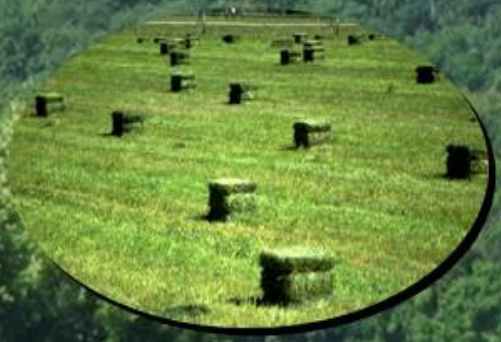
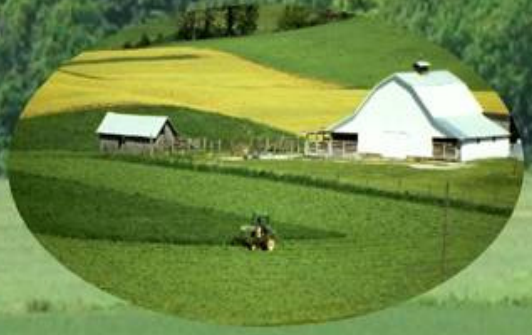
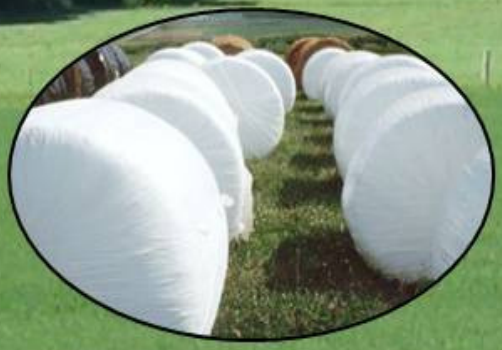
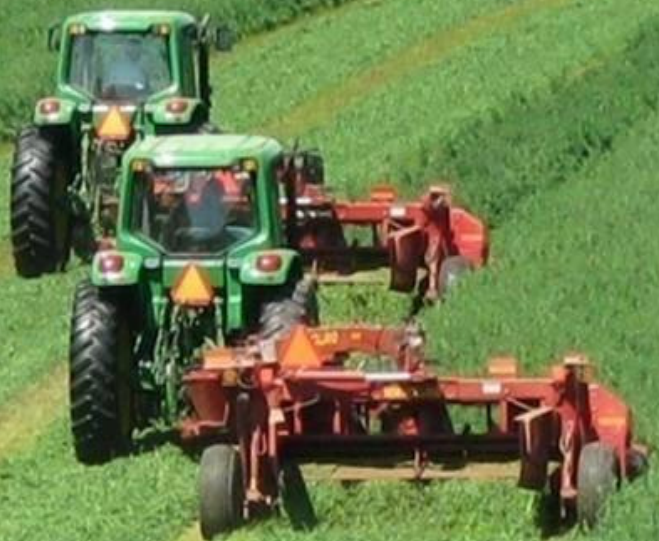
Growing Alfalfa in the South









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Growing Alfalfa in the South

Garry Lacefield, Don Ball, Dennis Hancock, John Andrae and Ray Smith[1]

Alfalfa, often called "The Queen of the Forages," is one of the most widely grown crops in the United States and is one of the most important forage crops in the world. It has a high forage yield potential, and can produce these high yields without nitrogen fertilization. Furthermore, alfalfa is high in digestible energy and protein, which makes it an extremely valuable feed. When alfalfa is included in a livestock ration, it can reduce or eliminate the need for protein supplements while providing high levels of digestible energy. In addition, its relatively high levels of calcium, phosphorus, and magnesium help to minimize mineral supplementation costs.

Alfalfa: The World's most important forage crop.

Alfalfa is a versatile crop that can be used for pasture, or as hay, silage, or greenchop. As a result of its versatility, yield potential, and quality, alfalfa can be used successfully in many types of livestock feeding programs. Consequently, it is highly sought after and can be a profitable cash crop. It can also play an important role in crop rotations since it supplies substantial amounts of organic nitrogen to subsequent crops and has numerous other positive effects on soil fertility, soil structure, and soil health.

