, an additional 15 pounds N per acre is needed for each ton of straw residue incorporated into the soil. A nitrogen application is not necessary for a grass seeding if the field is in fallow the year before seeding.

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Phosphorus (P) is important for seedling vigor and good root development. Phosphorus is most efficiently used when it is incorporated into the seedbed before seedling establishment since P is not mobile in soils. For established stands, P can be surface-applied in the fall. Phosphorus needs on established grass or on seedbeds before seeding can be determined effectively by a soil test (Table 2).

**Table 2. Phosphorus fertilizer rates for grass seedings
based on a soil test.**

Soil test P (0 to 12 inches)¹
