

L-491

Agronomic Calendar for Oklahoma Alfalfa Growers

**Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University**

Agronomic Calendar for Oklahoma Alfalfa Growers

Alex Rocateli
Forage Systems Extension Specialist

Regardless of whether the stand is established, or field preparation is underway to be newly seeded; optimum alfalfa production, stand life longevity and profitability rely on good management practices throughout the year. Management strategies can incorporate many factors such as variety selection, soil nutrients, weed management, as well as appropriate hay cutting, curing, baling and marketing. The *Agronomic Calendar for Oklahoma Alfalfa Growers* is designed to supply general, monthly alfalfa production information for both stand establishment (first-year alfalfa) and established stands (one year or older stands).

Additional alfalfa references and fact sheets can be found at extension.okstate.edu or other information sources as listed.

The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

Oklahoma State University, as an equal opportunity employer, complies with all applicable federal and state laws regarding non-discrimination and affirmative action. Oklahoma State University is committed to a policy of equal opportunity for all individuals and does not discriminate based on race, religion, age, sex, color, national origin, marital status, sexual orientation, gender identity/expression, disability, or veteran status with regard to employment, educational programs and activities, and/or admissions. For more information, visit <https://eeo.okstate.edu>.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President for Agricultural Programs and has been prepared and distributed at a cost of 000 cents per copy. 07/2020 GH.

JANUARY

Stand Establishment

Identify fields where new stands will be established. Alfalfa is sensitive to picloram and sulfonyleurea herbicides, so if any of these herbicides were used in the proposed field in the last 36 months, check for rotation crop restrictions in the herbicide label. Also, check for potential alfalfa autotoxicity issues if the field was planted with alfalfa in the last two years (PSS-2601, Alfalfa Autotoxicity: A Good Reason to Rotate Alfalfa Fields). Finally, take a soil sample and submit for analysis well before planned establishment (PSS-2207, How to Get a Good Soil Sample). If the soil pH \leq 6.5, apply and incorporate lime as soon as possible and seed alfalfa in the fall (the earliest). Lime takes at least six months to react with soils.

Established Stands

- **Fertilization:** Take soil samples and follow test recommendations. While the routine analysis is adequate (N, P, K and pH), it is advisable to analyze for secondary and micronutrients to ensure the crop has the proper nutrient levels. Since alfalfa uses a large amount of phosphorus and potassium, soil testing should be done every year or every other year to be sure nutrients are adequate and balanced for a good crop. Check E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Dormant established alfalfa can be spring-tooth harrow cultivated during winter. Cultivation must occur after weed emergence but before alfalfa resumes growth in the early spring. Avoid alfalfa crown injury when cultivating, which can delay growth and proliferate crown diseases. Cool-season weeds (broadleaf and weedy grasses) in established stands (less than 30 alfalfa stems per square foot) can be profitability controlled with a January or a February herbicide application such as terbacil, hexazinone or diuron. It is important to apply these types of herbicides before the alfalfa begins active growth. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access: extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Storage:** Check round bales for waste. Depending on the bale's diameter, a loss of 2 inches on the outside surface can represent more than 10% of the bale's dry matter.
- **Livestock:** Winter grazing established alfalfa stands helps reduce insect infestations and does not hurt alfalfa yield or stand persistence. For the best results, have stocking density high enough to remove all the forage in a couple of weeks. It is important to remove cattle during rainy periods to prevent soil compaction.

FEBRUARY

Stand Establishment

Spring-sown alfalfa in Oklahoma is risky and discouraged due to problems with drying winds, insects and weeds. Moreover, fields for spring alfalfa planting should be fertilized and leveled for improved drainage during February. For planting in the early spring, select an appropriate alfalfa variety for your location based on winter survival, disease and insect resistance, fall dormancy and yield potential (PSS-2602, Selecting Alfalfa Varieties). Visit the OSU Pest e-alerts archive (entopl.okstate.edu/pddl/advisory) to become familiar with the most recurring pests in our area. Another useful reference is the results from OSU Alfalfa Variety Performance Trials (croptrials.okstate.edu/alfalfa). If you plan to graze alfalfa, carefully choose the variety to plant that will hold up to grazing.

