

Soil Testing & Interpretation Guide

How to Take Samples, Where to Send Them, and Exactly How to Read & Act on the Results
Professional Methods Adapted for Cool-Season Home Lawns

Why Soil Testing Matters

On golf courses we test soil multiple times per year because assumptions cost money and turf health. At home, a good soil test every 2–3 years prevents over-fertilizing (especially phosphorus, which many established lawns already have in excess), identifies pH problems that lock up nutrients, and gives you a real baseline instead of guessing. Most 'weed and feed' programs waste product and can harm long-term soil biology.

How to Take a Proper Soil Sample

- Use a clean soil probe, trowel or spade. Avoid galvanized tools if possible for micronutrient accuracy.
- Take 10–15 random cores from the main lawn areas (avoid obvious problem spots or edges).
- Core depth: 3–4 inches for established lawns (2 inches for new seeding areas).
- Mix all cores thoroughly in a clean bucket. Remove thatch, rocks and roots.
- Air-dry the sample (no heat). Fill the lab bag with about 1–2 cups of soil.
- Label clearly and note any recent fertilizer or lime applications.

Where to Send It

Start with your state's extension office. Many land-grant universities run a soil lab or can point you to one; search "[your state] extension soil test." Their recommendations are written for your local soils and climate.

Private labs test samples mailed from anywhere. Long-standing ones popular with turf managers include Midwest Laboratories (Omaha, NE), Logan Labs (Ohio) and A&L Great Lakes Laboratories (Fort Wayne, IN). Ask for a turf or lawn test and check current prices on the lab's site.

How to Read Your Soil Test Report

pH (most important for nutrient availability). Ideal for cool-season grasses: 6.0–7.0. Below 6.0, many nutrients become unavailable and aluminum toxicity can occur. Above 7.2, iron and manganese lock up (common on high-pH and limestone-based soils). Lime recommendations are usually given in tons/acre or lbs/1,000 sq ft. Use pelletized lime for easier spreading.

Phosphorus (P) and Potassium (K). Many established lawns test high or very high in P after years of 'weed and feed' products. If your test shows high P, stop adding more: it can contribute to algae in waterways (some states restrict phosphorus on lawns). K is often low in sandy or heavily leached soils; fall applications help winter hardiness and disease resistance.

Organic Matter & Cation Exchange Capacity (CEC). Good target: 3–5%+ organic matter in established lawns. Higher CEC means the soil holds nutrients better. Compost topdressing is the best long-term way to build both, on heavy clay or on sand.

Action Plan After Testing

- **pH low (<6.0):** apply the recommended lime in fall or early spring. Split applications if the rate is high.
- **High P:** switch to phosphorus-free fertilizers (the middle number on the bag is 0).
- **Low K:** add potash in fall (0-0-50 or similar) at the soil-test rate.
- **Low organic matter / compaction:** core aerate + topdress with compost (1/4"–1/2").
- **General fertility:** use the spoon-feeding approach: small, frequent nitrogen applications timed to growth rather than one big spring or fall dump.

Pro Tip: On golf courses we rarely apply the 'recommended' amount all at once. We split it and monitor the response. Home lawns respond the same way: less is often more for long-term turf health and reduced disease.