Economic conditions have increased the demand for high-quality forage in the Southern USA, which has spurred an expansion of alfalfa production in the region. This expansion has been supported by several new and on-going plant breeding, research, and extension efforts by scientists at various Land Grant universities and private companies. New alfalfa varieties, more efficient harvest and curing systems, and improved production practices have been developed. These efforts have resulted in the sustainability of high alfalfa yields, forage quality, and persistence in the South.

Alfalfa is not a new crop in the South. It has been grown in the region since the late 1800's and continues to be recognized as a superb forage species. Nonetheless, to date alfalfa has not attained the status in the South that it has in other parts of the nation. Like other regions, alfalfa acreage moved slowly upward for several decades in the early 1900's. Then, with the arrival of the alfalfa weevil in the late 1950's and an abundant supply of inexpensive nitrogen fertilizer, alfalfa acreage fell sharply in the early 1960's.

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Since then, southern alfalfa acreage has remained relatively low. Production problems, such as a lack of modern well-adapted varieties and pest infestations, limited alfalfa yields and stand persistence. Low fertilizer and transportation costs during this era made it impractical for livestock producers in the South to grow their own alfalfa. If they needed alfalfa hay or other protein supplements, it was more cost effective to import them from other regions.

However, fertilizer and transportation costs have increased substantially in recent years. This has resulted in increased demand for high quality forage produced at the local level. As a result, alfalfa acreage in the South is increasing once again.

The potential for further acreage expansion is great. It is estimated that the region could easily produce and benefit from over 5 million acres! In the region as a whole, around 80% of the alfalfa is harvested as hay. Most of the remainder is harvested for silage or baleage, with a minor amount being harvested as greenchop. Approximately 45% of this alfalfa is used by horse producers, around 40% in the dairy industry, and 15% by beef cattle enterprises. A small quantity is used for sheep, goats and other farm animals. Though grazing alfalfa has historically been a very minor harvest method, this has become a significant option for some livestock producers in the region, especially those who market “grass-fed” meat and dairy products.

Alfalfa is a high yielding, high quality perennial legume

Steady progress is being made in overcoming the problems with alfalfa production in the South. The alfalfa weevil now can be effectively controlled, seed of southern-adapted varieties is now readily available, and yields are increasing. In the upper South, alfalfa is usually harvested 3 to 5 times per year, while the long growing season in the lower South often allows as many as 6 to 8 harvests. On-farm yields average between 3 and 4 tons of hay (or equivalent) per acre, with top producers often getting 6 or more tons per acre without irrigation and 8 or more tons per acre when irrigated. Yields of over 9 tons per acre have been attained in research trials in several southern states, with a record 10.13 tons/A in Kentucky research trials without irrigation.

Alfalfa is no longer a neglected crop in the South! Dozens of research studies and demonstrations are currently in progress. In addition, there are numerous publications on alfalfa available from Land Grant universities and commercial firms within the region, and various training programs on alfalfa are performed by Extension personnel in many states. In view of the current interest, enthusiasm, and effort that alfalfa is presently receiving, as well as the known need and potential for acreage expansion, the future of this magnificent forage crop in the South appears bright!

PRODUCTION REQUIREMENTS

Profitable alfalfa production requires obtaining high yields of high quality forage, a long stand life, and skillful marketing of the product. This requires attention to details, timely action, and planning. There are four basic prerequisites for successful alfalfa production:

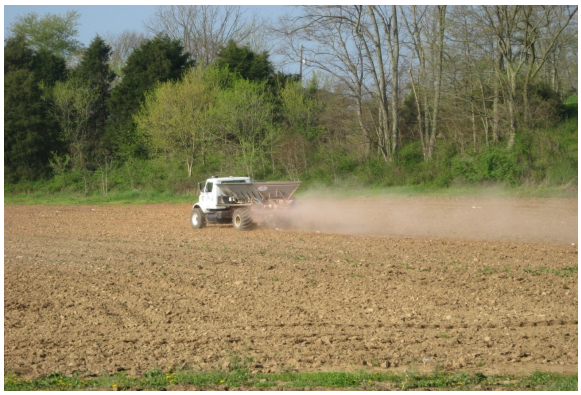
1) Selection of a well-drained site that allows for the development of a deep and healthy root system
2) A willingness to apply fertilizer and lime (as necessary) and control pests as required
3) The ability to harvest in a timely manner
4) A viable strategy for marketing or otherwise utilizing the alfalfa

Because of the wide range in soil and climatic conditions throughout the South, specific recommendations will not be offered here, but important general principles will be reviewed that have been documented through research and farmer experiences. Specific recommendations on varieties, fertility, seeding dates and rates, herbicides, insecticides, and harvest management should be obtained from the appropriate Land Grant University.

