

**Nitrogen Soil Fertility Recommendations for Forage Crops**

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

	0	2	4	6	8	10	12	14	16	18	20
	-----lbs N/acre-----										
AFRICAN MILLET	60	55	50	45	40	40	35	30	25	20	20
ALFALFA (IRRIGATED , ESTABLISHMENT)	20	15	10	5	0						
ALFALFA (IRRIGATED / 6 TON/A , ANNUALLY)	20	15	10	5	0						
ALFALFA (IRRIGATED 8-12 TON/A , ANNUALLY)	20	15	10	5	0						
ALFALFA (NON-IRRIGATED , ANNUALLY)	20	15	10	5	0						
ALFALFA (NON-IRRIGATED , ESTABLISHMENT)	20	15	10	5	0						
BAHIA GRASS (1 HAY CUTTING PLUS GRAZING)	70	65	60	55	50	50	45	40	35	30	30
BAHIA GRASS (3 HAY CUTTINGS)	70	65	60	55	50	50	45	40	35	30	30
BAHIA GRASS (4 TO 6 HAY CUTTINGS)	70	65	60	55	50	50	45	40	35	30	30
BAHIA GRASS ESTABLISHMENT	40	35	30	25	20	20	15	10	5	0	
BAHIA GRASS, GRAZING (1 A.U. PER 1 TO 1.5 ACRES)	60	55	50	45	40	40	35	30	25	20	20
BAHIA GRASS, GRAZING (1 A.U. PER 1.5 TO 2 ACRES)	60	55	50	45	40	40	35	30	25	20	20
BARLEY (HEAVY GRAZING ON SANDY SOILS)	100	95	90	85	80	80	75	70	65	60	60
BARLEY (HEAVY GRAZING)	80	75	70	65	60	60	55	50	45	40	40
BERMUDA (COMMON, MIDLAND) GRASS (4 TO 6 HAY CUTTINGS)	70	65	60	55	50	50	45	40	35	30	30
BLUE PANIC (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
BLUE PANIC (GRAZING)	40	35	30	25	20	20	15	10	5	0	
BLUESTEM (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	



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BLUESTEM (GRAZING OR HAY)	40	35	30	25	20	20	15	10	5	0	
BLUESTEM (IMPROVED-GRAZING OR HAY)	80	75	70	65	60	60	55	50	45	40	40
BUFFEL GRASS (3 HAY CUTTINGS)	80	75	70	65	60	60	55	50	45	40	40
BUFFEL GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
BUFFEL GRASS (HEAVY GRAZING OR HAY PLUS GRAZING)	60	55	50	45	40	40	35	30	25	20	20
BUFFEL GRASS (MODERATE GRAZING)	50	45	40	35	30	30	25	20	15	10	10
CLOVER (PREPARED SEEDBED)	10	5	0								
CLOVER (SOD SEEDED)	10	5	0								
CLOVER WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)	10	5	0								
CLOVER WITH RYEGRASS OR SMALL GRAIN (SOD SEEDED)	10	5	0								
COMMON BERMUDA GRASS (1 A.U. PER 1 TO 1.5 ACRES)	60	55	50	45	40	40	35	30	25	20	20
COMMON BERMUDA GRASS (1 A.U. PER 1.5 TO 2 ACRES)	60	55	50	45	40	40	35	30	25	20	20
COMMON BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING , ANNUALLY)	70	65	60	55	50	50	45	40	35	30	30
COMMON BERMUDA GRASS (3 HAY CUTTINGS , ANNUALLY)	70	65	60	55	50	50	45	40	35	30	30
COMMON BERMUDA GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
DALLIS GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
DALLIS GRASS (GRAZING 1 A.U. PER 1.5 TO 2 ACRES)	40	35	30	25	20	20	15	10	5	0	
DALLIS GRASS(GRAZING 1 AU PER 1 TO 1.5 ACRES OR 1 HAY CUTTING PLUS GRAZING)	50	45	40	35	30	30	25	20	15	10	10
DESOTO GRASS	40	35	30	25	20	20	15	10	5	0	



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	0	2	4	6	8	10	12	14	16	18	20
	-----lbs N/acre-----										
FESCUE (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
FESCUE , HAY OR GRAZING AT 3-4 AU/A	120	115	110	105	100	100	95	90	85	80	80
FORAGE SORGHUM	40	35	30	25	20	20	15	10	5	0	
HAY GRAZER , 1 HAY CUTTING OR LIGHT GRAZING	80	75	70	65	60	60	55	50	45	40	40
HAY GRAZER , 2 HAY CUTTINGS OR MODERATE GRAZING	80	75	70	65	60	60	55	50	45	40	40
HAY GRAZER , 3 HAY CUTTINGS OR HEAVY GRAZING	80	75	70	65	60	60	55	50	45	40	40
HEGARI	60	55	50	45	40	40	35	30	25	20	20
HUBAN CLOVER	20	15	10	5	0						
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING)	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-1.5 TONS/A)	75	70	65	60	55	55	50	45	40	35	35
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2 TONS/A )	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2.5 TONS/A)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-3 TONS/A)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-1.5 TONS/A AVG.)	75	70	65	60	55	55	50	45	40	35	35
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2 TONS/A AVG.)	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2.5 TONS/A AVG.)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-3 TONS/A AVG.)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-1.5 TONS/A AVG.)	75	70	65	60	55	55	50	45	40	35	35
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)	100	95	90	85	80	80	75	70	65	60	60



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	0	2	4	6	8	10	12	14	16	18	20
	-----lbs N/acre-----										
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2.5 TONS/A AVG.)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-3 TONS/A AVG.)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-1.5 TONS/A AVG.)	75	70	65	60	55	55	50	45	40	35	35
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-2 TONS/A AVG.)	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-2.5 TONS/A AVG.)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-3 TONS/A AVG.)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-2 TONS/A AVG.)	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-2.5 TONS/A AVG.)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-3 TONS/A AVG.)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-2 TONS/A AVG.)	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-2.5 TONS/A AVG.)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-3 TONS/A AVG.)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-2 TONS/A AVG.)	100	95	90	85	80	80	75	70	65	60	60
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-2.5 TONS/A AVG.)	125	120	115	110	105	105	100	95	90	85	85
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-3 TONS/A AVG.)	150	145	140	135	130	130	125	120	115	110	110
IMPROVED AND HYBRID BERMUDA GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
IMPROVED AND HYBRID BERMUDA GRASS (IRRIGATED , ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
IMPROVED AND HYBRID BERMUDA GRASS, GRAZING	60	55	50	45	40	40	35	30	25	20	20
JOHNSON GRASS , 1 HAY CUTTING OR LIGHT GRAZING	80	75	70	65	60	60	55	50	45	40	40



