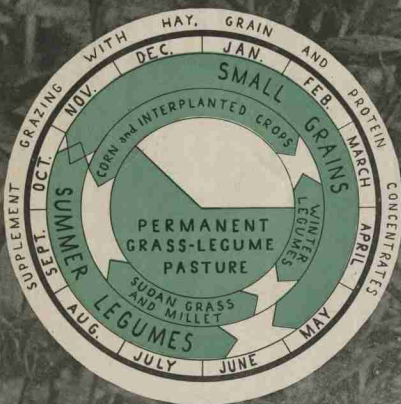


ALFA ALFA

its place in
a balanced
feed
program



A bountiful supply of home grown feed is the first requirement of successful livestock production. Plenty of hay, grazing crops, and silage are especially important.

Alfalfa produces more tons of high quality hay per acre than any other legume in North Carolina. This crop can be grown throughout the State on moderately heavy, well drained, fertile, upland soils. Alfalfa makes a very high quality hay, rich in proteins, minerals, and vitamins A and D. With the present shortage of high protein feeds, a few acres of alfalfa, which produces three to four cuttings per year of high quality hay, will prove a valuable feed crop. The crop is deep rooted, therefore, drought resistant and grows well when seeded on good soil.

Alfalfa will produce crops from four to six years, with proper care, without reseeding. It grows upright which makes it very easy to cut. The ability of this crop to make several cuttings each year extends the hay making season from May through August, thus reducing the weather hazard in haymaking.

Some growers have been discouraged by their failure to maintain stands. This difficulty can be largely overcome if the following conditions are recognized.

1. In comparison with other hay crops alfalfa has a high requirement for lime and mineral fertilizers.
2. Application of borax is necessary for successful production.
3. The crop must not be cut too late in the fall. It must have an opportunity to store up food in its root system in order to live over the winter.
4. Plant alfalfa only on well drained fertile soil.

If these factors are kept in mind there is no reason why almost any farmer in the State cannot produce hay comparable to the following yields.

Farmer	Location	Yield from first 3 cuttings (Tons per acre)
T. E. Dillon	Wilson, N. C.	2.3
J. J. Sanders	Smithfield, N. C.	3.0
Cad Albright	Graham, N. C.	2.3
W. D. Lindley	Guilford College, N. C.	3.1
S. E. Coltrain	Guilford College, N. C.	3.3
D. G. Wilson	Linwood, N. C.	3.3
A. & T. College	Greensboro, N. C.	3.8
Biltmore Farm	Asheville, N. C.	3.5

Land Preparation and Liming:

Some legume such as lespedeza, soybeans, cowpeas or sweet clover should be grown on the land immediately preceding alfalfa. This should be disked in with a heavy disk, such as a "bush and bog" harrow, four to six weeks before seeding alfalfa. As much vegetation should be left on the surface as possible to prevent the surface soil from baking. The land should be disked again just before seeding the alfalfa.

Most soils which have not been limed in recent years will require approximately two tons of finely ground dolomitic limestone per acre. A sample of the soil should be submitted to the soil testing laboratory for analysis and definite lime recommendations for a particular soil. Broadcast the limestone before disking in the cover crop or better yet, apply half of it in the spring before planting the cover crop and the balance when the cover crop is disked in. Limestone applied as recommended will be mixed with the soil and have time to neutralize the soil acids before the alfalfa is seeded.

Fertilization:

An application of 5 to 10 tons of manure per acre is recommended at planting and each year thereafter where available. Apply 700 pounds per acre of 2-12-6 and 20 to 35 pounds (no more) granulated agricultural borax at seeding and 400 pounds 0-12-12 annually in the spring. The heavy yields of this crop remove large amounts of minerals and one cannot expect to maintain yields without liberal mineral fertilization.

For home mixing one hundred pounds of nitrate of soda, 450 pounds of superphosphate, and 75 pounds of muriate

of potash will supply approximately the same plant nutrients as 700 pounds of 2-12-6. Two hundred and seventy pounds of superphosphate and 80 pounds of muriate of potash will supply approximately the same plant nutrients as 400 pounds of 0-12-12.

Borax:

The granulated agricultural borax as recommended under "fertilization" should be mixed with the fertilizer to obtain a uniform distribution. On stands already established, which have not been treated with borax, apply borax at the rate of 20 to 35 pounds per acre. The borax may be broadcast uniformly with a cyclone hand seeder or mixed with the recommended topdresser. Borax response is so outstanding that failure to get uniform distribution will result in streaks through the field.

Varieties:

Kansas Common Oklahoma Common or Utah Common are generally best adapted. Grimm is also satisfactory in the mountain area. Foreign or colored seed are not recommended.

Inoculation:

Inoculation is important. Use a commercial preparation and follow carefully the directions given on the carton.

Planting Dates:

Fall seedings are preferred except in the Mountain Area. Fall seeding permits the alfalfa to get better established before the hot dry summer. There is also less competition from weeds in the fall and winter than in the spring.

Coastal Plain—September 1-15.

Lower Piedmont—September 1-15 preferred or March 1-25.

