



*All Natural
Land Care Supplies*

NATURE'S TURF 8-1-9 (Greens Grade)

Nature's Turf 8-1-9 Greens Grade is a fine granular, designer fertilizer made specifically for golf course greens and tees. The objective of Nature's Turf 8-1-9 is to provide nutrients to turf plants in the most efficient manner possible, and the best way to accomplish that is to enliven and enrich the biological activity in the soil. More and more researchers, scientists, and superintendents are beginning to recognize the awesome value of a biologically active soil. Soil organisms are responsible for so many functions that directly benefit turf. Almost all of the nutrients utilized by plants—especially those obscure but essential elements that are not normally added to conventional fertilizer—are made available to plants by soil organisms. One of the most important and essential nutrients for all plants is carbon dioxide, which would not be available in ample quantities if it weren't for the work of soil organisms. All the proteins and carbohydrates manufactured by photosynthesis are built upon a base of carbon supplied by carbon dioxide. Saprophytic organisms in the soil produce carbon dioxide as they consume organic residues.

Many soil organisms are responsible, both directly and indirectly, for suppressing a large number of turfgrass diseases, not to mention phytopathogenic nematodes and some herbivorous insects. Healthy populations of these beneficial organisms depend on a constant supply of organic residues. When these residues are depleted, the number of beneficial organisms decreases and plants become more vulnerable to disease. Maintaining resources for soil organisms is always in the best interest of the superintendent. Other benefits of a biologically active soil include soil aggregation, thatch reduction, more efficient release of available plant nutrients, improved soil atmospheric respiration, systemic acquired disease resistance, antioxidant hormone production, improved water infiltration, increased water and oxygen holding capacity, deeper and more extensive turf roots, mycorrhizal associations, reduced soil compaction, and improved turf density with consequent weed suppression.

Grasses grown on putting greens are stressed more than just about any other plant in a typical landscape. Because of the cutting height, traffic, and the soil environment in which these grasses are grown, the stress level is analogous to that of a tree growing in gravel with ninety percent of its limbs and foliage removed. The need for biological activity in the soil environment under greens and tees is extremely high. Numerous studies have shown that increases in populations of soil organisms not only protect bentgrass from disease and other pests but also produce denser, greener, and more trouble-free greens.

The eight-percent nitrogen (N) in Nature's Turf 8-1-9 is derived from three different sources that all have different release rates. Most of the nitrogen is organic and feeds populations of bacteria that require high protein substrates to multiply. A small amount of the nitrogen in Nature's Turf 8-1-9 is derived from a soluble, natural mineral source that will provide N to plants even when the soil is cold and biological activity is naturally suppressed.

Phosphorus (P) is a nutrient that is very important to germinating seeds but established turf rarely needs much more than what is already in the soil. Unless a soil test indicates a need for phosphorus, excessive applications of P may only serve to increase the germination of annual weed seeds. The low amount of phosphorus in Nature's Turf 8-1-9 can significantly reduce the need for herbicides on the greens.

Potassium (or potash) is extremely important for plant strength and health. The plant's ability to defend against both insect and disease pests and its tolerance to heat, cold, drought, and wear depend on adequate absorption of potassium. Without sufficient potassium, cell walls become thin, weak, and less able to retain fluids. This condition makes plants easier prey for insect and disease organisms and less able to withstand traffic or survive through the winter. Potassium ions available to plant roots are magnetically attached to colloidal soil particles such as clay and humus. The abundance of these particles and their ability to hold positively charged ions (cations) makes up, what is known as, the cation exchange capacity (CEC) of the soil. The higher the CEC, the more cations like potassium, magnesium, and calcium can be held by the soil. Unfortunately, the type of soil in which greens are most often growing (sand) has an extremely low CEC and often cannot hold enough potassium ions necessary for adequate cell turgor. Nature's Turf 8-1-9 is designed to compensate for the low CEC normally found on golf course greens and provide the extra potash needed to grow strong, resilient plants.

Nature's Turf 8-1-9 (Greens Grade) is manufactured in consistently sized mini-granules that integrate into the turf canopy without disrupting putt-ability. We recommend that the first 2-3 mowings after applying Nature's Turf 8-1-9 Greens Grade be performed with the bag off. Application rates vary from 3 to 12 pounds per 1000 ft² depending on soil conditions and the preferences of the superintendent. If greens are growing on biologically inactive soil, we would recommend greater application rates less frequently. Once biological activity is restored, lower rates can be used but should be applied more often. Nature's Turf 8-1-9 should be applied during periods of the season when grass normally grows vigorously. Fertilization during periods when grass is normally dormant may fuel weed growth. Nature's Turf 8-1-9 can be applied as a dormant feeding in the late fall but not in areas prone to winter diseases. A late summer/early fall application can help soil organisms provide suppression of winter disease organisms. Nature's Turf 8-1-9 is best applied when turf shows signs of infertility. Coverage: 4000 - 16,000 ft² per 50-lb. bag. Product Density: 44 lbs. per ft³.

Biological activity can be measured with the Solvita Soil Life Test. This do-it-yourself kit measures respiration of soil organisms and is very useful in detecting invisible soil problems. In cases where soil biological activity is extremely low, topdress applications of a 50/50 mature compost/sand mix in early spring and late fall are highly recommended. **NOTE:** Immature compost can damage turf. Compost must be well-made and well aged (2 years or more) to provide good disease suppression. Yard waste compost will not offer as much disease suppression as food waste, bio-solid, or barnyard compost.

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