



Yearly Calendar for St. Augustinegrass Care and Culture¹

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St. Augustinegrass is a fast-growing, warm-season turfgrass used extensively in Florida. It grows well on most well drained soils. For optimum quality, adequate irrigation and fertilization are required. St. Augustinegrass is tolerant to saline irrigation and brackish water, and is the best shade tolerant grass suitable for Florida. Since most St. Augustinegrass cultivars are quite sensitive to freezing temperatures, other turfgrasses may be more appropriate in the northern and panhandle areas of Florida. Also, St. Augustinegrass is coarse (wide) in leaf texture and has poor wear tolerance, which may be undesirable for some purposes.

Cultivars of St. Augustinegrass differ in their resistance to plant pests. Only the cultivars Floralawn and Floratam are tolerant to the southern chinch bug, a common turfgrass insect. Another insect, sod webworm, and the fungal diseases brown patch and grey leaf spot can also cause damage.

As discussed in this section, proper lawn management practices are the best means of avoiding plant pest problems and obtaining high quality turfgrass. If problems continue, contact your local Cooperative Extension Service office for assistance. For further information on available cultivars and establishment practices, refer to lawn establishment and maintenance sections. Local growing conditions and resources available may require growers to slightly deviate from these guidelines.

GENERAL MAINTENANCE

The level of lawn maintenance is dependent on turfgrass quality desired, time, and money available (Table 1). These factors will regulate the amount of fertilizer and pesticides applied each year. Persons requiring minimal maintenance for their lawns should have a low fertility program and apply pesticides only on a curative basis only. This consists of two fertilizer applications per year at the rate of 1 pound of nitrogen per 1000 square feet per application (e.g., 6.25 pounds 16-4-8 = 1 pound nitrogen, 0.25 pound P₂O₅, and 0.5 pound K₂O per 1000 square feet). The first application should follow the onset of spring green-up, and the last should be timed for late summer in north Florida and early fall in south Florida. A high-maintenance lawn in Florida would receive 4 pounds of nitrogen per 1000 square feet per year applied in 1-pound increments during March, May, July, and September. In south Florida, an additional application of fertilizer may be required in early winter due to the extended growing season and sandy soils. Although nitrogen is the element most commonly applied to turfgrass, other essential elements, plus micronutrients, should be part of a fertilizer maintenance program. For all maintenance levels, a minimum of two treatments of a complete fertilizer such as 16-4-8 or 12-4-8 should be made per year in order to supply the other essential elements of phosphorus and potassium. Complete fertilizers (N-P-K) containing micronutrients such as

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manganese (Mn), iron (Fe), sulfur (S), magnesium (Mg) and boron (B) should also be considered, especially if micronutrient deficiencies are expected for the lawn site. Other applications can be just a nitrogen fertilizer source or fertilizer with nitrogen and potassium (e.g., 15-0-14). Additional applications may be required to encourage turf recovery from environmental stress or pest damage or to encourage rapid coverage for a newly sprigged or plugged lawn.

FEBRUARY - MAY

Mowing

Proper mowing practices are essential for maintaining a quality lawn. Mow the lawn at 3 inches as needed on low-maintenance lawns or 2½ inches on higher-maintenance lawns. Mowing at a lower height will encourage shallow rooting, which is less tolerant to drought and nematode pressure. Remove no more than ⅓ the height of the leaf blade with any mowing (e.g., for a lawn to be maintained at 3 inches in height, mow when the turf reaches 4 to 4½ inches). Rotary mowers are typically used to maintain home lawns. Over time, impact of the rotary blade with St. Augustinegrass will dull the mower blades. Mowing with dull blades will shred leaf blades, extend the recovery period of the grass, and lower the aesthetic quality of the lawn. Use only a sharp, balanced mower blade and return clippings on the lawn unless the amount is excessive (e.g., clumping occurs). If clippings are excessive, allow them to dry in the sun and then scatter them by removing, blowing, or raking.

