

The Organic and Humic Acid Qualities of **APEX-10**

APEX-10 is a Peat Humic Substance (PHS) and is one of a class of natural materials called "Fossil Humic Substances" that were examined by professional engineer H.A. Hartung. Through his work he was able to recover fossil humic substances made from lignite, leonardite, and peat, finding that PHS recovered from highly humified North American Peat was invariably more active.

To further prove this theory, 80 different

studies conducted with 80 different peat samples from three continents were used to measure the time it takes to lower the pH in soil, not falling farther but falling faster. The samples were mixed with finely divided sulfur at the rate of 1000 parts per million and PHS was added to the soil mixture at the rate of 0.2 PPM.

All 80 tests results found that PHS reduced the time it takes for thiobacters to convert elemental sulfur to sulfuric acid, lowering the pH of soil in 7 days rather than 21 days, an act regarded as true stimulation. As always in the

case in science, solving one problem uncovers another and now the question was, How could PHS stimulate thiobacters when thiobacters do not metabolize PHS?

Scientists and researchers from around the world reviewed this discovery and their response was the same: In complex populations such as exist in soil, there is always some form within that population that can start the metabolic chain, followed by a succession of enzymes and metabolites formed as PHS is consumed.



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The biological process of converting organic matter from peat into humic substances is the key to the success of PHS. It is both the completely decomposed organic matter and the humic acid that is readily soluble and available to the biomass surrounding the plant's root system, and the 100% solubility of the humic acid that is plant available.

Many of the country's leading universities have studied and analyzed the PHS of APEX-10 and have found it in every instance to be the single most active. Manhattan College found PHS to have a higher adsorption rate of metals in water. The New Jersey Institute of Technology found the solids in PHS are 88.7% Volatile Organic Matter, 100% soluble, and available to the soil biomass. Virginia Tech University found that 100% of the humic acid in PHS is soluble and plant-available. The Soil Foodweb found PHS increased soil biomass from 77% to more than 3000% and increased nitrogen retention in soil by more than 500%. Rutgers University found PHS increases turf grow-in from seed by a margin of 61%.

Research has shown that APEX-10 increases better turf when grown under adequate or

deficient soil moisture in trials. A number of previous research reports have shown the humic acids in APEX-10 increase rooting due to auxin-like activities and have convincingly shown to improve chlorophyll content and root growth.

Given the application of adequate amounts of a complete fertilizer, and the added effect of APEX-10 treatments, results have proven APEX-10 increase plants root systems when compared to humic acids made from leonardite and lignite.

When sports turf managers consider their biggest limiting factor for a newly sodded or seeded sand-based field is to provide a playable surface, the added effect APEX-10 provides brings a completely new approach to the industry.

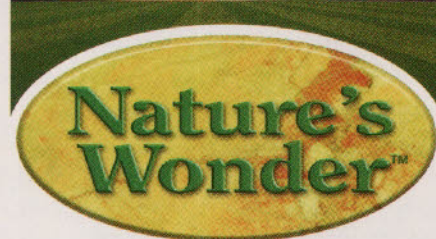
The single most common problem faced by many athletic field managers is the need to achieve a functional playing surface soon after sodding or seeding. Apex-10 and its volatile organic matter along with its humic acid qualities have shown repeatedly to improve rooting and tensile strength during turf establishment and the management of mature turf. ■



All photos above feature sod that was grown with APEX-10.

WHY APEX-10?

DEEPER ROOTS | STRONGER TURF | INCREASED BIOMASS



Natures Wonder APEX-10 is an organic Peat Humic Substance made from highly humified North American Peat. APEX-10 organic properties are over 88.5% volatile and 100% of the humic acid is plant available. These Biostimulating qualities of APEX-10 have been proven in university studies and in the field to deliver the highest results with the lowest application rate.

WITH THESE BEING JUST A FEW OF THE PROVEN RESULTS USING APEX-10, THE REAL QUESTION IS...

Why Not APEX-10?

1.856.222.4675

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Reviewed by OMRI and Registered for Organic Crop Production by USDA Standards.