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	0	2	4	6	8	10	12	14	16	18	20
	-----lbs N/acre-----										
JOHNSON GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING	80	75	70	65	60	60	55	50	45	40	40
JOHNSON GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING	80	75	70	65	60	60	55	50	45	40	40
KLEIN GRASS (1 AU PER 2 TO 3 ACRES OR HAY PRODUCTION)	50	45	40	35	30	30	25	20	15	10	10
KLEIN GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
KLEIN GRASS , 1 AU PER 1.25 TO 1.75 ACRE OR HAY PRODUCTION	150	145	140	135	130	130	125	120	115	110	110
LOVE GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
LOVE GRASS , GRAZING OR HAY	70	65	60	55	50	50	45	40	35	30	30
MILLET , 2 HAY CUTTINGS OR MODERATE GRAZING	40	35	30	25	20	20	15	10	5	0	
MILLET , LIGHT GRAZING OR 1 HAY CUTTING	40	35	30	25	20	20	15	10	5	0	
MINIMUM REQUIREMENT: ALFALFA	20	15	10	5	0						
MINIMUM REQUIREMENT: BLUESTEM GRASS	40	35	30	25	20	20	15	10	5	0	
MINIMUM REQUIREMENT: CLOVER	20	15	10	5	0						
MINIMUM REQUIREMENT: COOL SEASON PERENNIAL GRASS	40	35	30	25	20	20	15	10	5	0	
MINIMUM REQUIREMENT: PEAS	20	15	10	5	0						
MINIMUM REQUIREMENT: S-1 CLOVER OR WHITE CLOVER	20	15	10	5	0						
MINIMUM REQUIREMENT: VETCH OR LESPEDZA	120	115	110	105	100	100	95	90	85	80	80
MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS	40	35	30	25	20	20	15	10	5	0	
NK-37 OR MIDLAND BERMUDA GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	



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	0	2	4	6	8	10	12	14	16	18	20
	-----lbs N/acre-----										
NK-37 OR MIDLAND BERMUDA GRASS (GRAZING)	120	115	110	105	100	100	95	90	85	80	80
NK-37 OR MIDLAND BERMUDA GRASS , 2 TO 3 HAY CUTTINGS	70	65	60	55	50	50	45	40	35	30	30
OATS (HEAVY GRAZING OR GRAZING PLUS HAY OR GRAIN)	100	95	90	85	80	80	75	70	65	60	60
OATS (LIGHT GRAZING)	60	55	50	45	40	40	35	30	25	20	20
OATS (MODERATE GRAZING)	80	75	70	65	60	60	55	50	45	40	40
OATS ,HAY ONLY (2 -3 TONS/A)	80	75	70	65	60	60	55	50	45	40	40
RANGE GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
RANGE GRASS (GRAZING)	40	35	30	25	20	20	15	10	5	0	
RHODES GRASS	40	35	30	25	20	20	15	10	5	0	
RHODES GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
RYE , HEAVY GRAZING	120	115	110	105	100	100	95	90	85	80	80
RYE , MODERATE GRAZING	70	65	60	55	50	50	45	40	35	30	30
RYEGRASS (SOD SEEDED)	40	35	30	25	20	20	15	10	5	0	0
RYEGRASS , HEAVY GRAZING	200	195	190	185	180	180	175	170	165	160	160
RYEGRASS , MODERATE GRAZING	130	125	120	115	110	110	105	100	95	90	90
SILAGE (CORN 11-15 TON/A)	150	145	140	135	130	130	125	120	115	110	110
SILAGE (CORN 16-20 TON/A)	200	195	190	185	180	180	175	170	165	160	160
SILAGE (CORN 21-25 TON/A)	250	245	240	235	230	230	225	220	215	210	210
SILAGE (CORN 26-30 TON/A)	300	295	290	285	280	280	275	270	265	260	260



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SILAGE (CORN 7 TO 10 TON/A)	100	95	90	85	80	80	75	70	65	60	60
SILAGE (SORGHUM 11-15 TON/A)	130	125	120	115	110	110	105	100	95	90	90
SILAGE (SORGHUM 16-20 TON/A)	180	175	170	165	160	160	155	150	145	140	140
SILAGE (SORGHUM 21-25 TON/A)	220	215	210	205	200	200	195	190	185	180	180
SILAGE (SORGHUM 26-30 TON/A)	260	255	250	245	240	240	235	230	225	220	220
SILAGE (SORGHUM 7 TO 10 TON/A)	70	65	60	55	50	50	45	40	35	30	30
SMALL GRAIN AND RYEGRASS (INTENSIVE GRAZING)	60	55	50	45	40	40	35	30	25	20	20
SMALL GRAIN AND RYEGRASS (MODERATE GRAZING)	60	55	50	45	40	40	35	30	25	20	20
SMALL GRAIN AND RYEGRASS (SOD SEEDED)	60	55	50	45	40	40	35	30	25	20	20
SORGHUM ALMUM	40	35	30	25	20	20	15	10	5	0	
SUDAN - SORGHUM HYBRID , 1 HAY CUTTING OR LIGHT GRAZING	80	75	70	65	60	60	55	50	45	40	40
SUDAN - SORGHUM HYBRID , 2 HAY CUTTINGS OR MODERATE GRAZING	80	75	70	65	60	60	55	50	45	40	40
SUDAN - SORGHUM HYBRID , 3 HAY CUTTINGS OR HEAVY GRAZING	80	75	70	65	60	60	55	50	45	40	40
SUDAN GRASS , 1 HAY CUTTING OR LIGHT GRAZING	80	75	70	65	60	60	55	50	45	40	40
SUDAN GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING	80	75	70	65	60	60	55	50	45	40	40
SUDAN GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING	80	75	70	65	60	60	55	50	45	40	40
SWITCH GRASS	40	35	30	25	20	20	15	10	5	0	
SWITCH GRASS (ESTABLISHMENT)	40	35	30	25	20	20	15	10	5	0	
TRITICALE GRAZING	120	115	110	105	100	100	95	90	85	80	80