■ Site Selection

Alfalfa requires a well-drained soil for optimum production and long stand-life. Root rot diseases and winter heaving damage (upper South) are greater on poorly-drained than on well-drained sites. Progress has been made in variety improvement; however, varieties are not available that persist under waterlogged soil conditions. A soil map is useful in locating fields suitable for growing alfalfa. Level land is not a requirement for alfalfa, but safe operation of machinery must be considered. Sites with a high water table, a shallow hardpan, bedrock, or other impediment to root development are also not well suited for alfalfa production. It is common in the South for an acidic subsoil to inhibit sufficient root development. In the Coastal Plain regions in the lower South, subsoil acidity should be evaluated by collecting soil samples in 1-ft increments down to 4 ft. The pH in each of these increments should be $\geq$ 5.5.

■ Soil Test and Fertilize



Soil test and fertilize according to recommendations for good yield, persistence, and profit

A soil test is the most economical investment in an alfalfa fertility program. A soil test should be used as a guide to determine application rates of lime, phosphorus, and potassium. Tissue analyses taken within 10 days of a summertime harvest can also fine-tune fertilizer needs.

Alfalfa grows best and sustains longer-lived stands when the soil pH is maintained at 6.5-6.8. Nitrogen fixation in the root nodules will be reduced as pH decreases. Micronutrients may be required in some areas. Consult state fertilizer recommendations for specific elements and rates.

■ Variety Selection

Proper variety selection can have a dramatic impact on yield, quality, and stand longevity. Select adapted, high yielding, and pest-resistant varieties. Consider using more than one variety if the planting involves a large acreage. Most states in the South publish recommended alfalfa varieties based on yield and persistence trials. Plant breeders at Land Grant universities and within private companies continue to release varieties specifically for the South. As more new varieties with improved adaptability, yield potential, pest resistance, and persistence are made available to southern growers, the feasibility of alfalfa production within the region will be further enhanced.

■ Inoculation

Most companies market pre-inoculated alfalfa seed that have been coated with an inert material, usually lime, to protect the inoculant. Use of pre-inoculated seed saves time and helps to ensure adequate and appropriate inoculation has occurred. No further inoculation before planting should be necessary, unless the inoculated seed has been stored improperly or the planting date recommendation has expired. Coated seed normally flows faster through most seeding equipment. If the seed is not pre-inoculated or the inoculant coating is suspected of being ineffective, inoculate the seed just before planting with fresh inoculant specific to alfalfa. Protect packages of inoculant from direct sunlight or hot temperatures. Use a commercially available adhesive or some type of sticking agent to ensure that sufficient inoculant is stuck to each seed. One 8-ounce bag of inoculant will generally be enough to inoculate one bag of seed. However, always read and follow the label instructions.

Poor inoculation

■ Weed Control during Establishment

Weeds can drastically reduce alfalfa stands, yields, and forage quality. Alfalfa stands are especially susceptible to weeds during establishment. Fortunately, there are preplant incorporated herbicides available that control many grassy weeds that germinate and compete with alfalfa. However, these herbicides generally do not provide much control of broadleaf weeds, thus post-emergence herbicide applications may be necessary.

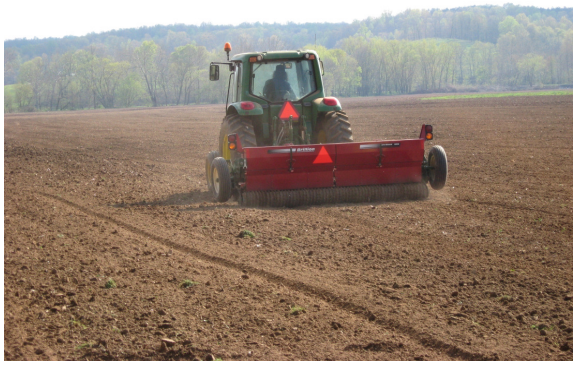
Do not seed grass with alfalfa if a pre-emergence herbicide is used to control grass weeds. If an alfalfa-grass mixture is desired when using pre-emergents, drill grass into established alfalfa in late summer or fall (i.e., six months or more after the alfalfa has been seeded). Always read and follow the herbicide label, especially for residuals that could affect establishment.