Established Stands

- **Fertilization:** Take soil samples and follow test recommendations. While the routine analysis is adequate (N, P, K and pH), it is advisable to analyze for secondary and micronutrients to ensure the crop has the proper nutrient levels. This is an appropriate time for fertilizer application. If the recommendation calls to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. Apply half of the fertilizer now and the remainder after first harvest. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Dormant established alfalfa can be spring-tooth harrow cultivated during winter. Cultivation must occur after weed emergence, but before alfalfa resumes growth in the early spring. Avoid alfalfa crown injury when cultivating, which can delay growth and proliferate crown diseases. Cool-season weeds (broadleaf and weedy grasses) in established stands (less 30 alfalfa stems per square foot) can be profitably controlled with an application of herbicides, such as terbacil, hexazinone and diuron in January or February. It is important to apply herbicides before the alfalfa begins active growth. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access: extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Storage:** Bales stored outside and unprotected should be used by early spring before the air temperature, humidity and precipitation significantly increase. In general, bales should be used by March 1. Keep checking round bales for waste. Depending on the bale's diameter, a loss of 2 inches on the outside surface can represent more than 10% of the bale's dry matter.
- **Livestock:** Grazing alfalfa stubble during winter is a good way to clean up fields. Grazing reduces alfalfa weevil eggs and decreases damage from this insect.

MARCH

Stand Establishment

The incorporation of EPTC or trifluralin herbicides is highly recommended for spring planting. Spring sowing is more likely to be successful in eastern Oklahoma, where rainfall is adequate, but it can be successful statewide if irrigated. Sowing alfalfa in spring is discouraged. If planting in the spring, make sure the seedbed is clod-free, leveled and firm where seeds will be placed in the top 3/8 inch of soil. Do this from March 15 to April 15. After seeding, slightly pack the soil for good seed-soil contact. Even with the use of pre-plant herbicides, weeds are always problems for spring-sown stands. Adopting Round-up Ready® alfalfa varieties may increase chances of controlling weeds during alfalfa establishment, which is critical when spring planting (PSS-2018, Alfalfa Stand Establishment).

Established Stands

- **Fertilization:** Use top-dress fertilizer according to soil test recommendations as soon as possible. Alfalfa should be fertilized before the beginning of spring growth to avoid fertilizer contact with wet foliage. If the recommendation calls to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. Apply at half of the fertilizer now and the remainder after first harvest. Check E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Do not use terbacil, hexazinone or diuron and other herbicides labeled for dormant alfalfa. Alfalfa is actively growing and can be damaged by these herbicides. Cool-season weeds start active growth again in the late winter/early spring, and some can still be selectively controlled in fall-planted stands. Examples are annual grasses controlled with sethoxydim and clethodim herbicides and broadleaf weeds controlled with 2,4-DB. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access: extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Storage:** Bales stored outside and unprotected should be used by early spring before the air temperature, humidity and precipitation significantly increase to reduce loss. In general, bales should be used by March 1. Keep checking round bales for waste. Depending on the bale's diameter, a loss of 2 inches on the outside surface can represent more than 10% of the bale's dry matter.
- **Livestock:** Grazing weevil-infested alfalfa stands in March can eliminate the need for insecticide spraying with minimal reduction of season-long alfalfa production. It is important to focus on minimizing bloat risks.