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	-----lbs N/acre-----										
VETCH (PREPARED SEEDBED)	10	5	0								
VETCH (SOD SEEDED)	10	5	0								
VETCH WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)	40	35	30	25	20	20	15	10	5	0	
WHEAT (HEAVY GRAZING)	80	75	70	65	60	60	55	50	45	40	40
WHEAT (LIGHT GRAZING)	60	55	50	45	40	40	35	30	25	20	20
WHEAT (MODERATE GRAZING)	80	75	70	65	60	60	55	50	45	40	40
WHEAT GRASS , JOSE (HEAVY GRAZING)	300	295	290	285	280	280	275	270	265	260	260
WHEAT GRASS , JOSE (LIGHT GRAZING)	150	145	140	135	130	130	125	120	115	110	110
WHEAT GREENCHOP (2 WET TONS/A-75% MOISTURE)	40	35	30	25	20	20	15	10	5	0	
WHEAT GREENCHOP (3 WET TONS/A-75% MOISTURE)	55	50	45	40	35	35	30	25	20	15	15
WHEAT GREENCHOP (4 WET TONS/A-75% MOISTURE)	75	70	65	60	55	55	50	45	40	35	35
WHEAT GREENCHOP (5 WET TONS/A-75% MOISTURE)	95	90	85	80	75	75	70	65	60	55	55
WHEAT GREENCHOP (6 WET TONS/A-75% MOISTURE)	110	105	100	95	90	90	85	80	75	70	70
WHEAT GREENCHOP (7 WET TONS/A-75% MOISTURE)	130	125	120	115	110	110	105	100	95	90	90
WHEAT GREENCHOP (8 WET TONS/A-75% MOISTURE)	150	145	140	135	130	130	125	120	115	110	110
WHEAT HAY (1 TON/A)	45	40	35	30	25	25	20	15	10	5	5
WHEAT HAY (1.5 TON/A)	65	60	55	50	45	45	40	35	30	25	25
WHEAT HAY (2 TON/A)	90	85	80	75	70	70	65	60	55	50	50
WHEAT HAY (2.5 TON/A)	110	105	100	95	90	90	85	80	75	70	70





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	-----lbs N/acre-----										
WHEAT HAY (3 TON/A)	135	130	125	120	115	115	110	105	100	95	95
WHEAT HAY (3.5 TON/A)	155	150	145	140	135	135	130	125	120	115	115
WHEAT HAY (4 TON/A)	180	175	170	165	160	160	155	150	145	140	140
WHEAT SILAGE (3 WET TONS-65% MOISTURE)	70	65	60	55	50	50	45	40	35	30	30
WHEAT SILAGE (4.5 WET TONS-65% MOISTURE)	100	95	90	85	80	80	75	70	65	60	60
WHEAT SILAGE (6 WET TONS-65% MOISTURE)	140	135	130	125	120	120	115	110	105	100	100
WHEAT SILAGE (7.5 WET TONS-65% MOISTURE)	170	165	160	155	150	150	145	140	135	130	130
WHEAT SILAGE (9 WET TONS-65% MOISTURE)	210	205	200	195	190	190	185	180	175	170	170





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BLUESTEM (GRAZING OR HAY)

BLUESTEM (IMPROVED-GRAZING OR HAY)

BUFFEL GRASS (3 HAY CUTTINGS)

BUFFEL GRASS (ESTABLISHMENT)

BUFFEL GRASS (HEAVY GRAZING OR HAY PLUS GRAZING)

BUFFEL GRASS (MODERATE GRAZING)

CLOVER (PREPARED SEEDBED)

CLOVER (SOD SEEDED)

CLOVER WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)

CLOVER WITH RYEGRASS OR SMALL GRAIN (SOD SEEDED)

COMMON BERMUDA GRASS (1 A.U. PER 1 TO 1.5 ACRES)

COMMON BERMUDA GRASS (1 A.U. PER 1.5 TO 2 ACRES)

COMMON BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING , ANNUALLY)

COMMON BERMUDA GRASS (3 HAY CUTTINGS , ANNUALLY)

COMMON BERMUDA GRASS (ESTABLISHMENT)

DALLIS GRASS (ESTABLISHMENT)

DALLIS GRASS (GRAZING 1 A.U. PER 1.5 TO 2 ACRES)

DALLIS GRASS(GRAZING 1 AU PER 1 TO 1.5 ACRES OR 1 HAY CUTTING PLUS GRAZING) 0

DESOTO GRASS

25	30	35	40	45	50	55	60	65	70	75
-----lbs N/acre-----										

30 20 10 0

30 20 10 0

0

10 0

10 0

10 0

20 10 0

20 10 0

0



## Soil, Water and Forage Testing Laboratory

**Nitrogen recommendations applicable for methods used by laboratory.**

### Nitrogen Soil Fertility Recommendations for Forage Crops

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

#### FESCUE (ESTABLISHMENT)

FESCUE , HAY OR GRAZING AT 3-4 AU/A

#### FORAGE SORGHUM

HAY GRAZER , 1 HAY CUTTING OR LIGHT GRAZING

HAY GRAZER , 2 HAY CUTTINGS OR MODERATE GRAZING

HAY GRAZER , 3 HAY CUTTINGS OR HEAVY GRAZING

HEGARI

#### HUBAN CLOVER

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING)

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-1.5 TONS/A)

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2 TONS/A )

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2.5 TONS/A)

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-3 TONS/A)

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-1.5 TONS/A AVG.)

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2 TONS/A AVG.)

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2.5 TONS/A AVG.)

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-3 TONS/A AVG.)

IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-1.5 TONS/A AVG.)

IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

	25	30	35	40	45	50	55	60	65	70	75
	-----lbs N/acre-----										
FESCUE (ESTABLISHMENT)											
FESCUE , HAY OR GRAZING AT 3-4 AU/A	70	60	50	40	30	20	10	0			
FORAGE SORGHUM											
HAY GRAZER , 1 HAY CUTTING OR LIGHT GRAZING	30	20	10	0							
HAY GRAZER , 2 HAY CUTTINGS OR MODERATE GRAZING	30	20	10	0							
HAY GRAZER , 3 HAY CUTTINGS OR HEAVY GRAZING	30	20	10	0							
HEGARI	10	0									
HUBAN CLOVER											
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING)	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-1.5 TONS/A)	25	15	5	0							
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2 TONS/A )	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2.5 TONS/A)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-3 TONS/A)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-1.5 TONS/A AVG.)	25	15	5	0							
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2 TONS/A AVG.)	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2.5 TONS/A AVG.)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-3 TONS/A AVG.)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-1.5 TONS/A AVG.)	25	15	5	0							
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)	50	40	30	20	10	0					



## Soil, Water and Forage Testing Laboratory

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### Nitrogen Soil Fertility Recommendations for Forage Crops

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

	25	30	35	40	45	50	55	60	65	70	75
	-----lbs N/acre-----										
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2.5 TONS/A AVG.)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-3 TONS/A AVG.)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-1.5 TONS/A AVG.)	25	15	5	0							
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-2 TONS/A AVG.)	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-2.5 TONS/A AVG.)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-3 TONS/A AVG.)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-2 TONS/A AVG.)	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-2.5 TONS/A AVG.)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-3 TONS/A AVG.)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-2 TONS/A AVG.)	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-2.5 TONS/A AVG.)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-3 TONS/A AVG.)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-2 TONS/A AVG.)	50	40	30	20	10	0					
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-2.5 TONS/A AVG.)	75	65	55	45	35	25	15	5	0		
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-3 TONS/A AVG.)	100	90	80	70	60	50	40	30	20	10	0
IMPROVED AND HYBRID BERMUDA GRASS (ESTABLISHMENT)											
IMPROVED AND HYBRID BERMUDA GRASS (IRRIGATED , ESTABLISHMENT)											
IMPROVED AND HYBRID BERMUDA GRASS, GRAZING	10	0									
JOHNSON GRASS , 1 HAY CUTTING OR LIGHT GRAZING	30	20	10	0							



## Soil, Water and Forage Testing Laboratory

### Nitrogen recommendations applicable for methods used by laboratory.

## Nitrogen Soil Fertility Recommendations for Forage Crops

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: soiltesting.tamu.edu

JOHNSON GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING

25	30	35	40	45	50	55	60	65	70	75
-----lbs N/acre-----										
30	20	10	0							
30	20	10	0							
0										
100	90	80	70	60	50	40	30	20	10	0
20	10	0								
70	60	50	40	30	20	10	0			

JOHNSON GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING

KLEIN GRASS (1 AU PER 2 TO 3 ACRES OR HAY PRODUCTION)

KLEIN GRASS (ESTABLISHMENT)

KLEIN GRASS , 1 AU PER 1.25 TO 1.75 ACRE OR HAY PRODUCTION

LOVE GRASS (ESTABLISHMENT)

LOVE GRASS , GRAZING OR HAY

MILLET , 2 HAY CUTTINGS OR MODERATE GRAZING

MILLET , LIGHT GRAZING OR 1 HAY CUTTING

MINIMUM REQUIREMENT: ALFALFA

MINIMUM REQUIREMENT: BLUESTEM GRASS

MINIMUM REQUIREMENT: CLOVER

MINIMUM REQUIREMENT: COOL SEASON PERENNIAL GRASS

MINIMUM REQUIREMENT: PEAS

MINIMUM REQUIREMENT: S-1 CLOVER OR WHITE CLOVER

MINIMUM REQUIREMENT: VETCH OR LESPEDZA

MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

NK-37 OR MIDLAND BERMUDA GRASS (ESTABLISHMENT)



## Soil, Water and Forage Testing Laboratory

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1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

	25	30	35	40	45	50	55	60	65	70	75
	-----lbs N/acre-----										
NK-37 OR MIDLAND BERMUDA GRASS (GRAZING)	70	60	50	40	30	20	10	0			
NK-37 OR MIDLAND BERMUDA GRASS , 2 TO 3 HAY CUTTINGS	20	10	0								
OATS (HEAVY GRAZING OR GRAZING PLUS HAY OR GRAIN)	50	40	30	20	10	0					
OATS (LIGHT GRAZING)	10	0									
OATS (MODERATE GRAZING)	30	20	10	0							
OATS ,HAY ONLY (2 -3 TONS/A)	30	20	10	0							
RANGE GRASS (ESTABLISHMENT)											
RANGE GRASS (GRAZING)											
RHODES GRASS											
RHODES GRASS (ESTABLISHMENT)											
RYE , HEAVY GRAZING	70	60	50	40	30	20	10	0			
RYE , MODERATE GRAZING	20	10	0								
RYEGRASS (SOD SEEDED)											
RYEGRASS , HEAVY GRAZING	150	140	130	120	110	100	90	80	70	60	50
RYEGRASS , MODERATE GRAZING	80	70	60	50	40	30	20	10	0		
SILAGE (CORN 11-15 TON/A)	100	90	80	70	60	50	40	30	20	10	0
SILAGE (CORN 16-20 TON/A)	150	140	130	120	110	100	90	80	70	60	50
SILAGE (CORN 21-25 TON/A)	200	190	180	170	160	150	140	130	120	110	100
SILAGE (CORN 26-30 TON/A)	250	240	230	220	210	200	190	180	170	160	150



## Soil, Water and Forage Testing Laboratory

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### Nitrogen Soil Fertility Recommendations for Forage Crops

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

	25	30	35	40	45	50	55	60	65	70	75
	-----lbs N/acre-----										
SILAGE (CORN 7 TO 10 TON/A)	50	40	30	20	10	0					
SILAGE (SORGHUM 11-15 TON/A)	80	70	60	50	40	30	20	10	0		
SILAGE (SORGHUM 16-20 TON/A)	130	120	110	100	90	80	70	60	50	40	30
SILAGE (SORGHUM 21-25 TON/A)	170	160	150	140	130	120	110	100	90	80	70
SILAGE (SORGHUM 26-30 TON/A)	210	200	190	180	170	160	150	140	130	120	110
SILAGE (SORGHUM 7 TO 10 TON/A)	20	10	0								
SMALL GRAIN AND RYEGRASS (INTENSIVE GRAZING)	10	0									
SMALL GRAIN AND RYEGRASS (MODERATE GRAZING)	10	0									
SMALL GRAIN AND RYEGRASS (SOD SEEDED)	10	0									
SORGHUM ALMUM											
SUDAN - SORGHUM HYBRID , 1 HAY CUTTING OR LIGHT GRAZING	30	20	10	0							
SUDAN - SORGHUM HYBRID , 2 HAY CUTTINGS OR MODERATE GRAZING	30	20	10	0							
SUDAN - SORGHUM HYBRID , 3 HAY CUTTINGS OR HEAVY GRAZING	30	20	10	0							
SUDAN GRASS , 1 HAY CUTTING OR LIGHT GRAZING	30	20	10	0							
SUDAN GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING	30	20	10	0							
SUDAN GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING	30	20	10	0							
SWITCH GRASS											
SWITCH GRASS (ESTABLISHMENT)											
TRITICALE GRAZING	70	60	50	40	30	20	10	0			





## Soil, Water and Forage Testing Laboratory

Nitrogen recommendations applicable for methods used by laboratory.

