

SOIL TEST INFORMATION SHEET NO. T-610

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Athletic Fields, Fairways, Sod, Lawns, and Establishment

1. Suggested application rates for nitrogen (N), phosphorus (P), and potassium (K) containing products listed at top of LSU AgCenter soil tests for turfgrasses are yearly totals. The listed amount is to be applied over the course of a growing season. These are not suggestions for a “one-time” application. For example, a suggestion of “6.6 lbs. per 1000 ft² of urea” should be split into at least three separate applications, so as not to apply more than 1 lb. of N per 1000 ft² at any one fertilizing event. Urea is 46% N (46-0-0), so 6.6 lbs. of urea contains 3 lbs. of N total (6.6 lbs. × 46% N), well over the 1 lb. N per 1000 ft² single application maximum.
2. If values of P or K read low or very low, split the required amount into two or three applications, adding these nutrients in April, June, and August, similar to the suggestion above. For P and K, 20 and 40 ppm, respectively, are commonly considered sufficient to meet turfgrass P and K requirements for a full growing season (definitely, if clippings are being recycled by mulching and not bagged and moved off site). If a soil test indicates P and K are low, but their actual values are above 20 and 40 ppm, respectively, a plant response to added fertilizer may not be observed. This is not indefinite, however. The soil should be retested consistently (at least every other year) to ensure these levels are maintained.
3. Apply up to 1 lb. N per 1,000 ft² every four weeks until desired density is obtained, then apply N every five to six weeks (April-September) to keep desired growth. Exception to above on carpetgrass or centipedegrass: these two grasses need only a 0.5 lb. N per 1000 ft² applied no more than three times per year. Do not try to darken these two naturally light grasses by keeping them well fed. This leads to thatch, decline, and pest problems. Also, keep in mind that overfeeding any of the lawn grasses can result in thatch accumulation, decline, and pest problems.
4. If slow-release materials are used, apply at longer time intervals since they feed longer.
5. If lime is required and soil magnesium (Mg) levels are low, choose dolomitic lime.
6. If soil tests indicate low Mg and pH is medium or high, apply K-Mg sulfate (e.g., K-Mag). A typical application of 9 lbs. per 1,000 ft² supplies approximately 2 lbs. K₂O and 1.8 lbs. Mg. Alternatively, if K is already high, apply Mg sulfate (epsom salt) at 4–5 lbs. per 1,000 ft². Make sure to water-in with irrigation or rainfall to avoid foliar salt burn.
7. Turf-specific blends with a higher nitrogen, lower (or no) phosphorus, and moderate potassium ratio (e.g., 4-1-2 or 3-1-2) can be used to supply the specified nutrient.
8. If **No P** is recommended, DO NOT apply phosphorus. This is especially true for centipede and carpetgrass turf. Select a product like urea (46-0-0), which contains no P or K.
9. Contact your county agent for additional information and help in your fertilization program. The agent also receives a copy of this report for the parish office files.

Understanding Fertilizer

Fertilizers come in different strengths and blends. The three numbers on the bag represent the percentage by weight of the primary nutrients. The first number is always the percentage of total nitrogen (N). The second is the percentage of available phosphorus, expressed as phosphate (P₂O₅) equivalent—so it is not pure elemental phosphorus. The third is the percentage of soluble potassium, expressed as potash (K₂O) equivalent, not pure elemental potassium.

Blended fertilizers contain more than one nutrient, such as 0-20-20 or 8-24-24. A complete fertilizer is one that has all three nutrients, like 8-24-24. Muriate of potash is 0-0-60, while concentrated super phosphate is 0-42-0. Nitrogen

sources include ammonium nitrate (33-0-0), ammonium sulfate (20-0-0), or urea (46-0-0). Other fertilizer materials are potassium sulfate (0-0-52), DAP (18-46-0), IBDU (31-0-0), SCU (32-0-0), UF (38-0-0), bone meal (2-20-0), or cottonseed meal (6-3-2). About seven pounds of cow manure can substitute for one pound of 8-8-8.

Dividing the percent into 100 gives the pounds of the fertilizer needed to supply one pound of that nutrient. Take 8-8-8 for example (100 divided by 8 = 12.5). Therefore, 12.5 pounds of 8-8-8 provides a pound each of N, P_2O_5 , and K_2O .

The ratio of a fertilizer refers to the comparison of these numbers to each other. Different crops and soils may need different ratios. For example, 8-8-8 is a 1-1-1 ratio while a 5-10-15 fertilizer is a 1-2-3 ratio, showing a generally low N, moderate P, and higher K.

Application rates given in pounds per acre (A) can be converted to pounds per 1,000 ft² by dividing by 44. Example: 264 lbs. / A = 264 / 44 or 6 lbs. per 1000 ft². Likewise, rates given in per 1,000 ft² can be multiplied by 44 to yield per acre.