APRIL

Stand Establishment

Alfalfa planted in mid-March should be growing rapidly (6 to 9 inches tall) before the onset of high temperatures. Pay close attention to where water stands in fields, so drainage can be improved. Alfalfa is very susceptible to waterlog and root rot. It is important to control weeds in spring-planted alfalfa as soon as seedling alfalfa has two true leaves or more. Selective post-emergent herbicides, such as bromoxynil, 2,4-DB, sethoxydim, clethodim, imazethapyr and imazamox can be used in conventional and Round-up Ready® alfalfa. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). If spring sowing is delayed until late April, the establishment of new stands should be postponed until August or September.

Established Stands

- **Fertilization:** Broadcasting fertilizer is justified if nutrient deficiency is detected by leaf tissue testing or visual symptoms. Take a soil test to determine the amount of fertilizer needed. Top-dress fertilizer right after harvest to avoid contact with wet foliage. If the recommendation calls to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. Apply half of the fertilizer after the first harvest and the remainder after the second harvest. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Summer weed control starts. Some herbicide options, such as imazethapyr and terbacil, can be applied right after first cutting in late April or early May. Imazethapyr is a good option for controlling non-ALS resistant pigweed, while terbacil is a better option for controlling grassy summer weeds. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Production:** Time for the first harvest and it is the rainiest season, which continues through much of May. Alfalfa harvests must be very timely to avoid rain damage in the hay. High-quality hay, required by top-producing dairy cows, should be cut before the first signs of bloom. When flower buds appear, the nutritive value of alfalfa begins dropping rapidly. Early harvesting also reduces the size of windrows, decreasing drying time in the field. Watch weather forecasts closely. For maximum animal performance or selling price, have hay tested by a certified laboratory for nutritive values after harvest. Remember, lab results can only be as good as the sample received.
- **Livestock:** Grazing alfalfa with cattle may be the most economical harvest method, especially when interseeded in old grassy fields. However, pure alfalfa stands in early vegetative stages that are growing rapidly have a high probability of producing bloat in cattle.

MAY

Stand Establishment

Spring-planted alfalfa should not be sown after April. Plants will not reach adequate size before the onset of high temperatures. Spring-sown alfalfa should be monitored closely for weeds and insects. On average, May is the month with the highest total rainfall, with almost 10 rainy days. Pay close attention to where water stands in fields, so drainage can be improved.

Established Stands

- **Fertilization:** Broadcasting fertilizer is justified if nutrient deficiency is detected by leaf tissue testing or visual symptoms. Take a soil test to determine the amount of fertilizer needed. Top-dress fertilizer right after harvest to avoid contact with wet foliage. If the recommendation is to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. Apply half of the fertilizer after the most recent harvest and the remainder after the next harvest. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Summer weed control continues. Some herbicide options, such as imazethapyr and terbacil can be applied right after first cutting in late April or early May. Imazethapyr is a good option for controlling non-ALS resistant pigweed, while terbacil is a better option for controlling grassy summer weeds. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access extension.okstate.edu/county. Always follow herbicide labels for the proper use and harvest/grazing restrictions.
- **Hay Production:** Preventing hay fires starts at baling. For small square bales, moisture content should be no more than 20%. During warm, moist conditions reduce to 18%. The upper limit for large packages is about 16% for bales stored in a barn. For round bales stored outside, moisture content at baling can be increased to about 20%. Sunlight and air temperature are the principal factors affecting the drying rate. A wide, fluffy windrow can dry twice as fast compared to a dense, narrow windrow. For maximum animal performance or selling price, have hay tested by a certified laboratory for nutritive values after harvest. Remember, lab results can only be as good as the sample received.
- **Livestock:** Grazing alfalfa with cattle may be the most economical harvest method, especially when interseeded in old grassy fields. However, pure alfalfa stands in early vegetative stages that are growing rapidly have high probability of producing bloat in cattle. Finally, consider an alfalfa variety that holds up well to grazing. Most varieties that are not grazing types, have less grazing tolerance.

JUNE

Stand Establishment

In early June, alfalfa planted last spring might be reaching the boot stage. No more than three cuts should be expected during this first season. Give the new stand a chance to develop strong roots by postponing the first cut to after full-bloom. It is recommended that subsequent cuts occur at 42-day (or longer) intervals for this year.