Fertilization

Two weeks following spring regrowth (approximately March in north Florida, February in south Florida), apply a complete fertilizer such as 16-4-8 at the rate of 1 pound nitrogen per 1000 square feet (e.g., 6.25 pounds 16-4-8 per 1000 square feet). The numbers refer to percent nitrogen, phosphorus (P₂O₅), and potassium (K₂O), respectively, in the bag. A complete fertilizer contains all three major nutrients. For example, a 50-pound bag of 16-4-8 contains 16% nitrogen or 8 pounds total nitrogen. For a 1-pound nitrogen per 1000 square foot rate, this bag will cover 8000 square feet. For higher-maintained lawns, apply 1 pound nitrogen per 1000 square feet again in May. On high pH (>7.0) soils or where high pH water is applied, yellow appearance may be an indication of iron or

manganese deficiency. For iron deficiency, spray ferrous sulfate (2 ounces in 3 to 5 gallons of water per 1000 square feet) or a chelated iron source (refer to the label for rates), to temporarily enhance color. Iron applications every 6 weeks will help maintain green color and, unlike nitrogen, will not promote excessive topgrowth. On high pH soils (>7.0) or where high pH (>7.0) water is applied, manganese deficiency may also become evident. Lower the soil pH by applying 15 pounds elemental sulfur per 1000 square feet prior to grass establishment. Once the grass is established, up to 5 pounds of elemental sulfur may be added per 1000 square feet, if it is immediately irrigated in to prevent burn. Using ammonium nitrate or sulfate as a fertilizer source will also help to temporarily reduce soil pH. Apply manganese as a fertilizer with micronutrients or as straight manganese sulfate (MnSO₄) bimonthly at 0.41 pound per 1000 square feet (18 pounds per acre) to relieve deficiency symptoms if present. Submit a soil sample yearly to your local county Cooperative Extension Service office to determine the soil pH, nutrient levels present, and if any deficiencies exist.

Irrigation

Normally, fall through spring is the driest period of the year. Therefore, irrigation is required to replace water lost via evapotranspiration. For water conservation, irrigate to prevent drought stress on an as-needed basis. Irrigate when the turf begins to wilt, turns blue-gray in color, and/or recovery from foot or tire tracks is slow. Apply enough water to rewet the soil rootzone and then wait until the turf shows signs of drought (e.g., wilting) again before the next irrigation (usually every 7 to 14 days in winter, 3 to 4 days in April-May, depending on soil type and maintenance practices). For most Florida soils, no more than ¾ inch of water is necessary for each irrigation period to rewet the top 8 to 12 inches of the root zone. To determine the amount of water being applied, place several coffee cans around your irrigation system. Turn on the system for a specific time period. Measure the depth of water in each can, and take an average. The time required to achieve an average of ¾ inch depth of water is the time period one should use for each irrigation period. The length of the irrigation period to apply this ¾ inch can stay constant year round; only the *frequency* between irrigations should change. Therefore, irrigation programs set by automatic timers do not need to operate on a daily schedule. They need only to operate after the turf begins to show signs of drought and then be programmed to apply an average of ¾

inch of water. Overwatering encourages nutrient leaching, increased pest problems, shallow rooting, and, of course, water waste. For further information refer to the chapter on "How to Calibrate Your Sprinkler System" in this publication.

Weed Control

The best approach to weed control is a healthy, vigorous turf. Proper mowing height, fertilization, and watering must be followed to encourage a competitive lawn grass. If a herbicide is needed, apply preemergence herbicides (i.e., pendimethalin, benefin, bensulide, atrazine, or others) to control crabgrass if it was present in previous years. Timing is critical for successful control. A general rule of thumb for application is Feb. 1 in south Florida, Feb. 15 in central Florida, and March 1 in north Florida. *Note: Preemergence herbicides will not control weeds which are actively growing.* Apply postemergence herbicides (e.g., atrazine) in May as needed for control of summer annual and perennial broadleaf weeds such as knotweed, spurge, lespedeza, etc. To control emerged summer annual grass weeds such as crabgrass and goosegrass, the herbicide asulam may be used. Do not apply these materials if the turf is under moisture stress or if air temperatures exceed 85°F. Check with your local County Cooperative Extension Office for positive weed identification and latest recommendations.

Insect Control

Chinch bugs are foliar feeding insects which suck plant juices through a needle-like beak, resulting in yellowish to brownish patches in turf. Injured areas are usually first noticed, as the weather begins to warm, along sidewalks adjacent to buildings and in other water stressed areas where the grass is in full sun. Check for chinch bugs by removing the ends of a coffee can, inserting one end through the soil at the margin of suspected damaged areas and fill with water. Chinch bugs will float to the water surface within 5 minutes. In areas where chinch bugs are a serious problem, a single thorough insecticide treatment may offer only temporary control (1½ to 2 months). Therefore, repeat applications may be required. Mole crickets damage turfgrass areas primarily by the tunnels or soft mounds they leave while searching for food. Additional damage may result from small animals digging through the soil profile in search of the mole crickets as food. Check for mole crickets by: 1) examining an area for the tunnels, or 2) applying 2 gallons of water with 1½

ounces of detergent soap per 2 square feet in suspected damaged areas. Mole crickets will surface in several minutes.