■ Seeding in Tilled Seedbeds

A firm seedbed, which will hold moisture close to the seed for rapid germination and prevent new roots from drying out, is an important factor in successful establishment of new stands. Plowing and preparing the soil 30 to 60 or more days before seeding is ideal. This allows lime and fertilizer to be incorporated into the plow layer and gives time for rains to firm the soil and build up a

moisture supply. When spring seedings (recommended only in the upper South) are to be made on soils with a high clay content, fall plowing is desirable to allow freezing and thawing to break down the large clods.

Alfalfa can be sown successfully with a cultipacker-seeder, using a grain drill with a small seed attachment, or by broadcasting the seed followed by use of a cultipacker. Seeding into a firm seedbed and cultipacking will ensure proper seed-soil contact. Regardless of seeding method, the seed must not be planted too deep (1/8 to 1/4 in. in loamy or clay loam soils; 1/4 to 1/2 in. in sandy loam or sandy soils).



Seeding in Tilled Seedbeds

■ No-Till Seeding

Alfalfa can also be planted with a no-till drill into sods or other vegetative cover that is dormant or that has been suppressed with herbicides. By seeding no-till rather than in tilled seedbeds, soil erosion is drastically reduced, rocks remain below the surface, soil moisture is conserved, less time and fuel is expended, and seedings can be made in a more timely manner. Calibration of seeding equipment is very important regardless of seeding method.

Research and experience have shown that the vegetative cover must be dormant or dead before seeding. When planting into dead or dormant sod, insects must be controlled to prevent stand loss. Lime and fertilizer applications should be made well in advance of seeding, and perennial weeds need to be controlled prior to seeding.

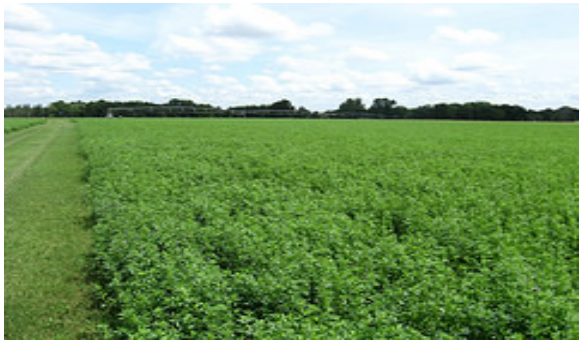
■ Fertilizing Established Stands

Alfalfa stands must have adequate soil fertility to be vigorous. Well-nodulated stands need no nitrogen, but lime, phosphorus, and potash must be added according to soil test recommendations. Boron, molybdenum, and possibly other micronutrients may also need to be applied. Check state and local recommendations for amounts and timing. Alfalfa, like any other high yielding crop, is a heavy user of soil nutrients. For example, each ton of alfalfa hay may remove as much as 15 lbs of phosphate and 60 lbs of potash. Productive, high-yielding stands require that these nutrients be returned to the soil (via fertilizer, manure, or other sources) in order to maintain high yields and to persist. Since grass competes vigorously with alfalfa for potassium, higher potassium rates may be necessary for alfalfa-grass mixtures.

Soils differ in their capacity to supply nutrients, so annual soil tests should be made to monitor fertility changes and avoid the occurrence of critical deficiencies. For high yields, the pH level should be maintained at 6.5-6.8. Corrective fertilization can be practiced at any time during the year. However, a good time to lime and fertilize the stand is after the last harvest of the growing season and before growth begins the next growing season. In soils where leaching is possible (sandy soils), one-half of the annual potassium fertilizer should be applied after the second cutting of the growing season.

■ Weed Control

The most important and effective weed control factor is a dense, thick, vigorous stand of alfalfa. Harvesting alfalfa at the appropriate stage of maturity will also help prevent weed encroachment. Proper cutting height (leaving a 2-3 inch stubble) can kill or reduce the vigor of many weeds, but will not injure alfalfa. Many different weeds can become a problem in alfalfa, but herbicides are available for control of most weeds in alfalfa stands. In addition to selective herbicides used during regrowth, some broad-spectrum and non-selective herbicides can be used in dormant stands and, in some cases, immediately following harvest.