Established Stands

- **Fertilization:** Broadcasting fertilizer in season is justified if nutrient deficiency is detected by leaf tissue testing or visual symptoms. Take a soil test to determine the amount of fertilizer needed. Then, top-dress fertilizer right after harvest to avoid contact with wet foliage. If the recommendation calls to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. To achieve this apply at least half of the fertilizer after the most recent harvest and the remaining fertilizer after the following harvest. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Scout regrowth after haying to determine if summer weeds need spraying. If selling dairy quality hay is planned, control of summer weeds like pigweeds, crabgrass, and foxtails may be profitable. 2,4-DB herbicide will control small pigweeds (less than 4 inches tall); and sethoxydim and clethodim will control small weedy grasses. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not have any activity on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Production:** Although rainfall incidence during June starts to decrease, alfalfa harvests still must be very timely to avoid rain damage to the hay. The same recommendations for April and May must be adopted.
- **Hay Marketing:** For maximum animal performance and/or selling price, have hay tested by a certified laboratory for nutritive values after harvest. Remember, lab results can only be as good as the sample received.
- **Livestock:** Grazing alfalfa with cattle may be the most economical harvest method, especially when interseeded in old grassy fields. However, pure alfalfa stands in early vegetative stages that are growing rapidly have high probability of bloat in cattle. Finally, consider an alfalfa variety that holds up well to grazing. Most varieties that are not grazing types have less grazing tolerance.

JULY

Stand Establishment

It is too late for liming if recent soil sampling and testing indicated soil pH \leq 6.3. Lime takes at least six months to react and adjust soil pH; consequently, liming should be accomplished from January to February. Fields should be fertilized based on soil testing and leveled for improved drainage. Select an appropriate alfalfa variety for your location based on winter survival, fall dormancy, yield potential and disease and insect resistance (PSS-2602, *Selecting Alfalfa Varieties*). Visit the OSU Pest e-alerts archives (entopl.okstate.edu/pddl/advisory) to become familiar with most recurring pests in your area. Another useful reference is the results from OSU Alfalfa Variety Performance Trials (croptrials.okstate.edu/alfalfa).

Established Stands

- **Fertilization:** Broadcasting fertilizer in season is justified if nutrient deficiency is detected by leaf tissue testing or visual symptoms. Take a soil test to determine the amount of fertilizer needed. Top-dress fertilizer right after harvest to avoid contact with wet foliage. If the recommendation calls to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. Apply at half of the fertilizer after the most recent harvest and the remainder after the following harvest. See E-1021, *Oklahoma Forage and Pasture Fertility Guide* for more information on alfalfa fertilization.
- **Weed Control:** Scout regrowth after haying in old fields to determine if summer weeds need spraying. If you are planning on selling dairy quality hay, control of summer weeds like pigweeds, crabgrass and foxtails may be profitable. The 2,4-DB herbicide will control small pigweeds (less than 4 inches tall) and sethoxydim and clethodim will control small weedy grasses. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Production:** High temperatures and low precipitation in Oklahoma during summer slows hay production. High air temperatures and sunlight during summer can result in excessive forage drying during curing, resulting in leaf losses during baling. Ideal moisture content for baling alfalfa is 13% to 16%. If the alfalfa moisture content is 12% or lower, bale early in the morning when plants uptake moisture from the air. For maximum animal performance or selling price, have hay tested by a certified laboratory for nutritive values after harvest. Remember, lab results can only be as good as the sample received.
- **Livestock:** Dry soils during summer slow alfalfa growth and grazing can be considered an alternative harvest method if forage production is not enough for haying. The probability of bloat is minimal when alfalfa is growing slowly. Adjust the stocking rate to avoid overgrazing. As a rule of thumb, there are 200 pounds of dry matter in every inch of standing forage.