Check with your local county Cooperative Extension Service office for positive mole cricket identification and latest control recommendations. When applying any pesticide, read and follow all label instructions.

Nematode Control

Population peaks of nematodes typically occur in late April to early May and again in late August to early September. Damage symptoms include thin stand density, less vigorous growth, a weakened root system, slow recovery following rain or irrigation application, and certain weed invasion (e.g., prostrate spurge and Florida pusley). Soil nematode levels can only be positively identified through laboratory procedures. Inquire with your local county Cooperative Extension Service office on proper sample submission to the University of Florida Nematode Assay Laboratory. Encourage deep turfgrass rooting by raising the mowing height, irrigating less frequently but deeper, and providing ample soil potassium and phosphorus.

Thatch Removal

Thatch is the layer of undecomposed leaf blades, stolons, roots and crowns intermingled with soil. Contrary to popular belief, return of mowing clippings do not cause thatch. Excessive thatch develops when the grass is overfertilized, overwatered, and improperly mowed. If thatch layer exceeds 1 inch, remove by vertical mowing in early-spring (e.g., April) south of Orlando and late-spring (e.g., May) north of Orlando. A 3-inch spacing between the dethatching blades is best. *Caution: Vertical mowing may result in damaged turf which will require a period of recuperation. Do not attempt vertical mowing unless the grass is actively growing (April to May). A professional landscaping maintenance service or the local county Cooperative Extension Service office should be consulted before attempting lawn renovation.* Remove the debris by raking, sweeping or vacuuming and follow with a conventional mowing to improve turf appearance. Immediately irrigate to prevent rootzone dehydration. One week following vertical mowing apply 1 pound soluble nitrogen per 1000 square feet (e.g., 3 pounds ammonium nitrate or 5 pounds ammonium sulfate per 1000 square feet) to encourage recovery. This material must be watered in immediately following

application to prevent plant burn. Periodic topdressing (adding a uniform layer of soil on top of the grass) with $\frac{1}{8}$ to $\frac{1}{4}$ inch of soil similar to that underlying the turf is the best method to alleviate thatch accumulation; however, the physical labor required limits its practicality for most homeowners. If this is performed, use soil free of weed seeds and nematodes. Do not exceed recommended topdressing rates as this encourages brown patch disease.

Renovation

Replant large bare areas in April-May by broadcasting sprigs (1 bushel per 1000 square feet), planting 2-inch plugs every 12 inches, or by sodding. Keep these areas continuously moist with light, frequent irrigations several times daily until runners develop or when sod is well rooted. Over time, gradually reduce irrigation frequency, but increase irrigation duration to apply $\frac{3}{4}$ inch in order to wet the top 8 to 12 inches of the rootzone. Refer to the chapter "Establishing Your Florida Lawn".

JUNE - AUGUST

Mowing

Mow at 3 inches (as high as possible with a home rotary mower) on low-maintenance lawns or $2\frac{1}{2}$ inches on higher-maintained ones. Use only a sharp, balanced mower blade and return clippings on the lawn unless the amount is excessive and clumping occurs. If clippings are excessive, allow them to dry in the sun and scatter them by removing, blowing, or raking.

Fertilization

Fertilize with 1 pound of nitrogen per 1000 square feet (e.g., 1 pound nitrogen = 6.5 pounds 15-0-14 or 6.25 pounds 16-4-8 per 1000 square feet) in early July for higher-maintained areas. A slow release nitrogen source (e.g., IBDU, milorganite, SCU, urea formaldehyde, poly-coating sources) will extend nitrogen response and discourage rapid flushes of growth or nitrogen loss due to excessive rainfall. Using an iron source during summer is an alternate recommendation to nitrogen to provide desirable dark color without undesirable flush of growth. Using a quick-release nitrogen or water soluble nitrogen source at this time may encourage chinch bugs or disease development. Fertilizers without phosphorus (e.g., 15-0-14, 8-0-24) are acceptable during this time if soil tests indicate moderate to high levels of

soil phosphorus. If excessive yellowing occurs, supplemental iron applications may be required.