Weed Free Alfalfa Field

■ Insect Control

Alfalfa weevil and potato leafhopper control is often necessary for high yields, high quality, and long-lived stands. Other insects may, at times, attack alfalfa. These include meadow spittlebugs, aphids, clover-root curculios, three-cornered alfalfa hoppers, and grasshoppers. In the South, blister beetles will occasionally infest alfalfa, but are rarely problematic. Use of resistant varieties, proper harvest and fertility management, routine scouting, biological control, and selective use of insecticides are important factors in insect control.

■ Disease Control

Bacterial wilt, leaf spot, anthracnose, and phytophthora are the diseases that generally cause the most serious damage to alfalfa stands, although several other diseases can reduce yields or damage stands. Practices that help control alfalfa diseases are:

a) Use certified seed of a recommended variety. If a particular disease is known to be present on the farm, select a variety known to have resistance to that disease.

b) Avoid seeding alfalfa in soils where alfalfa or clover was grown during the preceding two years. This will reduce damage from sod- or plant debris-borne disease organisms. When possible, plant into a site that has produced a cultivated crop for the previous 2 or 3 years.

c) In the upper South, make summer seedings before August 15 to provide stands with sufficient growth before cold weather to withstand winter injury and reduce the risk of Sclerotinia crown and root rot and heaving. Early spring seedings also are successful in this area. Depending on location, alfalfa may be seeded as late as early November in the Deep South.

d) Allow alfalfa to go into the winter after the last cutting with enough growth (usually 6-8 inches) to develop sufficient root reserves.

e) Follow the recommended practices for liming, fertilizing, seeding, and cutting.

f) Control insects to prevent weakening the plants and making them more susceptible to diseases.

Alfalfa Weevil Damage

■ Harvesting for Quality

Alfalfa, alone or in grass mixtures, may be used as hay, baleage, or silage. The latter two methods are increasing in use. A higher quality feed, better suited for mechanized handling and feeding, can be preserved by making silage or baleage, particularly from the spring growth. Since less drying is required than for hay, fewer leaves are usually lost and there is less risk of rain damage. Under favorable drying conditions, the forage can be mowed, chopped, and placed in the silo or possibly even baled (as baleage) on the same day.

Research has proven the effectiveness of some chemical preservatives and microbial inoculants that permit hay to be safely stored at higher moisture contents. These products allow more flexibility in producing hay and are now commercially available. Additional information on these products are available from your state's Cooperative Extension Service.

Climate-based recommendations for harvest dates and schedules vary among and within states. Additionally, these recommendations may need to be changed to meet yield, forage quality, and stand persistence goals. In general, the quality of alfalfa decreases as the plant transitions from vegetative (leafy) to reproductive (flower) stages (Table 1). However, yields increase during this transitional phase. Furthermore, repeatedly harvesting alfalfa in a vegetative stage of maturity can reduce stand longevity. In general, alfalfa cut in the range of late bud to early bloom will result in acceptable yields of high quality feed with a minimal effect on stand persistence.

Good quality alfalfa should contain from 17-20% crude protein (CP) and 60-65% total digestible nutrients (TDN). Six tons of good alfalfa hay contains more digestible energy than 150 bushels of corn and more protein than 2 tons of soybean meal.

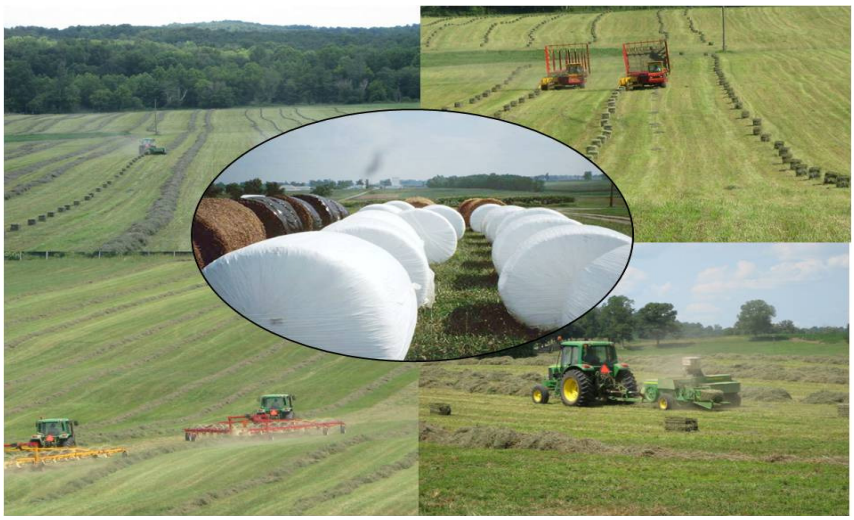
Of course, the ultimate test of forage quality is animal performance. Forage must be palatable (readily consumed by animals) in addition to containing sufficient energy and protein. Research and farmer experience have shown alfalfa to be a superior feed that is readily consumed. In fact, high quality alfalfa may actually stimulate intake by livestock that are consuming low quality forages.