Upper Piedmont—August 15-31 preferred or March 1-25. Mountains below 2,500 feet—August 1-31 preferred or April 1-30.

Mountains above 2,500 feet—April 1-30 preferred or August 1-15.

Seeding:

Sow 20 to 25 pounds of inoculated seed with an alfalfa and clover drill, grain drill, cyclone seeder, or by hand. The seed should be covered one-half inch deep. A clover seeding attachment on a grain drill is the most satisfactory method of sowing because of uniform seeding and covering. Where the disks on a grain drill are eight inches apart it is advisable to drill one-half of the seed in one direction and the other half across at right angles to the first. If it is necessary to seed by hand, the rate of seeding should be increased. The seed should be sown across the field in both directions to assure better distribution, covered with a spike tooth harrow, or weeder, and followed by a roller or cultipacker.

Cutting:

Alfalfa should be cut in early blossom stage (about ¼ flowers open). The greatest yield per acre of protein is obtained when the alfalfa is cut at this stage. Cutting too early weakens the plants, and delayed cutting results in excessive shedding of the leaves. At least three and in most cases four cuttings can be made each season. The last cutting should be early enough to allow the alfalfa to make 6 to 10 inches of new growth before the first killing frost. This fall growth period is necessary in order for the alfalfa to store enough food in the roots for winter survival and vigorous growth the following spring.

Curing:

The curing method should be such as to preserve the green color. Handle the hay as little as possible to prevent the leaves from shattering. Raking the hay in windows or in small cocks while it is green is a good method of curing to preserve the green color and save the leaves and stems. The fine stems and leaves contain about 70 percent of all feeding value of cured legume hays.

Cultivation:

On established stands where the soil has a tendency to bake, there is frequently an advantage in running a disk, set at a slight angle, over the land preceding the spring topdressing application. Harrowing with a spring-tooth harrow or alfalfa harrow may be desirable after the second or third cuttings where weeds are present.

* Compiled by E. R. Collins, In Charge, Agronomy Extension in cooperation with J. R. Piland, R. L. Lovorn, W. W. Woodhouse and J. F. Lutz of the Agronomy Department of the North Carolina Experiment Station.

TEMPORARY GRAZING SCHEDULE TO SUPPLEMENT A PERMANENT GRASS-LEGUME PASTURE¹

APPROXIMATE GRAZING PERIOD

	Seeding Rate	Variety	DATE OF SEEDING			Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
			Coastal Plain	Piedmont	Mountains												
Rye or Barley	2 Bu.	Abruzzi or Balbo															
	3 Bu.	Iredell or Randolph	Sept. 1-15	Aug. 20-31	Aug. 20-31												
Wheat	2-2½ bu.	Coastal Plain & Piedmont: Carola or Redheart Mountains: Fulcaster & Leaps	Nov. 1-15	Oct. 10-31	Sept. 25-Oct. 10												
Oats	2 Bu.	Fulgrain or Fulghum															
Wheat	1 Bu.	See above Mts.: Fulcaster & Leaps	Nov. 1-15	Oct. 10-31	Sept. 25-Oct. 10												
Crimson Clover	20 lbs.	Southern Grown															
Barley	1 Bu.	Iredell or Randolph	Sept. 1-15	Aug. 20-31	Aug. 20-31												
Rye	1 Bu.	Abruzzi or Balbo															
Crimson Clover	20-30 lbs.	Southern grown	Sept. 1-Oct. 15	Aug. 15-30	July 15-Sept. 1												
Rye Grass	15 lbs.	Italian	Sept. 1-Oct. 15	Aug. 15-Sept. 30	July 15-Sept. 1												
Crimson Clover	15 lbs.	Southern grown															
Sudan Grass	30-35 lbs. broadcast or 15 lbs. in 2 foot rows		April 25-June 1	May 1-July 1	May 20-June 10												
Soybeans	2 Bu. Bdc. 1 bu. rows	Tokio, Biloxi Ogden, etc.	April 15-July 1	April 15-July 1	May 15-June 15												
Lespedeza	25-40 lbs.	Korean or Kobe	Feb. 1-March 15	Feb. 15-March 15	March 15-April 15												
Kudzu	2 or 3 year old crowns (rooted sections of the vines) planted in late winter.											Intermittent.	Do not overgraze prior to frost.				
Corn & Velvet Beans	Plant velvet beans in corn at time of planting																
Corn & Soybeans or Cowpeas	Plant soybeans or cowpeas at time of planting. Cowpeas may also be planted when corn is laid by.																

¹ Grazing will be available for the approximate period indicated. Some periods will give more grazing than others or a certain amount of growth can be carried over until grazing is needed. Planting dates will affect grazing periods and plantings should be adjusted whenever possible to produce grazing when needed.

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING OF THE UNIVERSITY OF NORTH CAROLINA AND U. S. DEPARTMENT OF AGRICULTURE, CO-OPERATING, N. C. AGRICULTURAL EXTENSION SERVICE, I. O. SCHAUB, DIRECTOR, STATE COLLEGE STATION, RALEIGH. DISTRIBUTED IN FURTHERANCE OF THE ACTS OF CONGRESS OF MAY 8 AND JUNE 30, 1914.