AUGUST

Stand Establishment

The use of pre-plant incorporated EPTC or trifluralin herbicides is optional before fall-sowing. Make sure the seedbed is clod-free, leveled and firm where seeds will be placed in the top 3/8 inch of soil before the optimal planting window from August 15 to September 15. After seeding, slightly pack the soil for a good seed-soil contact. Even with the use of pre-plant herbicides, weeds can be a problem for fall-sown stands. Adopting Round-up Ready® alfalfa varieties can increase the chances of controlling weeds during alfalfa early stages if weeds present in the field are not glyphosate-resistant (PSS-2018, Alfalfa Stand Establishment).

Established Stands

- **Fertilization:** Broadcasting fertilizer in season is justified if nutrient deficiency is detected by leaf tissue testing or visual symptoms. Take a soil test to determine the amount of fertilizer needed. Top-dress fertilizer right after harvest to avoid contact with wet foliage. If the recommendation calls to apply more than 500 pounds per acre of total material, split the application to avoid salt damage. Apply half of the fertilizer after the most recent harvest and the remaining fertilizer after the following harvest. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Scout regrowth after haying fields to determine if summer weeds need spraying. If selling dairy quality hay is planned, then control of summer weeds like pigweeds, crabgrass and foxtails may be profitable. The 2,4-DB herbicide will control small pigweeds (less than 4 inches tall), and sethoxydim and clethodim will control small weedy grasses. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access extension.okstate.edu/county. Always follow herbicide labels for proper use and harvest/grazing restrictions.
- **Hay Production:** High temperatures and low precipitation in Oklahoma during summer slows hay production. High air temperatures and sunlight during summer can result in excessive forage drying during curing, resulting in leaf losses during baling. Ideal moisture content for baling alfalfa is 13% to 16%. If the alfalfa moisture content is 12% or lower, bale early in the morning when plants can uptake some moisture from the air. For maximum animal performance or selling price, have hay tested by a certified laboratory for nutritive values after harvest. Remember, lab results can only be as good as the sample received.
- **Livestock:** Dry soils during summer slow alfalfa growth and grazing can be considered as an alternative harvest method. The probability of bloat is minimal when alfalfa is growing slowly. Adjust the stocking rate to avoid overgrazing. As a rule of thumb, there are 200 pounds of dry matter in every inch of standing forage.

SEPTEMBER

Stand Establishment

The use of pre-plant incorporated EPTC or trifluralin herbicides is optional before fall-sowing, but can improve chances of success. Make sure the seedbed is clod-free, leveled and firm where seeds will be placed in the top 3/8 inch of soil before planting from August 15 to September 15. After seeding, slightly pack the soil for a good seed-soil contact. Even with the use of pre-planted herbicides, weeds can be problems for fall-sown stands. Adopting Round-up Ready® alfalfa varieties can increase the chances of controlling weeds during alfalfa early stages if no glyphosate-resistant weeds, such as horseweed/marestail and pigweed, are present in the field (PSS-2018, Alfalfa Stand Establishment). New stands that are not up and growing by the end of September are more vulnerable to losses from bad weather.

Established Stands

- **Fertilization:** The season is ending. Phosphorus is essential for appropriate alfalfa crown and root survival during the winter. Consider topdressing potash after the last harvest if alfalfa was cut at intervals of 35 days or less. Potassium is important for developing stronger roots that will survive harsh winter conditions. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Scout regrowth after haying fields to determine if summer weeds need spraying. If selling dairy quality hay is planned, control of summer weeds like pigweeds, crabgrass, and foxtails may be profitable. The herbicide, 2,4-DB, will control small pigweeds (less than 4 inches tall), and sethoxydim and clethodim will control small weedy grasses. Glyphosate can be used in Roundup Ready® alfalfa; however, it will not be effective on glyphosate-resistant weeds (horseweed/marestail, pigweed, etc.). Contact the local agriculture educator for specific herbicide recommendations. To find the educator at your county access extension.okstate.edu/county. Always follow the herbicide label for proper use and harvest/grazing restrictions.
- **Hay Production:** Do not harvest alfalfa later than late September. It is important to allow alfalfa to regrow for six weeks before the first killing frost, which occurs from late October to early November in most years. This final regrowth will allow plants to enter the winter months with healthy root systems that will withstand the winter and fuel regrowth next spring.
- **Livestock:** Stop grazing alfalfa in mid-September to allow six weeks of plant regrowth before the first killing frost.