Refer to the fertilization for "February - May" section for information on iron application. Check for manganese deficiency as mentioned previously.

Irrigation

Frequent, intense rainfall normally occurs during this period. Therefore, irrigate to prevent drought stress only on an as-needed basis. Apply water ($\frac{3}{4}$ inch) as previously noted, and then wait until the turf shows signs of wilting (blue-gray color or footprinting occurs) before irrigating again.

Weed Control

The best method to control weeds is through a healthy, vigorous turf. Applying any postemergence herbicides during summer may result in objectionable turf injury.

St. Augustinegrass is damaged by certain herbicides (e.g., MSMA, DSMA). Follow label directions and use with caution. Do not apply herbicides unless grass and weeds are actively growing and not suffering from drought stress and air temperatures are below 85°F. See the section on weed control for specific recommendations.

Insect Control

Check for chinch bugs by the previously described method. If the turf turns yellow in spots or responds poorly to watering and fertilization, suspect root damage from white grubs. Check for white grubs (root feeders) by cutting three sides of a 1-foot square piece of sod about 2 inches deep with a spade/shovel at the edge of one of the yellow areas in the lawn. Lay back the sod and check for white C-shaped grubs. Apply an insecticide if two or three grubs are found per square foot. Check for additional insects such as armyworms, sod webworms and mole crickets by mixing 1 to 2 ounces of dishwashing soap in a 2-gallon sprinkling can full of water. Drench a 2 square foot area with this solution. If insects are present, they will surface in several minutes. (Refer to your local County Cooperative Extension Office for the latest control recommendations.) Read and follow all pesticide labels.

Disease Control

Important disease symptoms are usually expressed as circular brown patches one to several feet in diameter or by spots (lesions) yellow, brown or purplish in color on individual leaves (gray leaf spot disease). Many times these result from overirrigation or excessive nitrogen fertilization. Therefore, reduce the amounts of these applied. If damage is extensive, a fungicide application may be necessary. Refer to your local county Cooperative Extension Service office for disease sample submission and the latest fungicide recommendations.

SEPTEMBER - NOVEMBER

Mowing

Continue mowing at the specific height and frequency for the desired maintenance level as previously described.

Fertilization

Apply 1 pound of slow release nitrogen per 1000 square feet as a complete fertilizer (e.g., 6.25 pounds 16-4-8 per 1000 square feet) in September for north Florida or in October for south Florida and then discontinue nitrogen application. One month before expected first frost, 1 pound of potassium per 1000 square feet using 1.6 pounds muriate of potash (0-0-60) or 2 pounds of potassium sulfate (0-0-50) may be applied to increase winter hardiness of the grass. Do not apply potassium during hot periods or if the lawn is under moisture stress. Irrigate after application to prevent burn.

Irrigation

Continue irrigating (as needed) to prevent drought stress. Apply amounts previously noted ($\frac{3}{4}$ inch) when turf turns blue-gray in color and/or footprinting occurs.

Irrigate following onset of frost (browning of foliage) if needed to prevent winter dehydration in cooler portions of Florida.

Insect Control

Check for white grubs, armyworms, sod webworms and mole crickets as previously discussed. Contact your local county Cooperative Extension Service office for recommended control measures.

Disease Control

Do not overirrigate, as this encourages disease growth (especially in heavy or poorly drained soils). If disease is suspected, consult your local county Cooperative Extension Service office concerning identification and control recommendations.

DECEMBER - FEBRUARY

Mowing

Remove lawn debris (rocks, sticks, and leaves) or any unsightly tall weeds or plants. Mow as required in south Florida.

Fertilization

Do not fertilize at this time in north or central Florida. A light fertilization may be desired in south Florida in November or December. If so, apply $\frac{1}{2}$ pound nitrogen per 1000 square feet (e.g., $\frac{1}{2}$ pound nitrogen = 3.3 pounds 15-0-4 or 3.1 pounds 16-4-8 per 1000 square feet). Submit soil samples for analysis at least every other year to determine nutrient requirements (contact your local county Cooperative Extension Service office for details). Apply lime or sulfur if suggested, based on soil test, to raise or reduce soil pH, respectively.

Irrigation

In south Florida, irrigate as described previously to avoid moisture stress.