### Nitrogen Soil Fertility Recommendations for Forage Crops

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

VETCH (PREPARED SEEDBED)

VETCH (SOD SEEDED)

VETCH WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)

WHEAT (HEAVY GRAZING)

WHEAT (LIGHT GRAZING)

WHEAT (MODERATE GRAZING)

WHEAT GRASS , JOSE (HEAVY GRAZING)

WHEAT GRASS , JOSE (LIGHT GRAZING)

WHEAT GREENCHOP (2 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (3 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (4 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (5 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (6 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (7 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (8 WET TONS/A-75% MOISTURE)

WHEAT HAY (1 TON/A)

WHEAT HAY (1.5 TON/A)

WHEAT HAY (2 TON/A)

WHEAT HAY (2.5 TON/A)

	25	30	35	40	45	50	55	60	65	70	75
	-----lbs N/acre-----										
VETCH (PREPARED SEEDBED)											
VETCH (SOD SEEDED)											
VETCH WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)											
WHEAT (HEAVY GRAZING)	30	20	10	0							
WHEAT (LIGHT GRAZING)	10	0									
WHEAT (MODERATE GRAZING)	30	20	10	0							
WHEAT GRASS , JOSE (HEAVY GRAZING)	250	240	230	220	210	200	190	180	170	160	150
WHEAT GRASS , JOSE (LIGHT GRAZING)	100	90	80	70	60	50	40	30	20	10	0
WHEAT GREENCHOP (2 WET TONS/A-75% MOISTURE)											
WHEAT GREENCHOP (3 WET TONS/A-75% MOISTURE)	5	0									
WHEAT GREENCHOP (4 WET TONS/A-75% MOISTURE)	25	15	5	0							
WHEAT GREENCHOP (5 WET TONS/A-75% MOISTURE)	45	35	25	15	5	0					
WHEAT GREENCHOP (6 WET TONS/A-75% MOISTURE)	60	50	40	30	20	10	0				
WHEAT GREENCHOP (7 WET TONS/A-75% MOISTURE)	80	70	60	50	40	30	20	10	0		
WHEAT GREENCHOP (8 WET TONS/A-75% MOISTURE)	100	90	80	70	60	50	40	30	20	10	0
WHEAT HAY (1 TON/A)	0										
WHEAT HAY (1.5 TON/A)	15	5	0								
WHEAT HAY (2 TON/A)	40	30	20	10	0						
WHEAT HAY (2.5 TON/A)	60	50	40	30	20	10	0				



**Soil, Water and Forage Testing Laboratory**

**Nitrogen recommendations applicable for methods used by laboratory.**

**Nitrogen Soil Fertility Recommendations for Forage Crops**

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

WHEAT HAY (3 TON/A)

WHEAT HAY (3.5 TON/A)

WHEAT HAY (4 TON/A)

WHEAT SILAGE (3 WET TONS-65% MOISTURE)

WHEAT SILAGE (4.5 WET TONS-65% MOISTURE)

WHEAT SILAGE (6 WET TONS-65% MOISTURE)

WHEAT SILAGE (7.5 WET TONS-65% MOISTURE)

WHEAT SILAGE (9 WET TONS-65% MOISTURE)

	25	30	35	40	45	50	55	60	65	70	75
	-----lbs N/acre-----										
WHEAT HAY (3 TON/A)	85	75	65	55	45	35	25	15	5	0	
WHEAT HAY (3.5 TON/A)	105	95	85	75	65	55	45	35	25	15	5
WHEAT HAY (4 TON/A)	130	120	110	100	90	80	70	60	50	40	30
WHEAT SILAGE (3 WET TONS-65% MOISTURE)	20	10	0								
WHEAT SILAGE (4.5 WET TONS-65% MOISTURE)	50	40	30	20	10	0					
WHEAT SILAGE (6 WET TONS-65% MOISTURE)	90	80	70	60	50	40	30	20	10	0	
WHEAT SILAGE (7.5 WET TONS-65% MOISTURE)	120	110	100	90	80	70	60	50	40	30	20
WHEAT SILAGE (9 WET TONS-65% MOISTURE)	160	150	140	130	120	110	100	90	80	70	60



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updated on 3-30-2012: soiltesting.tamu.edu

80	90	100	110	120	130	140	150
-----lbs N/acre-----							

NK-37 OR MIDLAND BERMUDA GRASS (GRAZING)

NK-37 OR MIDLAND BERMUDA GRASS , 2 TO 3 HAY CUTTINGS

OATS (HEAVY GRAZING OR GRAZING PLUS HAY OR GRAIN)

OATS (LIGHT GRAZING)

OATS (MODERATE GRAZING)

OATS ,HAY ONLY (2 -3 TONS/A)

RANGE GRASS (ESTABLISHMENT)

RANGE GRASS (GRAZING)

RHODES GRASS

RHODES GRASS (ESTABLISHMENT)

RYE , HEAVY GRAZING

RYE , MODERATE GRAZING

RYEGRASS (SOD SEEDED)

RYEGRASS , HEAVY GRAZING

40      20      0

RYEGRASS , MODERATE GRAZING

SILAGE (CORN 11-15 TON/A)

SILAGE (CORN 16-20 TON/A)

40      20      0

SILAGE (CORN 21-25 TON/A)

90      70      50      30      10      0

SILAGE (CORN 26-30 TON/A)

140      120      100      80      60      40      20      0



**Soil, Water and Forage Testing Laboratory**

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**Nitrogen Soil Fertility Recommendations for Forage Crops**

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

SILAGE (CORN 7 TO 10 TON/A)

SILAGE (SORGHUM 11-15 TON/A)

SILAGE (SORGHUM 16-20 TON/A)

SILAGE (SORGHUM 21-25 TON/A)

SILAGE (SORGHUM 26-30 TON/A)

SILAGE (SORGHUM 7 TO 10 TON/A)

SMALL GRAIN AND RYEGRASS (INTENSIVE GRAZING)

