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AmendMAX
X-CHANGE
150-0M
Premium Soil Conditioner

**The premium way to
amend and improve
exchange capacity.**

AmendMAX X-CHANGE 150-0M

Premium Soil Conditioner

AmendMAX X-Change 150-0M is a premium soil conditioner that is ideal for amending and improving the exchange capacity of sand based growing mediums. The **AmendMAX X-Change 150-0M** maximises the retention and release characteristics of all soil applied nutrients due to its high exchange capacity. As a result the response from applied chemical fertilisers is extended and nutrient losses via leachate are reduced, improving the overall nutrient efficiency gained from applied fertilisers.

Key benefits of the AmendMAX X-Change 150-0M

- Very high exchange capacity; perfect for increasing soil CEC
- Enhances moisture retention in sandy soils
- High concentration of organic compounds to stimulate microbial activity
- Good source of major nutrients and trace elements essential for plant growth
- Ideal for amending bulk growing media
- Excellent for blending with top-dressing sand in sportsturf situations
- Fully composted, no odour issues
- Clean material, containing no rocks or other foreign materials
- Available in bulker bags or loose bulk

Nutrients available in AmendMAX X-Change 150-0M

MAJOR	TRACE	OTHER PARAMETERS
Nitrogen (N): 2.35%	Iron (Fe): 5.0%	Cation Exchange Capacity (CEC): 153 Meq/100g
Phosphorus (P): 0.42%	Manganese (Mn): 0.057%	
Potassium (K): 2.1%	Boron (B): 0.012%	Organic Carbon Content: 18%
Sulphur (S): 0.9%	Zinc (Zn): 0.0043%	
Calcium (Ca): 5%		Copper (Cu): 0.00016%
Magnesium (Mg): 0.87%		

AmendMAX X-Change 150-0M possesses high levels of organic carbon and vital plant nutrients held within a stable, non-leachable matrix of complex humic molecules. These nutrients are in a plant available, freely exchangeable form. As a premium humate compost containing many beneficial soil microorganisms, **AmendMAX X-Change 150-0M** stimulates the conversion of existing soil residual plant material into organic carbon and humus to further improve growing conditions and the soil environment.

Improving soil exchange capacity with AmendMAX X-Change 150-OM

AmendMAX X-Change 150-OM possesses a higher exchange capacity than most other commonly used soil amendments. This is due to the highly refined composting practices used in the manufacturing process, resulting in a high proportion of humate than other sources. When applied to the soil the humic component immediately becomes active in the nutrient exchange process, and will retain nutrients from the surrounding soil environment, holding them in the root zone for plant use.



AMENDMENT / CONSTRUCTION MATERIAL	TOTAL NITROGEN	CATION EXCHANGE CAPACITY
AmendMAX X-Change 150-OM	2.35 %	153 meq/100g
Pine bark	0.2 %	100 meq/100g
Peat	1.5 %	30 meq/100g
Vermiculites	0%	110 meq/100g
Sawdust, composted	0.25 %	70 meq/100g
Quartz sand, fine	0%	10 meq/100g
Composts	0.52 – 1.74 %	10 meq/100g
Sawdust, raw	0.11 %	20 meq/100g

Hendreck & Black 2004

The importance of soil carbon in soil nutrition

Due to the soil types used in construction, soil organic carbon levels are often very low in turfgrass situations. These low carbon levels contribute to poor establishment of seedlings, increased incidence of soil-borne diseases and poor microbial activity. Organic carbon offers many benefits to the soil environment that directly and indirectly improve plant health.

AmendMAX X-Change 150-OM has an analysis of 18% organic carbon (about 31% organic matter) on a dry weight basis and supplies 252kg of organic carbon to the soil at an application rate of 2 tonne per hectare (rate adjusted for 30% moisture content).

This organic carbon contribution is vital in realising healthy soil nutrition, as for every 1kg of nitrogen applied to the soil, 5kg of organic carbon is required and used up to make this available to the plant. The organic carbon contribution from **AmendMAX X-Change 150-OM** is more biologically stable than other less mature organic sources, and is able to function immediately in nutrient retention and conversion within the soil.

The importance of organic matter in soil nutrition and structure

Organic matter has both a direct and indirect effect on the availability of nutrients for plant growth through its influence on the retention and exchange of nutrients including applied fertilisers. The most desirable form of organic matter is humus. Aeration, water holding capacity and permeability are all favourably affected by humus. The frequent addition of humate into the soil leads to the development of complex organic compounds that bind soil particles into structural units called aggregates. These aggregates help to maintain a loose, open, granular soil structure allowing water and oxygen to permeate freely throughout the soil. This benefits both the performance of the turf surface as well as the health of the soil environment.

Organic matter also serves as a source of energy for both macro and microorganisms. Population size and health of bacteria and fungi within the soil are related in a general way to humus content. It is widely known that many of the factors influencing the incidence of pathogenic organisms in soil are directly or indirectly influenced by organic matter. For example, a plentiful supply of organic matter may favour the growth of beneficial organisms as opposed to parasitic ones, thereby reducing the populations of the latter. Biologically active compounds in soil, such as antibiotics and certain phenolic acids, may also enhance the ability of certain plants to resist attack by pathogens.