Table 1. Expected range in forage quality† for alfalfa at various maturity stages.‡

Stage of Maturity	CP	NDF	ADF	TDN	RFQ
Vegetative	**24-27**	**25-37**	**20-27**	**68-75**	**230-300**
Bud	**22-26**	**38-47**	**28-32**	**64-67**	**160-250**
Early bloom	**18-22**	**42-50**	**32-36**	**61-64**	**125-180**
Mid-bloom	**14-18**	**46-55**	**36-40**	**58-61**	**100-150**
Late bloom	**9-13**	**56-60**	**41-43**	**50-57**	**90-110**

† Alfalfa will often be higher in fiber concentration, less digestible, and have lower relative forage quality when subjected to higher temperatures or soil moisture stress.
Abbreviations: CP = crude protein; NDF = neutral detergent fiber; ADF = acid detergent fiber; TDN = total digestible nutrients; RFQ = relative forage quality.
‡Adapted from Ball et al, 2007. Southern Forages, 4th Edition.

MANAGEMENT GREATLY AFFECTS QUALITY OF THE FORAGE HARVESTED AND STORED



Harvest at proper stage and save leaves for highest quality.

□ Stage of maturity - Stage of maturity at harvest has the most significant influence on forage quality. Fortunately, this factor can largely be controlled by management. As alfalfa plants advance from the vegetative to the reproductive (flowering) stage, they become higher in fiber and lignin, lower in protein content and digestibility, and less acceptable to livestock (Table 1).

□ Leafiness - Fiber digestibility and protein, energy, and mineral content are much higher in leaves than in stems. Thus, leaf loss during the cutting, raking, and baling processes can greatly reduce alfalfa quality (Table 2).

□ Color - A hay crop with bright green color indicates proper curing, high carotene content, and good palatability. However, a slight color change usually does not indicate significantly reduced forage quality. Hay that has been either sunbleached or has had a small amount of rain damage still can be good quality feed, despite some discoloration. Regardless of cause, some hay buyers discount hay that is discolored.

□ Odor and condition - The smell of newly- mowed hay is the standard with which to compare all hay odors. Musty or putrefied (rotten) odors indicate poor quality. Foul odors and dustiness can lower

Table 2: The Effect of Handling Conditions on Alfalfa Hay Losses.

Nutrient Factors	Raked and Baled Correctly (lbs/acre)	Losses (lbs/acre)			
		Baled Too Dry	Raked Too Dry	Raked and Baled Too Dry	Total (%)
Dry Matter	2900	-100	-700	-1000	34
Crude Protein	660	- 60	-210	- 290	44
T.D.N.	1710	- 90	- 480	- 680	40

Source: Adapted from materials compiled by USDA-Univ. of California

palatability and reduce hay value, especially in horse markets. Common causes of odor problems are weather damage during curing or baling, and storing at moisture levels that are too high.

■ Grazing

Alfalfa or alfalfa-grass mixtures can provide exceptionally high quality pasture. Alfalfa's high forage quality allows for beef stocker and finishing gains that exceed 2.5 pounds per day. It is best to use some type of managed grazing (i.e., rotational stocking) system. The efficiency of alfalfa production is greatest when a stand is allowed to accumulate to the bud to early bloom stage, grazed to a stubble height of 2 – 4 inches, and then allowed to rest for 25 – 30 days.

