

Fall Fertilization for Warm Season Turf

Fall fertilization is critical for vigorous turf year-round. From late summer until fall dormancy, turf plants shift to an active vegetative growth phase where root development is maximized, and carbohydrates are produced in excess for storage for the next season. Turf vigor following winter dormancy and during transition 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 to: 1) re-establish turf density and quality; 2) maximize color retention late into the season; 3) maximize root growth, carbohydrate production and storage; 4) 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 organic base which provides a sustained release of nitrogen and energy for soil microbial activity, their micronutrients, and their natural humates which increase nutrient uptake.

Nutrient Monitoring Program

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

September 1

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| 1) Multi-Purpose (6-0-0) <i>or</i> | 3 oz. |
| Bio CN (24-0-0) | 2 oz. |
| 2) Enviro K (0-0-30) | 3 oz. |
| 3) Iron Plus (15-0-0) | 3 oz. |
| 4) Organic Granular
(0.5 lb. N/1000sf) | 4 - 8 lb. |

September 15

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|--------------------------|--------|
| 1) Multi-Purpose (6-0-0) | 3 oz. |
| 2) Calcium Plus (8-0-0) | 3 oz. |
| 3) Turf Starter (8-16-5) | 15 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) | 3 oz. |
| 3) Iron Plus (15-0-0) | 3 oz. |

October 15

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|----------------------------|---------------------------------------|
| 1) Multi-Purpose (6-0-0) | 3 oz. |
| 2) Greens Plus (14-4-10)** | 8.5-13 oz (0.1-
0.15 lb. N/1000sf) |
| 3) CytoGro | 0.4 oz |

November 1

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| 1) Organic Granular
(0.5 lb. N/1000sf) | 4 - 8 lb. |
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Additional Applications

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.

BioPro Products

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) 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) 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.