ENH962

UF UNIVERSITY of FLORIDA
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Figuring out Fertilizer for the Home Lawn[1]

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Everyone likes the look of a nice, green lawn, but proper application of lawn fertilizers is critical. Here's why:

1. The health and vigor of your lawn depend upon applying the right amount of fertilizer at the appropriate times. Too little or too much fertilizer will cause problems for the growth, appearance, and health of your lawn.

2. Fertilizer improperly applied can harm the environment. Over-application or misapplication (Figure 1) can result in leaching of fertilizer through the soil into groundwater supplies. Fertilizer runoff may also get into surface water. Applying too little fertilizer may result in a lawn with minimal density of root and shoot systems, a condition that may allow for leaching or runoff to occur more easily.

This publication will help homeowners understand how to properly handle fertilizers and apply the correct amounts of fertilizer *every time*.

A number of different fertilizers are sold for home-lawn use, but a few basics apply to all of those fertilizers:

- The three numbers printed in very large numerals (Figure 1) on the bag represent the amounts of nitrogen (N), phosphorus (P as P2O5), and potassium (K as K2O) in the bag. Look for a fertilizer with low or zero P (2nd number) unless you have a soil test report that recommends adding phosphorus.

- Most home-lawn fertilizers contain “slow-release” nitrogen, which means that the nitrogen is available to the lawn over an extended time, rather than all at once. Many fertilizers that contain “slow-release” nitrogen provide fertilization for 60 days or longer, depending on environmental conditions.

- The potential for leaching or runoff of nutrients in fertilizer is directly related to the amount of water, either from irrigation or rainfall, applied after fertilization. Some irrigation is generally required to wash the fertilizer off the leaf blades, but too much water can wash the fertilizer past the root zone. Once the fertilizer is past the root zone, the fertilizer won't be absorbed by the plant's roots. Apply about a 1/4 inch of water to properly irrigate fertilizer. The use of fertilizers

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All chemicals should be used in accordance with directions on the manufacturer's label.

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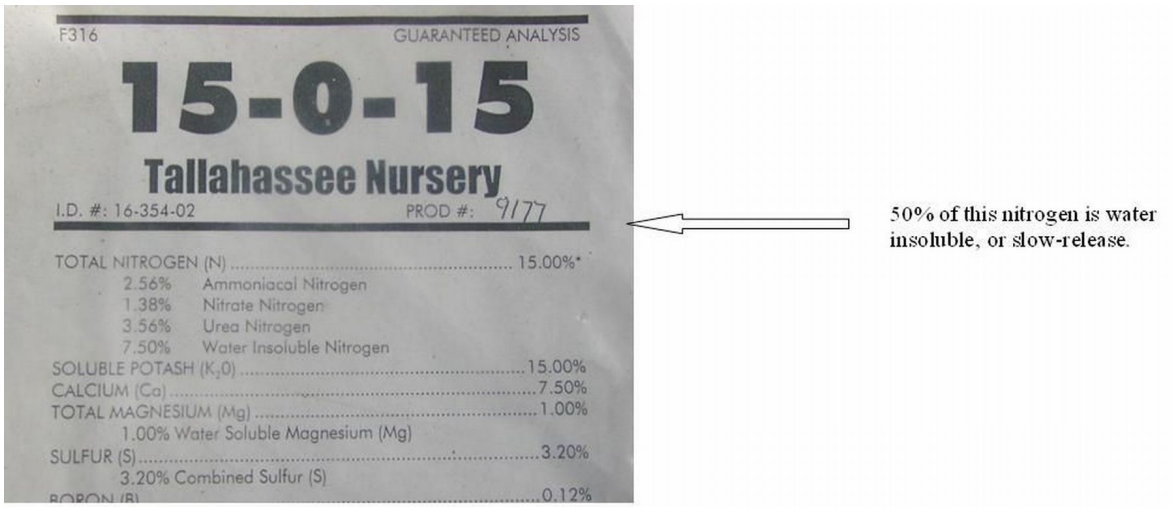

Figure 1. Example of a fertilizer label.

is not recommended if heavy rainfall is forecast within the next 24 hours.

- Always read and follow instructions and rates on the fertilizer bag, as well as the suggestions on this fact sheet, to keep your lawn healthy and prevent runoff or leaching of nutrients.
- Fertilizer needs differ according to grass species, location in the state, and desired level of lawn care. For more information, refer to Your Florida Lawn, a collection of EDIS fact sheets on residential lawns (http://yourfloridalawn.ifas.ufl.edu).
- Professional lawn-care service providers have access to a wide variety of products and application methods, as well as professional expertise. Therefore, they may apply fertilizer differently than is recommended for homeowners.