The first rotation cycle of the grazing season is typically the most difficult to manage due to rapid forage growth. It is often necessary to initiate grazing at an early growth stage and defer some paddocks in the rotation. Deferred paddocks can be harvested as hay at its optimal maturity or can be grazed at a more mature stage. Grazing-tolerant varieties are recommended.

The commercial development of temporary, portable fence and water systems has made controlled grazing practices affordable and practical for producers to implement. Managed grazing allows better control over the forage supply and reduces waste. In managed grazing, forage utilization efficiency improves when the animals are rotated among more and smaller pastures (paddocks). Alfalfa can also be effectively utilized as a creep grazing crop. This is most effective when mature animals with relatively low nutrient requirements (i.e. beef cows) are mixed with animals with high nutrient needs (i.e. nursing calves). Construction of a creep gate that allows calves to pass into an adjacent alfalfa pasture while restricting cow access is a simple and often cost-effective supplementation strategy.

Ruminants can occasionally bloat when grazing alfalfa, but this risk can be minimized by following some simple management practices. Bloat normally occurs when hungry animals are turned into vegetative paddocks and are allowed the opportunity to gorge on fresh alfalfa. It also may occur when cattle are introduced to an alfalfa pasture in early morning hours to dew-laden paddocks. Bloat risk can be minimized by introducing animals to fresh paddocks only when they are not hungry. This can be easily accomplished by closely monitoring alfalfa residue height and moving animals before forage supply is limited. Rotating animals in late morning or early afternoon is also beneficial. Older stands of alfalfa can be interseeded with cool season grasses to minimize bloat risk and

Alfalfa as a grazing crop.

improve production potential. Mixed grass and alfalfa stands are often higher yielding than pure alfalfa pastures and may also provide a more consistent forage growth pattern so that forage surplus and deficits are more easily managed. In circumstances where bloat risks are high, it may be necessary to feed an energy supplement containing monensin or a chemical bloat preventative like poloxalene.

■ Alfalfa in a Crop Rotation

Alfalfa often can be effectively used in rotation with other crops. On farms with land too steep for continuous corn, a rotation of silage corn and alfalfa, either in strips or whole fields, will often produce more forage than any other rotation. Alfalfa helps stabilize the soil, reduces erosion, and improves soil structure. Alfalfa usually provides 100 or more pounds of nitrogen per acre to the crop that follows it in a rotation.

A 3 to 5 year rotation allows utilization of alfalfa during its most productive period. The stand may then be plowed or planted no-till to another crop before it becomes more susceptible to disease and weed problems and begins to thin. Alfalfa should never be replanted into the same field for at least one year due to the alleopathic effect of mature plants on development of new seedlings and minimal risk of disease for the new planting.

■ Alfalfa As A Wildlife Plant

In one sense alfalfa has always been a wildlife plant; after all, wild animals use alfalfa fields and other forage plantings anytime they choose. However, in recent years there has been a substantial amount of alfalfa planted specifically for wildlife, especially deer. This has occurred largely because of the development and commercial availability of grazing-tolerant varieties that hold up much better under continuous and/or close grazing than do hay type varieties.

Advantages alfalfa offers are mostly the same as those it offers to livestock: high forage quality, excellent palatability, good dry matter yield, and drought tolerance. Also, a particularly valuable trait of alfalfa in wildlife food plots is its long growing season, which helps ensure that wild animals will have access to good quality forage whenever they need it. For birds of many species, including quail and wild turkey, insects found within an alfalfa stand provide an excellent source of protein.

Alfalfa requires more precision during planting, higher pH and fertility, and more management in general than most plants commonly established for wildlife. However, the excellent nutrition it provides helps increase body weights, facilitates rebreeding, and favors antler development in buck deer. Many wildlife enthusiasts who have tried alfalfa, particularly those who are serious about providing year-around high levels of nutrition to animals, have had outstanding success, assuming they have followed the basic agronomic principles known to be important in growing the crop.

ECONOMIC CONSIDERATIONS

Recent price increases in supplemental feeds, minerals, and transportation costs have placed a premium on high quality, locally-produced forage. This has made alfalfa production in the South increasingly attractive. Now, with new alfalfa varieties, more efficient harvest and curing systems, and improved production practices, it has become increasingly feasible to grow alfalfa in the South.

