

So what do those three fertilizer numbers mean? They represent three nutrients essential to strong, healthy turfgrass: nitrogen, phosphorus and potassium or potash. In a fertilizer analysis, the three nutrients are always listed in the same order. An easy way to remember what those nutrients do is “up, down, all around.”

- **NITROGEN (N) - UP** promotes dark green color and increases leaf and stem growth.
- **PHOSPHORUS (P) - DOWN** stimulates early root formation and growth and prepares grass for dormancy and winter hardiness.
- **POTASSIUM OR POTASH (K) - ALL AROUND** provides overall health to grass, increasing resistance to disease and drought stress.

## SIGNS OF NITROGEN DEFICIENCY

Nitrogen is represented by the first number. Telltale signs of nitrogen deficiency are:

- Overall reduction in plant growth
- Loss of green color, yellowish green color starting at the leaf tips
- Thinning of plants, overall plant density and coverage decreases

## **There are two types of nitrogen fertilizers: fast release and slow release**

- Fast release is typically found in agricultural fertilizers
  - Works for 7-12 days
  - It's fast acting—almost too fast for turfgrass because nutrients often pass on through soil before roots can absorb them
- Slow release is optimal for turfgrass
  - Works for 3-12 weeks
  - Nutrients stay in root zone long enough for plant to absorb them, so less is wasted

## SIGNS OF PHOSPHORUS DEFICIENCY

Phosphorus, the #2 number, is a key nutrient in seed starter fertilizers because it stimulates root growth. Telltale signs of phosphorus deficiency are:

- Dark green color on lower leaves only
- Purplish color on leaf edges
- Spindly, weak growth
- Little to no root system formed

### **2 Big Questions to Ask When Choosing Fertilizer:**

1. What are the results of your soil analysis?
2. What, if any, problems have you experienced in the past with this lawn (yellowing or failure to thrive)?

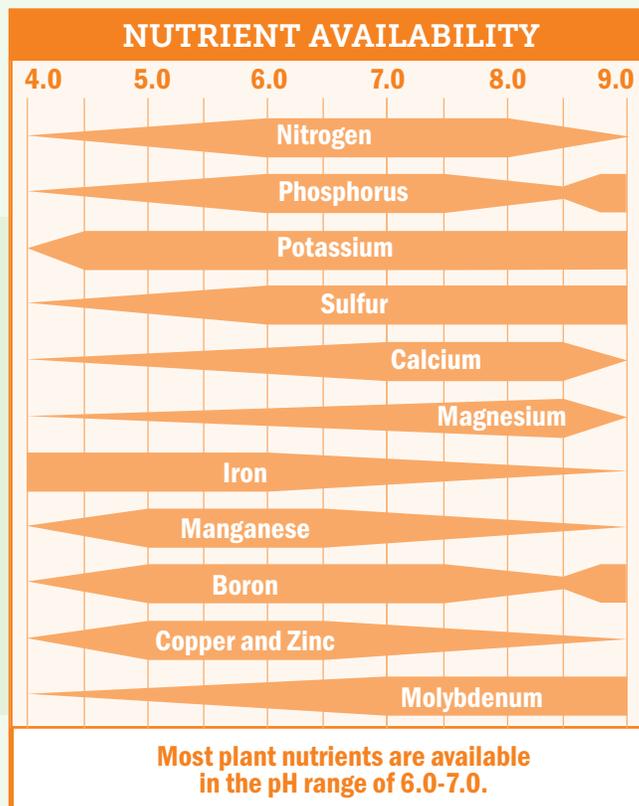
## SIGNS OF POTASSIUM DEFICIENCY

Potassium, the #3 number, contributes to overall health and enables the plant to tolerate heat, drought, cold and wear. It also aids in disease resistance. Potassium deficiency isn't always easy to detect:

- In some cases, wilting or drooping plants
- Yellowing and discoloration may occur
- Overall reduction of plant vigor

## IDEAL PH FOR TURFGRASS IS 6.5 TO 6.8

Ideal pH means plants have the maximum ability to use the nutrients from soil. Otherwise, it's as if the nutrients are locked up and unavailable for the plants, so the plants can never reach their full potential. Fortunately, there are ways to correct pH balance. Lime raises soil pH. Granulated sulfur lowers soil pH.



**Test, don't guess** – There's simply no substitute for a soil test. Soil testing identifies what the soil needs and doesn't need, such as more lime or less potassium. It offers clues as to which seeds and fertilizer will give customers the best results. It only takes minutes, but the benefits last all season long.