To determine how to apply the correct amount of fertilizer, follow these simple steps:

1. **Know the annual fertility needs for your grass species.** See Table 1a or 1b (below) for the range of recommended fertility rates in Florida or refer to Your Florida Lawn (http://yourfloridalawn.ifas.ufl.edu) for more information.
2. **Know the square footage of your lawn.** To determine this measurement, measure your property and calculate the total square footage of turfgrass. Do not include landscape plants in the area to be fertilized under a turfgrass regime. For this example, we will assume that your total area of grass covers approximately 1000 square feet.
3. **Know your fertilizer analysis.** Say you purchase a bag of 15-0-15 fertilizer. The three numbers mean that 15% of the bag is nitrogen; there is no phosphorous, and 15% is potassium. See Figure 1 for an example of a fertilizer label.
4. **Determine how much slow-release nitrogen is in the fertilizer product you are using.** Look at the label to see how much nitrogen (N) is slow-release in the fertilizer. For example, in Figure 1, 50% of the nitrogen is water insoluble (slow-release). If you are applying a fertilizer with 30% or more of the N in slow-release form, then no matter what kind of grass you have or where in the state you live, apply no more than 1 lb of nitrogen for every 1000 square feet of lawn each time you apply fertilizer. (See Table 1a for details, including frequency of fertilization.) However, if the fertilizer you are using has 15-30% slow-release N content, you may only apply up to a half pound of N per 1000 square feet with each application. (See Table 1b for details, including frequency of fertilization.) For all fertilizers containing slow-release N, do not exceed the application rate of 1 lb of nitrogen per 1000 square feet in any one application.

5. **Consult Table 1a if you are using a fertilizer with 30% or more slow-release N. Consult Table 1b if you are using a fertilizer with 15-30% slow-release content.** If you know the square footage of your lawn and your fertilizer analysis, by using the appropriate table, you can easily figure out how much fertilizer to apply. The numbers in these tables are based on application of 1 lb of fertilizer per 1000 square feet.

6. **Set your spreader.** Spreader models differ, and not all models will have the same setting for a particular brand of fertilizer. The safest way to not over-apply fertilizer is to set the spreader on the lowest setting and put half of the recommended amount of fertilizer from for your size lawn in the spreader. Apply the fertilizer to the specific area in a north/south direction. When you have covered this area, put the other half of the fertilizer in the spreader and go back and forth in an east/west direction until you run out of fertilizer.

A few cautionary notes for fertilizer application:

- If you spill fertilizer on the lawn or on the sidewalk or pavement, **even if it is just a few granules**, sweep it up as thoroughly as possible and put it back in the bag. Any particles left on paved surfaces may eventually find their way into a storm drain and from there into the nearest water body, resulting in non-point-source pollution.

- Irrigate your fertilizer with about a 1/4 inch of water. To determine how long to water to achieve this amount, place coffee or tuna cans throughout the lawn area and time how long it takes to fill them to a 1/4 inch. Do this prior to fertilizing so that you will know before you fertilize how long to run the irrigation system after you fertilize. A 1/4 inch of water will put the nutrients at root level, where they can be absorbed most efficiently.

- If you are fertilizing near any water bodies, leave an unfertilized strip of approximately 10 feet between the fertilized lawn grass and the water body. This unfertilized margin will ensure that no fertilizer granules get into the water body, protecting the water body from pollution by fertilizer runoff or leaching.

Table 1a. Recommended application rates for turfgrass fertilizers to Florida lawns: 30% or more slow-release nitrogen. In the table below, match the size of your lawn to the percentage of nitrogen (N) in your fertilizer to find the amount of fertilizer you need to apply. If you have a bahiagrass lawn, apply this amount of fertilizer once or twice a year no matter where you live in the state. For centipedegrass, apply about once a year in North Florida and once or twice a year in Central Florida and South Florida. For St. Augustinegrass or zoysiagrass, apply two or three times a year in North Florida and Central Florida and three or four times a year in South Florida. UF/IFAS recommends soil testing for phosphorus content before any P fertilizer is applied.

