

N I A F G G a Pa

by Robert L. Mahler

These fertilizer guidelines have been developed by the University of Idaho and see University of Idaho Bulletin 704, Soil Sampling, or consult your county extension educator.

Harvested grasses remove large quantities of nutrients from the soil. Incorporate fertilizer into the soil as you prepare the seedbed; apply additional amounts periodically over the life of the stand to maintain optimum nutrient levels.

Table 1. Nitrogen fertilizer rates for grass pastures based on annual precipitation.

Annual precipitation	N application
(inches)	(lb/acre)
less than 20	80 to 110
20 to 22	100 to 130
22 to 25	120 to 145
more than 25	135 to 160
irrigated pastures	140 to 170

On nonirrigated land, make one of the two recommended applications as early in the spring as possible (February to April) and the second application in early June. On irrigated grass pastures, apply the first of the three to five applications as early in spring as possible and make subsequent applications every 5 to 7 weeks.

Phosphorus—Conduct a soil test to assess the P status of grass pastures. Table 2 lists P application rates required for optimal forage production, as determined by a soil test. On established stands, fall broadcast applications of P fertilizers are more effective than spring applications. On established stands, you may apply enough P to last for 2 or 3 years. The P fertilizer application rates suggested in Table 2 should be increased by 25 percent if your soil contains large amounts of volcanic ash.

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

Soil test P (0 to 12 inches) ¹			P ₂ O ₅ application rate ²		
NaOAc	Bray	NaHCO ₃	1-year supply	2-year supply	3-year supply
(ppm)	(ppm)	(ppm)	(lb/acre)	(lb/acre)	(lb/acre)
0 to 2	0 to 20	0 to 8	50	90	110
2 to 4	20 to 40	8 to 14	35	45 to 55	70 to 80
4 to 8	40 to 80	14 to 20	0	10 to 20	20 to 40
over 8	over 80	over 20	0	0	0

¹ Soil test P can be determined by three different procedures: sodium acetate (NaOAc), Bray I method, or sodium bicarbonate (NaHCO₃). Sodium bicarbonate should not be used on soils with pH values less than 6.2. Use the column indicated by your soil test report.

² P₂O₅ × 0.44 = P, or P × 2.29 = P₂O₅.

Established grass pastures

Nitrogen (N), phosphorus (P), potassium (K), and sulfur (S) are nutrients essential for plant growth but are often deficient in northern Idaho grass pastures. Conversely, calcium (Ca), boron (B), copper (Cu), chlorine (Cl), iron (Fe), manganese (Mn), molybdenum (Mo), and zinc (Zn) deficiencies are rare in northern Idaho grass pastures.

Animals foraging for grass in the spring may suffer grass tetany, caused by low levels of soil magnesium (Mg).

Nitrogen—Soil sampling for N fertilizer recommendations is generally not practical; available N is mobile in soils and can be leached beyond the root zone with spring precipitation or irrigation.

Grass pastures will usually respond to N applications in northern Idaho. Table 1 lists suggested N application rates based on annual precipitation. Highest recommended N application rates are on irrigated grass pastures. These suggested rates are yearly requirements and should be split into at least two applications for nonirri-

Potassium —Grass pastures remove large quantities

, select the best-adapted grass varieties

rogen fertilization increases forage pro-
greatly improving its quality.

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