Table 6 (continued)

Crop: **ESTABLISHED**	Total Amount of Nutrients Recommended and Suggested Method of Application	Nitrogen (N)	Recommended Nutrients Based on Soil Tests: Soil Test Phosphorus Category Low	Medium	Optimum	Excessive	Soil Test Potassium Category Low	Medium	Optimum	Excessive
		lbs N / A	lbs P205 / A				lbs K20 / A			
EASTERN GAMAGRASS and	Total recommended	200-240	60-90	20-60	0	0	90-120	30-90	20-30	0
IMPROVED BERMUDAGRASSES	Topdress at greenup	50-60	60-90	20-60	0	0	90-120	30-90	20-30	0
Yield goal: 5 tons / A	Topdress after first cutting/grazing	50-60	0	0	0	0	0	0	0	0
	Topdress after second cutting/grazing	50-60	0	0	0	0	0	0	0	0
	Topdress after third cutting/grazing	50-60	0	0	0	0	0	0	0	0

Table 6 NOTES:

Where ranges of nutrients are indicated for phosphorus and potassium, precise amount of plant nutrient required depends upon the numerical soil test index value for that nutrient. Nutrient recommendations for most forages were developed for hay production systems. Where no grazing designation for a crop is given, pastured-based producers may modify the timing and rate of nutrient applications as long 1) the total annual application rate does not exceed the total annual recommendation for each nutrient, and 2) nutrient application timing complies with "Nutrient Application Guidelines," Section I-D, of this manual.

*Nitrogen application is not recommended for alfalfa, alfalfa-grass, clover, clover-grass, or birdsfoot trefoil production, hovever, use of commercially available fertilizer formulations may result in application of up to 50 lb N / acre when fertilizer formlation and application rate is determined by crop P2O5, K2O, S, or other nutrient needs.
Organic waste nitrogen application for maintenance of alfalfa, alfalfa-grass, clover, clover-grass, or birdsfoot trefoil is not recommended because it is an agronomically inefficient use of applied nutrients. Organic waste nitrogen may be applied to alfalfa, alfalfa-grass, clover, clover-grass, or birdsfoot trefoil stands as necessary for organic waste disposal when nutrient efficient alternatives for organic waste disposal are not available, at rates up to 140 lb/A plant available N for 4 tons/A yield goal. For yield goals above 4 tons/A, increase organic waste plant available N rate 35 lb/A for each ton of expected yield above 4 tons/A. Apply half of total rate in early spring (March) and half after first cutting.

For alfalfa & alfalfa-grass mix yield goals above 4 tons / A, adjust P2O5 as follows:
1) If phosphorus soil text index is less than 100, Increase P2O5 by 5 lb / A for each ton of expected yield above 4 tons / A.
2) If phosphorus soil test index is greater than 100, no adjustment is necessary.

For alfalfa & alfalfa-grass mix yield goals above 4 tons / A, increase K2O by 70 lb/A for each ton of expected yield above 4 tons/A, regardless of potassium soil test index.

For clover and clover-grass mixture yield goals above 4 tons / A, adjust P2O5 as follows:
1) If phosphorus soil test index is less than 100, increase P2O5 by 5 lbs / A for each ton of expected yield above 4 tons / A.
2) If phosphorus soil test index is greater than 100, no adjustment is necessary.

For clover and clover-grass mixture yield goals above 4 tons / A, increase K2O by 70 lbs / A for each ton of expected yield above 4 tons / A regardless of potassium soil test index.

Nitrogen recommendations for orchardgrass and reed canarygrass assume 4 tons/A yield. For yield above 4 tons/A, increase N application by a total of 50 lb/A for each ton of additional expected yield above 4 tons/A.

Nitrogen recommendations for perennial ryegrass, smooth bromegrass and timothy assume 3 tons/A yield. For yield above 3 tons/A, increase N application by a total of 45 lb/A for each ton of additional expected yield above 3 tons/A.

Nitrogen recommendations for tall fescue assume 5 tons/A yield. For yield above 5 tons/A, increase N application by a total of 50 lb/A for each ton of additional expected yield above 5 tons/A.

** The N recommendations for the warm-season perennial grasses including switchgrass, indiangrass, weeping lovegrass, buffalograss, caucasian bluestem, big bluestem, and little bluestem assume a 4 tons/A yield. For yield above 4 tons/A, increase N application by a total of 30 lb/A for each ton of expected hay yield above 4 tons/A.

The N recommendations for eastern gamagrass and improved bermudagrasses (high yielding warm-season grasses), assume 5 tons/A hay yield. For yield above 5 tons/A, increase N application by a total of 50 lbs/A for each ton of additional expected yield above 5 tons/A.

When topdressing N, adjust rate as follows:
1) if UAN is surface broadcast, increase rate by 15-20 %;
2) if UAN is dribbled or streamed, increase rate by 5-10 %;
3) if granulated urea is broadcast, increase rate by 25%.

Table 7. Plant Nutrient Recommendations Based on Soil Tests and Yield Goals for Sudangrass, Millet, and Forage-Type Sorghum and Soybean.

Crop	Total Amount of Nutrients Recommended and Suggested Method of Application	Nitrogen (N)	Recommended Nutrients Based on Soil Tests: Soil Test Phosphorus Category				Soil Test Potassium Category			
			Low	Medium	Optimum	Excessive	Low	Medium	Optimum	Excessive
		lbs N / A	lbs P205 / A				lbs K20 / A			
SUDANGRASS, MILLET, and	Total recommended	120-150*	80-160	45-80	20-45	0	80-160	40-80	20-40	0
FORAGE-TYPE SORGHUMS	Broadcast and disked in	70-100	80-160	45-80	20-45	0	80-160	40-80	20-40	0
(10-15 ton / A yield goal)	Topdress after first harvest	50	0	0	0	0	0	0	0	0
FORAGE-TYPE SOYBEAN (10-15 ton / A yield goal)	Broadcast and disked in	20	80-160	45-80	20-45	0	80-160	45-80	20-45	0
SUMMER COVER CROP & WILDLIFE FEED PASTURE										
A. Sudangrass and forage-type sorghums	Broadcast before seeding	50	70-130	40-70	20-40	0	70-130	40-70	20-40	0
B. Forage-type soybean and millet	Broadcast before seeding	25	70-130	40-70	20-40	0	70-130	40-70	20-40	0

Where ranges of plant nutrients are indicated for phosphorus and potassium, the precise amount of plant nutrient required depends upon the numerical soil test index value for that nutrient.

*Sudangrass, millet, forage-type sorghum: If a third harvest is planned, apply an additional 30-50 pounds of N after the second cutting.