SMALL GRAIN AND RYEGRASS (MODERATE GRAZING)

SMALL GRAIN AND RYEGRASS (SOD SEEDED)

SORGHUM ALMUM

SUDAN - SORGHUM HYBRID , 1 HAY CUTTING OR LIGHT GRAZING

SUDAN - SORGHUM HYBRID , 2 HAY CUTTINGS OR MODERATE GRAZING

SUDAN - SORGHUM HYBRID , 3 HAY CUTTINGS OR HEAVY GRAZING

SUDAN GRASS , 1 HAY CUTTING OR LIGHT GRAZING

SUDAN GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING

SUDAN GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING

SWITCH GRASS

SWITCH GRASS (ESTABLISHMENT)

TRITICALE GRAZING

80	90	100	110	120	130	140	150
-----lbs N/acre-----							

20	0						
60	40	20	0				
100	80	60	40	20	0		



**Soil, Water and Forage Testing Laboratory**

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**Nitrogen Soil Fertility Recommendations for Forage Crops**

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

VETCH (PREPARED SEEDBED)

VETCH (SOD SEEDED)

VETCH WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)

WHEAT (HEAVY GRAZING)

WHEAT (LIGHT GRAZING)

WHEAT (MODERATE GRAZING)

WHEAT GRASS , JOSE (HEAVY GRAZING)

WHEAT GRASS , JOSE (LIGHT GRAZING)

WHEAT GREENCHOP (2 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (3 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (4 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (5 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (6 WET TONS/A-75% MOISTURE)

WHEAT GREENCHOP (7 WET TONS/A-75% MOISTURE)

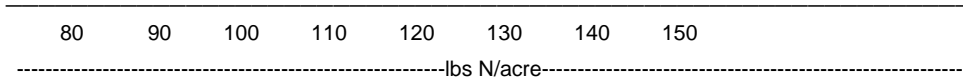
WHEAT GREENCHOP (8 WET TONS/A-75% MOISTURE)

WHEAT HAY (1 TON/A)

WHEAT HAY (1.5 TON/A)

WHEAT HAY (2 TON/A)

WHEAT HAY (2.5 TON/A)





**Soil, Water and Forage Testing Laboratory**

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**Nitrogen Soil Fertility Recommendations for Forage Crops**

1M KCl, Cd-Reduction Nitrate-N (ppm or mg/kg) in Soil

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WHEAT HAY (3 TON/A)

WHEAT HAY (3.5 TON/A)

WHEAT HAY (4 TON/A)

WHEAT SILAGE (3 WET TONS-65% MOISTURE)

WHEAT SILAGE (4.5 WET TONS-65% MOISTURE)

WHEAT SILAGE (6 WET TONS-65% MOISTURE)

WHEAT SILAGE (7.5 WET TONS-65% MOISTURE)

WHEAT SILAGE (9 WET TONS-65% MOISTURE)

	80	90	100	110	120	130	140	150
	-----lbs N/acre-----							
WHEAT HAY (3 TON/A)								
WHEAT HAY (3.5 TON/A)	0							
WHEAT HAY (4 TON/A)	20	0						
WHEAT SILAGE (3 WET TONS-65% MOISTURE)								
WHEAT SILAGE (4.5 WET TONS-65% MOISTURE)								
WHEAT SILAGE (6 WET TONS-65% MOISTURE)								
WHEAT SILAGE (7.5 WET TONS-65% MOISTURE)	10	0						
WHEAT SILAGE (9 WET TONS-65% MOISTURE)	50	30	10	0				



## Soil, Water and Forage Testing Laboratory

### Nitrogen recommendations applicable for methods used by laboratory.

## Nitrogen Soil Fertility Recommendations for Forage Crops

Additional comments which may appear on soil test reports

updated on 3-30-2012: [soiltesting.tamu.edu](http://soiltesting.tamu.edu)

AFRICAN MILLET

ALFALFA (IRRIGATED , ESTABLISHMENT)

ALFALFA (IRRIGATED / 6 TON/A , ANNUALLY)

ALFALFA (IRRIGATED 8-12 TON/A , ANNUALLY)

ALFALFA (NON-IRRIGATED , ANNUALLY)

ALFALFA (NON-IRRIGATED , ESTABLISHMENT)

BAHIA GRASS (1 HAY CUTTING PLUS GRAZING)

BAHIA GRASS (3 HAY CUTTINGS)

BAHIA GRASS (4 TO 6 HAY CUTTINGS)

BAHIA GRASS ESTABLISHMENT

BAHIA GRASS, GRAZING (1 A.U. PER 1 TO 1.5 ACRES)

BAHIA GRASS, GRAZING (1 A.U. PER 1.5 TO 2 ACRES)

BARLEY (HEAVY GRAZING ON SANDY SOILS)

BARLEY (HEAVY GRAZING)

BERMUDA (COMMON, MIDLAND) GRASS (4 TO 6 HAY CUTTINGS)

BLUE PANIC (ESTABLISHMENT)

BLUE PANIC (GRAZING)

BLUESTEM (ESTABLISHMENT)

Topdress with an additional 60 lbs/A of nitrogen after each 4 to 6 week graze down.

After each haying, apply an additional 70 lbs/A of nitrogen.

After each haying, topdress with another 70 lbs/A of nitrogen.

After 75% cover is achieved, apply an additional 40 lbs/A nitrogen.

After each graze down, apply an additional 60 lbs/A of nitrogen.

After each graze down, apply an additional 40 lbs/A of nitrogen.

Apply an additional 80 lbs/A of nitrogen in early spring followed by 40 lbs of nitrogen in late spring.

Apply an additional 80 lbs/A of nitrogen in early spring.

Apply an additional 70 lbs/A of nitrogen for each subsequent hay cuttings.

Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..



## Soil, Water and Forage Testing Laboratory

### Nitrogen recommendations applicable for methods used by laboratory.

## Nitrogen Soil Fertility Recommendations for Forage Crops

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BLUESTEM (GRAZING OR HAY)

Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..

BLUESTEM (IMPROVED-GRAZING OR HAY)

Apply an additional 80 lbs/A of nitrogen for each subsequent hay cuttings.

BUFFEL GRASS (3 HAY CUTTINGS)

Topdress with an additional 80 lbs/A of nitrogen after each haying.

BUFFEL GRASS (ESTABLISHMENT)

After 75% cover, topdress with an additional 40 lbs/A of nitrogen.