Weed Control

Apply broadleaf herbicides (e.g., atrazine) as necessary for control of chickweed, henbit, clover, pennywort, dandelion or wild garlic/onion. Selected herbicides (e.g., atrazine or simazine) can be applied for control of annual bluegrass (*Poa annua*) and several winter annual broadleaf weeds. A repeat application 3 to 4 weeks after the first may be necessary to achieve satisfactory control. Follow label directions for rates and use with caution.

Miscellaneous

Make plans and arrangements for lawn renovation to be made in spring, if needed. Service your lawn mower and sharpen the blade. Check irrigation system for leaking lines, joints, or damaged heads.

Table 1. Suggested yearly maintenance schedule for St. Augustinegrass.

		Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Fertilization													
North Florida*	low maintenance	--	--	C ¹	--	--	Fe ²	--	--	C	--	--	--
	high maintenance	--	--	C	--	N ³	Fe	N	--	C	--	--	--
South Florida	low maintenance	--	C	--	--	N ³	Fe	--	--	--	C	--	--
	high maintenance	--	C	--	--	N ³	Fe	N	--	C	--	N	
Weed Control	North Florida	--	--	PE ⁴	--	PO ⁵	--	--	PO	--	--	--	B ⁶
	South Florida	--	PE	--	--	PO	--	--	PO	--	--	--	B
Mowing (3-inch height)	Frequency is approximately every 5-14 days for a height of 2½-3½ inches, depending on season and management practices. Best mower: rotary. Remove no more than ¼ of the leaf blade height per mowing. Leave clippings unless clumping occurs.												
Irrigation (¾ inch water per irrigation)	Irrigate when leaves show signs of drought: blue-gray color, slow footprinting recovery, folded leaf blades. A simple irrigation schedule is to apply ¾ inches of water 2 to 3 times per week in the summer and once every 7-14 days in the winter. Reduce this frequency following rain. Avoid light, frequent (daily) watering and overwatering (point of runoff). Best time of day to water is in early morning.												
Disease Control	Primary diseases are brown patch and gray-leaf spot. Brown patch tends to be more troublesome in spring and fall when the soil remains continuously wet and the turf is overfertilized. Gray-leaf spot tends to occur in the summer when the turf is overfertilized and overwatered. Continually check for symptoms and submit suspected disease samples to your local county agent's office.												
Insect Control	Greatest damage usually results from chinch bugs and mole crickets. Chinch bug damage is greatest during hot, dry periods when the grass is not actively growing. Check for these by inserting a coffee can into the soil and filling with water. If present, chinch bugs will float to the surface. Check for mole crickets by observing tunnels or by applying 1-2 oz of soap per gallon of water over suspected damaged areas. Mole crickets, if present, will surface within 5 minutes.												
Vertical mowing/dethatching	Using a 3-inch blade spacing, begin in May in north Florida and April in south Florida. Discontinue by August. When completed, remove the debris, mow the lawn, apply 1 lb of nitrogen per 1000 sq ft and irrigate to prevent drying out and fertilizer burn.												
* The arbitrary dividing line between north and south Florida is a straight east-west line from coast to coast through Orlando.													
¹ Apply a complete (C) fertilizer source (e.g., 16-4-8) at a rate of 1 lb of nitrogen per 1000 sq ft (e.g., 6.2 lb 16-4-8 per 1000 sq ft).													
² Iron (Fe) may be supplied with ferrous sulfate (2 oz in 3-5 gal water per 1000 sq ft) or a chelated iron source.													
³ Apply the equivalent of 1 lb of nitrogen (N) per 1000 sq ft as a slow release form (e.g., IBDU, SCU, urea formaldehyde, milorganite, etc.) to help prevent succulent growth which is more susceptible to chinch bug damage.													
⁴ Use a preemergence herbicide (PE) such as atrazine, bensulide, oxadiazon, benefin, or pendimethalin for crabgrass, and goosegrass control. Plan to reapply herbicides approximately 2 months later for season-long control.													
⁵ Use postemergence broadleaf herbicides (PO) such as asulox for crabgrass control or one-half the label rate of 2,4-D, dicamba and/or mecoprop mixtures for broadleaf weed control. Note: Do not apply postemergence herbicides when air temperatures exceed 85°F or the grass is under any moisture stress. Objectionable turf injury may result.													
⁶ If Broadleaf (B) weeds are present, apply atrazine or one-half the label rate of 2,4-D, dicamba and/or mecoprop.													