	6% N	10% N	12% N	15% N	16% N	23% N	27% N
1,000 ft^2	16.5 lbs	10 lbs	8.5 lbs	6.5 lbs	6 lbs	4.5 lbs	4 lbs
1,100 ft^2	18.5 lbs	11 lbs	9.5 lbs	7 lbs	7 lbs	5 lbs	4 lbs
1,200 ft^2	20 lbs	12 lbs	10.5 lbs	8 lbs	7.5 lbs	5 lbs	4.5 lbs
1,300 ft^2	22 lbs	13 lbs	11.5 lbs	8.5 lbs	8 lbs	5.5 lbs	5 lbs
1,400 ft^2	23.5 lbs	14 lbs	12.5 lbs	9 lbs	9 lbs	6 lbs	5 lbs
1,500 ft^2	25 lbs	15 lbs	13.5 lbs	10 lbs	9.5 lbs	6.5 lbs	5.5 lbs
2,000 ft^2	33.5 lbs	20 lbs	17 lbs	13 lbs	12 lbs	9 lbs	8 lbs
2,500 ft^2	41.5 lbs	25 lbs	21 lbs	16.5 lbs	15.5 lbs	11 lbs	9.5 lbs
3,000 ft^2	50 lbs	30 lbs	25.5 lbs	19.5 lbs	18 lbs	13 lbs	12 lbs
3,500 ft^2	58 lbs	35 lbs	30 lbs	23 lbs	21.5 lbs	15.5 lbs	13.5 lbs
4,000 ft^2	66 lbs	40 lbs	34 lbs	26 lbs	24 lbs	18 lbs	16 lbs
4,500 ft^2	74 lbs	45 lbs	38 lbs	29.5 lbs	27.5 lbs	20 lbs	17.5 lbs
5,000 ft^2	82 lbs	50 lbs	42.5 lbs	33 lbs	31 lbs	22 lbs	19 lbs
*These recommendations assume use of a properly calibrated spreader. See www.yourfloridalawn.ifas.ufl.edu for instructions on calibrating your spreader.							

Table 1b. Recommended application rates for turfgrass fertilizers to Florida lawns: 15–30% slow-release nitrogen. In the table below, match the size of your lawn to the percentage of nitrogen (N) in your fertilizer to find the correct amount of fertilizer to apply. If you have a bahiagrass lawn, apply this amount of fertilizer two to four times a year no matter where you live in Florida. For centipedegrass, apply twice a year in North Florida and two to four times a year in Central Florida and South Florida. For St. Augustinegrass or zoysiagrass, apply four to six times a year in North Florida and Central Florida and six to eight times a year in South Florida. UF/IFAS recommends soil testing for phosphorus content before any P fertilizer is applied.

	6% N	10% N	12% N	15% N	16% N	23% N	27% N
1,000 ft^2	8.25 lbs	5 lbs	4.25 lbs	3.25 lbs	3 lbs	2.25 lbs	2 lbs
1,100 ft^2	9.25 lbs	5.5 lbs	4.75 lbs	3.5 lbs	3.5 lbs	2.5 lbs	2 lbs
1,200 ft^2	10 lbs	6 lbs	5.25 lbs	4 lbs	3.75 lbs	2.5 lbs	2.25 lbs
1,300 ft^2	11 lbs	6.5 lbs	5.75 lbs	4.25 lbs	4 lbs	2.75 lbs	2.5 lbs
1,400 ft^2	11.75 lbs	7 lbs	6.25 lbs	4.5 lbs	4.5 lbs	3 lbs	2.5 lbs
1,500 ft^2	12.5 lbs	7.5 lbs	6.75 lbs	5 lbs	4.75 lbs	3.25 lbs	2.75 lbs
2,000 ft^2	16.75 lbs	10 lbs	8.5 lbs	6.5 lbs	6 lbs	4.5 lbs	4 lbs
2,500 ft^2	20.75 lbs	12.5 lbs	10.5 lbs	8.25 lbs	7.75 lbs	5.5 lbs	4.75 lbs
3,000 ft^2	25 lbs	15 lbs	12.75 lbs	9.75 lbs	9 lbs	6.5 lbs	6 lbs
3,500 ft^2	29 lbs	17.5 lbs	15 lbs	11.5 lbs	10.75 lbs	7.75 lbs	6.75 lbs
4,000 ft^2	33 lbs	20 lbs	17 lbs	13 lbs	12 lbs	9 lbs	8 lbs
4,500 ft^2	37 lbs	22.5 lbs	19 lbs	14.75 lbs	13.75 lbs	10 lbs	8.75 lbs
5,000 ft^2	41 lbs	25 lbs	21.25 lbs	16.5 lbs	15.5 lbs	11 lbs	9.5 lbs
*These recommendations assume use of a properly calibrated spreader. See www.yourfloridalawn.ifas.ufl.edu for instructions on calibrating your spreader.							