Biomass Application _ Soil Ameliorant by Superturf

Introduction

Mpact Felixton Mill, during the paper manufacturing process, generates a compost material known as biomass. This material is collected by Superturf by use of Side Tipper Trucks and taken to their Turf growing farm facilities in eMpangeni.

Superturf are Buffalograss growers located in the eMpangeni area, near Ntambanana Local Municipality.

This biomass material is diverted from going to landfill site for disposal due to its great potential as a soil ameliorant. Superturf are using the material to enhance the soil's nutrients during the process of farming turf, particularly the Buffalograss (Buchloe dactyloides)

By definition an *ameliorant* _ is defined a substance that aids plant growth primarily by improving the physical condition of the soil.

Thus, Superturf are using the Mpact's biomass A soil conditioner is a product which is added to soil to improve the soil's physical qualities, usually its fertility (ability to provide nutrition for plants) and sometimes its mechanics. In general usage, the term "soil conditioner" is often thought of as a subset of the category soil amendments (or soil improvement, soil condition), which more often is understood to include a wide range of fertilizers and non-organic materials

Soil conditioners can be used to improve poor soils, or to rebuild soils which have been damaged by improper soil management. They can make poor soils more usable, and can be used to maintain soils in peak condition.

Water retention

Soil conditioners may be used to improve water retention in dry, coarse soils which are not holding water well. The addition of organic material for instance can greatly improve the water retention abilities of sandy soils and they can be added to adjust the pH of the soil to meet the needs of specific plants or to make highly acidic or alkaline soils more usable.

The possibility of using other materials to assume the role of composts and clays in improving the soil was investigated on a scientific basis earlier in the 20th century, and the term soil conditioning was coined. The criteria by which such materials are judged most often remains their cost-effectiveness, their ability to increase soil moisture for longer periods, stimulate microbiological activity, increase nutrient levels and improve plant survival rates.

The first synthetic soil conditioners were introduced in the 1950s, when the chemical hydrolysed polyacrylonitrile was the most used. Because of their ability to absorb several hundred times their own weight in water, polyacrylamides and polymethacrylates (also known as hydroabsorbent polymers, superabsorbent polymers or hydrogels) were tested in agriculture, horticulture and landscaping beginning in the 1960s.

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Process Application Soil Ameliorant _ SuperTurf

Below is the graphic display of how Superturf are applying the Mpact Felixton Mill's biomass to their Turf growing process, viz.,

1. *Biomass generated by Mpact Felixton Mill is stored in Bunkers*

2. *Biomass collected & Transported by Side Tipper Trucks daily basis to Superturf Farming Facility*

3. *Biomass is stored at Superturf on-site for s period of 3-months*

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4. *The biomass is then applied to the area where scraped grass had occurred*

5. *The biomass is applied by means of backfilling to enhance the soil conditioning to enhance the soil's nutrients, the seeds are applied into the soil and blended with the biomass*

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6. *This is then followed by the watering process*

7. *Then Four (4) months later the next harvest process commences again*

Process end