A thorough look at the costs and benefits is an important first step in determining if alfalfa is right for your farm. Extension economists at several Land Grant universities in the South have developed budgets for alfalfa production that are downloadable from the internet. These budgets are usually done assuming that the existing soil fertility levels in the field are moderate. Consequently, almost 2/3 of the establishment cost consist of expenditures for lime and fertilizer. Certainly, more fertile sites and soils that are more responsive to lime will decrease these initial expenditures.

The total annual cost of producing and harvesting alfalfa also depends on the fertility level. Furthermore, the annual "per-unit" cost of alfalfa is also influenced by the crop's yield, the harvest method used (i.e., grazing, square-baled hay, round-baled hay, silage, etc.), pest and disease pressure, the life expectancy of the stand, and other production considerations. As a result, each production system will be different. Therefore, it is recommended that a budget be developed for each specific production system being evaluated.

Though alfalfa has a relatively high production cost when compared to other forage crops, it is similar to the cost of producing many southern row crops. However, the potential return on investment for alfalfa enterprises can be quite high.

A Swathed Field of Alfalfa

■ Alfalfa's Value

It is also important for a producer to consider what he (or she) is getting for their money and effort when growing alfalfa. The forage quality of alfalfa is excellent, often containing over 16% crude protein and 60% total digestible nutrients (TDN) on a dry matter basis. Some southern farmers have realized that alfalfa has excellent cash crop potential and routinely sell all of the hay they have produced.

The economics of producing alfalfa become increasingly attractive at high yield levels and/or a long stand life. Fixed costs per acre and the establishment costs are relatively high, but once these expenses have been offset, additional increases in yield or increased length of stand life of this high-value crop tend to rapidly increase net profit. Thus, it is very important to manage alfalfa in a way that emphasizes high yields and a long stand life.

■ Value in Crop Rotations

The amount of nitrogen available to a crop planted behind alfalfa can easily exceed 100 pounds per acre. With current nitrogen prices, 100 lbs of nitrogen is valuable! Alfalfa also is a deep-rooted crop that leaves root channels in the soil, thus allowing the roots of the following crop to penetrate more deeply than would otherwise be possible. Reduced pest problems in row crops planted in rotation with alfalfa, as compared with continuous row cropping, adds additional value. Though it is difficult to estimate the true value of the contribution that alfalfa makes to a succeeding crop, research and experience has shown that (for example), corn yields typically increase by at least 10-15% when following alfalfa.

Alfalfa is a Deep Rooted Crop

■ Alfalfa's Value to the Soil

Data from the University of Missouri indicate that the average soil losses per acre for various crops from fields having a 5% slope 200 feet long would be as follows: soybeans - 14 to 35 tons; corn or grain sorghum - 13 to 25 tons; wheat - 8 to 13 tons; and alfalfa - 2 to 4 tons. This loss is again difficult to quantify in terms of dollars, but every good farmer is acutely aware of what such soil losses will mean to him and his family in the long run.

■ The Importance of a Diverse Marketing Plan

The best laid plans do not always come to fruition. For example, alfalfa hay producers quite commonly have (in fact likely will have) some cuttings that are too low in quality, too weedy, or too damaged to be acceptable to the premium cash hay market. A diversified marketing plan will help one deal with such eventualities. If a producer's primary outlet is the premium hay market, then it may be helpful to have a side market for marginal or rain-damaged hay lots. This may include selling the lower quality forage to neighboring livestock operations or marketing it through their own livestock. Regardless of the situation, it is advisable to have more than one outlet for the product.

Conclusion

Alfalfa is not for everyone. However, alfalfa could be a tremendous asset on many farms in the South. When farmers in this region objectively consider the facts with regard to the economics of growing alfalfa and the recent developments that make alfalfa production in the South more feasible, they often find that it has great potential on their farms. In fact, some might find that alfalfa has the potential of being the most profitable enterprise on their farms.

Resources:

Resources are available through local, state and national sources including many universities and organizations and industry.

Many websites also have valuable alfalfa information as well as links to other resources.
Examples include: NAFA - http://www.alfalfa.org/
NAAIC - http://www.naaic.org/
Kentucky - http://www.uky.edu/Ag/Forage/
Georgia - http://www.georgiaforages.com/
Alabama - http://www.aces.edu/department/forages/

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National Alfalfa and Forage Alliance.