BUFFEL GRASS (HEAVY GRAZING OR HAY PLUS GRAZING)

If moisture is adequate, topdress with an additional 50 lbs/A of nitrogen every 6 to 8 weeks as needed.

BUFFEL GRASS (MODERATE GRAZING)

If moisture is adequate, topdress with an additional 50 lbs/A of nitrogen every 6 to 8 weeks as needed.

CLOVER (PREPARED SEEDBED)

In spring, topdress with an additional 50 lbs/A of nitrogen followed by an additional 50 lbs/A after clover production.

CLOVER (SOD SEEDED)

One month after emergence, topdress with an additional 50 lbs/A of nitrogen followed by an additional 50 lbs/A in December.

CLOVER WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)

One month after emergence, topdress with an additional 50 lbs/A of nitrogen followed by an additional 50 lbs/A in December.

CLOVER WITH RYEGRASS OR SMALL GRAIN (SOD SEEDED)

COMMON BERMUDA GRASS (1 A.U. PER 1 TO 1.5 ACRES)

Apply an additional 60 lbs of nitrogen prior to each four to six week graze down..

COMMON BERMUDA GRASS (1 A.U. PER 1.5 TO 2 ACRES)

Apply an additional 40 lbs/A of nitrogen prior to each heavy graze down..

COMMON BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING , ANNUALLY)

Apply an additional 60 lbs/A of nitrogen prior to each four to six week grazing down..

COMMON BERMUDA GRASS (3 HAY CUTTINGS , ANNUALLY)

Apply an additional 70 lbs/A of nitrogen for each subsequent hay cuttings.

COMMON BERMUDA GRASS (ESTABLISHMENT)

Apply an additional 60 lbs/A of nitrogen prior to each four to six week graze down..

DALLIS GRASS (ESTABLISHMENT)

After 75% cover, topdress with an additional 40 lbs/A of nitrogen.

DALLIS GRASS (GRAZING 1 A.U. PER 1.5 TO 2 ACRES)

Topdress with an additional 50 lbs/A of nitrogen every 6 to 8 weeks as needed.

DALLIS GRASS(GRAZING 1 AU PER 1 TO 1.5 ACRES OR 1 HAY CUTTING PLUS GRAZING) Topdress with an additional 50 lbs/A of nitrogen every 6 to 8 weeks as needed.

DESOTO GRASS





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FESCUE (ESTABLISHMENT)

FESCUE , HAY OR GRAZING AT 3-4 AU/A

FORAGE SORGHUM

HAY GRAZER , 1 HAY CUTTING OR LIGHT GRAZING

HAY GRAZER , 2 HAY CUTTINGS OR MODERATE GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting.

HAY GRAZER , 3 HAY CUTTINGS OR HEAVY GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting.

HEGARI

HUBAN CLOVER

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING PLUS GRAZING)

Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-1.5 TONS/A)

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2 TONS/A )

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-2.5 TONS/A)

IMPROVED AND HYBRID BERMUDA GRASS (1 HAY CUTTING-3 TONS/A)

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-1.5 TONS/A AVG.)

Apply an additional 75 lbs/A of nitrogen for each subsequent hay cuttings.

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2 TONS/A AVG.)

Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-2.5 TONS/A AVG.)

Apply an additional 125 lbs/A of nitrogen for each subsequent hay cuttings.

IMPROVED AND HYBRID BERMUDA GRASS (2 HAY CUTTINGS-3 TONS/A AVG.)

Apply an additional 150 lbs/A of nitrogen for each subsequent hay cuttings.

IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-1.5 TONS/A AVG.)

Apply an additional 75 lbs/A of nitrogen for each subsequent hay cuttings.

IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.



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## Nitrogen Soil Fertility Recommendations for Forage Crops

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IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2.5 TONS/A AVG.)	Apply an additional 125 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-3 TONS/A AVG.)	Apply an additional 150 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-1.5 TONS/A AVG.)	Apply an additional 75 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-2 TONS/A AVG.)	Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-2.5 TONS/A AVG.)	Apply an additional 125 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (4 HAY CUTTINGS-3 TONS/A AVG.)	Apply an additional 150 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-2 TONS/A AVG.)	Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-2.5 TONS/A AVG.)	Apply an additional 125 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (5 HAY CUTTINGS-3 TONS/A AVG.)	Apply an additional 150 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-2 TONS/A AVG.)	Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-2.5 TONS/A AVG.)	Apply an additional 125 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (6 HAY CUTTINGS-3 TONS/A AVG.)	Apply an additional 150 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-2 TONS/A AVG.)	Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-2.5 TONS/A AVG.)	Apply an additional 125 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (7 HAY CUTTINGS-3 TONS/A AVG.)	Apply an additional 150 lbs/A of nitrogen for each subsequent hay cuttings.
IMPROVED AND HYBRID BERMUDA GRASS (ESTABLISHMENT)	Apply an additional 40 lbs/A of nitrogen upon 75% vegetative cover.
IMPROVED AND HYBRID BERMUDA GRASS (IRRIGATED , ESTABLISHMENT)	Apply an additional 40 lbs/A of nitrogen upon 75% vegetative cover.
IMPROVED AND HYBRID BERMUDA GRASS, GRAZING	Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.
JOHNSON GRASS , 1 HAY CUTTING OR LIGHT GRAZING	



## Soil, Water and Forage Testing Laboratory

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JOHNSON GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting.

JOHNSON GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting.

KLEIN GRASS (1 AU PER 2 TO 3 ACRES OR HAY PRODUCTION)

If moisture conditions are suitable, apply an additional 30 lbs/A of nitrogen after graze down..

KLEIN GRASS (ESTABLISHMENT)

Apply 1/3 of nitrogen prior to spring greenup, followed by 1/3 after each of two anticipated heavy graze downs or hayings.

KLEIN GRASS , 1 AU PER 1.25 TO 1.75 ACRE OR HAY PRODUCTION

LOVE GRASS (ESTABLISHMENT)

LOVE GRASS , GRAZING OR HAY

Apply 1/2 of nitrogen prior to spring greenup and remainder after haying or graze down.

MILLET , 2 HAY CUTTINGS OR MODERATE GRAZING

If moisture conditions are suitable, topdress with an additional 40 lbs/A of nitrogen after heavy graze down.

