

## Fall Fertilization for Cool Season Turf

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Fall fertilization is critical for vigorous turf year-round. From late summer until fall dormancy, turf plants shift to an active vegetative growth phase when root development is maximized, and carbohydrates are produced in excess and stored for the next season. Turf vigor in the following spring, and the plant's ability to recover from stress the following summer is dependent, in large part, on the condition of the plant at the end of the fall. Therefore, late season fertilization is one of the most important turf management practices.

### *Fall nutrition approach*

The objectives of fall fertilization are: 1) to reestablish turf density and quality; 2) maximize color retention late into the season; 3) help the turf plant recover from summer stress damage; 4) maximize root growth, carbohydrate production and storage; 5) assimilate a balanced diet in preparation for the next growing season. BioPro products are excellent for fall fertilization because of their balanced nutrient blends, their high grade organics which provide a sustained release of nitrogen and energy for soil microbial activity, their micronutrients, and their natural humates which increase nutrient uptake.

### **Nutrient Monitoring Program**

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The following program should be used as a guide. Monitoring nutrient levels in leaf tissue and soils is critical for designing the most efficient nutrient program. BioPro recommends the use of a diagnostic service that provides soil, water, and NIRS (Near Infrared Reflectance Spectroscopy) tissue analysis. With diagnostic results, BioPro nutrient programs may be modified to correct imbalances and prevent future problems.

### **Application Recommendations**

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#### **September 1**

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|----------------------------|--|
| 1) Multi-Purpose (6-0-0)   | 3 oz.                                  |
| 2) Enviro K (0-0-30)       | 4 oz.                                  |
| 3) Greens Plus (14-4-10)** | 8.5-13 oz.<br>(0.1-0.15 lb. N/1000sf)  |
| 4) Organic Granular        | 4 - 8 lb.<br>(0.5 lb. N/1,000 sq. ft.) |

#### **September 15**

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|---|----------------|
| 1) Multi-Purpose (6-0-0) <i>or</i><br>Bio CN (24-0-0) | 3 oz.<br>3 oz. |
| 2) Calcium Plus (8-0-0)                               | 3 oz.          |
| 3) Iron Plus (15-0-0)                                 | 3 oz.          |
| 4) CytoGro  | 0.4 oz.        |
| 5) H3O  | 2 oz.          |

#### **October 1**

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|--------------------------|---------------------------------------|
| 1) Multi-Purpose (6-0-0) | 3 oz.                                 |
| 2) Enviro K (0-0-30)     | 4 oz.                                 |
| 3) Iron Plus (15-0-0)    | 6 oz.                                 |
| 4) Greens Plus (14-4-10) | 8.5-13 oz.<br>(0.1-0.15 lb. N/1000sf) |
| 5) Organic Granular      | 4 - 8 lb.<br>(0.5 lb. N/1000sf)       |

#### **October 15**

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- |                          |         |
|--------------------------|---------|
| 1) Multi-Purpose (6-0-0) | 3 oz.   |
| 2) Iron Plus             | 3 oz.   |
| 3) Enviro K (0-0-30)     | 4 oz.   |
| 4) CytoGro               | 0.4 oz. |
| 5) H3O                   | 2 oz.   |

### **Additional Applications**

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Repeat the 1st application as needed.

\*\* Substitute 9-14 oz. Greens Plus (12-0-12) when phosphorus is not desired.

**Mixing:** Fill spray tank with ½ the necessary water; add *Multi-Purpose* or *Bio CN* first, then additional products one at a time; if *Calcium Plus* is in the mix add it last; add remaining water last.

**Note:** Syringe lightly after application of liquid products

## **BioPro Products**

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**Bio CN (24-0-0)** is a higher nitrogen, compost-derived soil conditioner containing humic acids and other microbially produced organic compounds. The additional nitrogen in *Bio CN* stimulates faster decomposition of organic material by improving the Carbon to Nitrogen ratio.

**Calcium Plus (8-0-0-10)** is a chloride free, readily available calcium source. Calcium is critical for vigorous new growth and for establishing stress tolerance for the next season.

**CytoGro (Liquid Root Biostimulant)** is an EPA registered hormone biostimulant that improves turf tolerance to stress resulting from disease, insect damage, drought, and soil temperature extremes by augmenting cytokinins and auxins, the turf's natural growth hormones.

**Enviro K (0-0-30)** provides potassium from potassium carbonate, a high quality, less caustic, chlorine-free source that is retained in the root zone longer for more uniform and consistent uptake by plants. It also contains organic acids from leonardite, which enhances turf performance and improves soil quality. Potassium's role in stress tolerance and recovery is well known.

**Greens Plus 14-4-10 & 12-0-12 (Liquid NPK Nutrient Blend)** are balanced nutrient blend with nitrogen, phosphorous, and potassium in the same ratio as they are generally found in plant tissue. Nitrogen is supplied as a polymethylene urea blend to provide uniform turf growth and color. This product contains 8.85% controlled release nitrogen, and organic acids from leonardite, which may enhance nutrient uptake.

**H3O (Liquid Soil Moisture Management Product)** employs a revolutionary new chemistry formulated to manage root zone moisture, making efficient use of water and protecting the turf from the harmful effects of drought stress, thus reducing disease pressure and root shrinkage. It attracts and holds free water molecules from the air within the soil, and efficiently transfers them to the plant root.

**Iron Plus (15-0-0-6)** is a particularly effective Fe source. Humic acid is known to be an excellent organic chelator of Fe increasing its availability for plant uptake and mobility within plant tissue.

**Multi-Purpose 6-0-0 (Liquid Organic Soil Conditioner)** is a unique mixture of organic acids and biostimulants derived from a biological composting and extraction process. It is designed to increase nutrient availability to the plant, stimulate soil microbial activity, increase root mass, and improve overall turf quality.