OCTOBER

Stand Establishment

New alfalfa stands planted in August or September should be up and growing. Planting alfalfa in October without irrigation is at a high risk because the frequency of rains typically decreases. A field with 25 to 30 vigorously growing seedlings per square foot that contain five true leaves before the first killing frost will likely survive the winter. Weed infestation at this time may not be an issue; however, it may occur depending on weather conditions. Selective post-emergent herbicides, such as bromoxynil, 2,4-DB, sethoxydim, clethodim, imazethapyr and imazamox can be used in conventional and Round-up Ready® alfalfa. Glyphosate can only be applied in Round-up Ready® alfalfa.

Established Stands

- **Fertilization and weed control:** Phosphorus is essential for appropriate alfalfa crown and root survival during the winter. Consider topdressing potash after the last harvest if alfalfa was cut at intervals of 35 days or less. Potassium is important for developing stronger roots that will survive harsh winter conditions. See E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Hay Storage:** High-moisture hay in a stack may cause a spontaneous fire. For small square bales, moisture content should be no more than 20%. The upper limit for large packages is about 16% for bales stored in a barn. For round bales stored outside, moisture content at baling can be increased to about 20%.
- **Livestock:** Do not graze alfalfa in October. Allow plants to regrow for six weeks before first killing frost.

NOVEMBER – DECEMBER

Stand Establishment

Grazing or harvest of seedling stands is rarely justified at this time of year. Plants need all the green top growth possible for the development of a strong root system. An exception would be to graze weedy grasses that are shading seedling alfalfa plants.

Established Stands

- **Fertilization:** If old stands are still adequately thick (30 alfalfa stems per square foot), but yields were disappointing last summer, low soil fertility may be a limiting factor. Take a soil sample of each field. This is the only way to accurately determine the amount of fertilizer needed. If the soil test recommends, apply lime as soon as possible. While the routine analysis is adequate (N, P, K and pH), it is advisable to analyze for secondary and micronutrients to ensure the crop has the proper nutrient levels. Check E-1021, Oklahoma Forage and Pasture Fertility Guide for more information on alfalfa fertilization.
- **Weed Control:** Winter is a good time to determine the weed management practices for the coming season based on the last season's weed occurrence and management practice experiences.
- **Hay Production:** Harvesting fall regrowth of alfalfa stands can be done after a killing frost without negative effects on production or stand life on stands one year or older. A major problem associated with late-harvesting alfalfa is drying time. Short days and cold temperatures prolong drying times. Grazing after a killing frost reduces the risk of leaving hay in windrows for extended periods.
- **Hay Storage:** Producers should focus on marketing or using bales stored outside. Depending on the bale's diameter, a loss of 2 inches on the outside surface can represent more than 10% loss of the dry matter weight. To minimize storage loss, hay should be sold now or used by March when warm weather begins to increase mold development.
- **Livestock:** Grazing lush alfalfa during or just after light freezes can cause bloat in livestock. It is usually best to graze alfalfa after a killing freeze (below 22 F). Winter grazing of established alfalfa stands helps reduce insect infestations and does not hurt established alfalfa yield or stand persistence. Do not graze winter alfalfa stands less than one year old. It is best to adjust stocking density to remove all forage in a couple of weeks. Remove cattle during rainy periods to avoid damaging stands.



EXTENSION