MILLET , LIGHT GRAZING OR 1 HAY CUTTING

MINIMUM REQUIREMENT: ALFALFA

MINIMUM REQUIREMENT: BLUESTEM GRASS

MINIMUM REQUIREMENT: CLOVER

MINIMUM REQUIREMENT: COOL SEASON PERENNIAL GRASS

MINIMUM REQUIREMENT: PEAS

MINIMUM REQUIREMENT: S-1 CLOVER OR WHITE CLOVER

MINIMUM REQUIREMENT: VETCH OR LESPEDZA

MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

NK-37 OR MIDLAND BERMUDA GRASS (ESTABLISHMENT)



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NK-37 OR MIDLAND BERMUDA GRASS (GRAZING)

Apply 1/2 of nitrogen prior to spring greenup and remainder of nitrogen following first heavy graze down. An additional 40 lbs/A nitrogen should be applied if a 3rd heavy graze down is anticipated.

NK-37 OR MIDLAND BERMUDA GRASS , 2 TO 3 HAY CUTTINGS

Reserve 70 lbs/A of nitrogen for each subsequent hay cutting.

OATS (HEAVY GRAZING OR GRAZING PLUS HAY OR GRAIN)

Topdress an additional 60 lbs of nitrogen/A in late fall and again in late winter.

OATS (LIGHT GRAZING)

Topdress an additional 60 lbs of nitrogen/A in late fall and again in late winter.

OATS (MODERATE GRAZING)

Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 5 weeks of grazing.

OATS ,HAY ONLY (2 -3 TONS/A)

RANGE GRASS (ESTABLISHMENT)

RANGE GRASS (GRAZING)

RHODES GRASS

RHODES GRASS (ESTABLISHMENT)

Nitrogen: After 75% cover, topdress with an additional 40 lbs/A of nitrogen.

RYE , HEAVY GRAZING

Topdress an additional 80 lbs of nitrogen/A in late fall and again in late spring.

RYE , MODERATE GRAZING

Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 5 weeks of grazing.

RYEGRASS (SOD SEEDED)

Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 5 weeks of grazing.

RYEGRASS , HEAVY GRAZING

Apply 1/3 of nitrogen at preplant and topdress 1/3rd of recommendation every 4-6 weeks there after or as needed.

RYEGRASS , MODERATE GRAZING

Apply 1/2 of nitrogen at preplant and topdress remainder of nitrogen after 4 to 6 weeks of grazing.

SILAGE (CORN 11-15 TON/A)

SILAGE (CORN 16-20 TON/A)

SILAGE (CORN 21-25 TON/A)

SILAGE (CORN 26-30 TON/A)



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SILAGE (CORN 7 TO 10 TON/A)

SILAGE (SORGHUM 11-15 TON/A)

SILAGE (SORGHUM 16-20 TON/A)

SILAGE (SORGHUM 21-25 TON/A)

SILAGE (SORGHUM 26-30 TON/A)

SILAGE (SORGHUM 7 TO 10 TON/A)

SMALL GRAIN AND RYEGRASS (INTENSIVE GRAZING)

Topdress with 40 lbs/A of nitrogen every 6 to 8 weeks as needed.

SMALL GRAIN AND RYEGRASS (MODERATE GRAZING)

Topdress with an additional 50 lbs/A of nitrogen in late fall and again in late winter.

SMALL GRAIN AND RYEGRASS (SOD SEEDED)

SORGHUM ALMUM

SUDAN - SORGHUM HYBRID , 1 HAY CUTTING OR LIGHT GRAZING

SUDAN - SORGHUM HYBRID , 2 HAY CUTTINGS OR MODERATE GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting or heavy graze down.

SUDAN - SORGHUM HYBRID , 3 HAY CUTTINGS OR HEAVY GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting or heavy graze down.

SUDAN GRASS , 1 HAY CUTTING OR LIGHT GRAZING

SUDAN GRASS , 2 HAY CUTTINGS OR MODERATE GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting or heavy graze down.

SUDAN GRASS , 3 HAY CUTTINGS OR HEAVY GRAZING

Apply an additional 50-60 lbs/A of nitrogen for each subsequent hay cutting or heavy graze down.

SWITCH GRASS

SWITCH GRASS (ESTABLISHMENT)

TRITICALE GRAZING

Apply 1/2 of nitrogen at preplant and topdress remainder prior to spring growth.



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VETCH (PREPARED SEEDBED)

In spring, topdress with an additional 50 lbs/A of nitrogen if vetch production is inadequate.

Topdress with an additional 50 lbs/A of nitrogen one month after emergence and an additional 50 lbs/A in December.

VETCH (SOD SEEDED)

VETCH WITH RYEGRASS OR SMALL GRAIN (PREPARED SEEDBED)

Topdress with an additional 80 lbs/A of nitrogen in late fall and again in late winter.

WHEAT (HEAVY GRAZING)

Topdress with an additional 50 lbs/A of nitrogen in late fall and again in late winter.

WHEAT (LIGHT GRAZING)

Topdress with an additional 60 lbs/A of nitrogen in late fall and again in late winter.

WHEAT (MODERATE GRAZING)

Apply 1/3 of nitrogen recommendation or up to 100 lbs/A of nitrogen after each heavy graze down.

WHEAT GRASS , JOSE (HEAVY GRAZING)

Apply 1/3 nitrogen recommendation or up to 50 lbs/A of nitrogen after each graze down.

WHEAT GRASS , JOSE (LIGHT GRAZING)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (2 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (3 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (4 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (5 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (6 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (7 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 3 weeks prior to greenchop.

WHEAT GREENCHOP (8 WET TONS/A-75% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT HAY (1 TON/A)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT HAY (1.5 TON/A)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT HAY (2 TON/A)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT HAY (2.5 TON/A)



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WHEAT HAY (3 TON/A)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT HAY (3.5 TON/A)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT HAY (4 TON/A)

Apply 2/3 of recommended nitrogen at preplant and remainder 5-6 weeks prior to hay cutting.

WHEAT SILAGE (3 WET TONS-65% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 4 weeks prior to silage cutting.

WHEAT SILAGE (4.5 WET TONS-65% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 4 weeks prior to silage cutting.

WHEAT SILAGE (6 WET TONS-65% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 4 weeks prior to silage cutting.

WHEAT SILAGE (7.5 WET TONS-65% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 4 weeks prior to silage cutting.

WHEAT SILAGE (9 WET TONS-65% MOISTURE)

Apply 2/3 of recommended nitrogen at preplant and remainder 4 weeks prior to silage cutting.