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## New Uses for Compost

### **Market segment description:**

Compost is already known to many in the green industries and agriculture as an excellent soil amendment that improves plant growth. Research and innovative thinking are revealing new uses and benefits through compost. Composts evolving roles

Compost is finding increasing roles in green industries, LEED certified construction projects, as an excellent soil amendment developing environments to limit soil erosion and increase biogenic growth and water retention. Here are some topical features and benefits of compost.

### **Quality requirements**

Compost producers are governed and regulated to very high standards to ensure quality of product. Specialty applications often require that as compost producers meet strict product specifications. As the uses of compost in this market sector are highly variable, the characteristics necessary for each application also vary widely. New uses often allow little leeway for product failure. For other applications which do not involve a patented system or product, we, as a compost producer work directly with contractors to customize compost product to meet the consumer's objectives.

### **Compost uses in this market sector:**

- Storm water runoff filtration.
- Control of plant disease pathogens.
- Erosion control on steep banks.
- Muck layer for wetlands restoration.
- Rehabilitation of infertile brownfields.
- Biofilter material for odor control.

### **Breaking into this market sector**

Compost producers develop "new uses" through trial and error, working with end-user groups such as greenhouse growers and others trying to solve a problem. We explore new and inventive ways of utilizing compost, based on their understanding of the unique properties of compost.

## Markets

### **Stormwater runoff**

Use of compost to control storm water runoff utilizes a mature, low nutrient compost as a filtering media which is placed in a catch basin for storm water runoff to pass through it. After passing through the compost filter, runoff water has been demonstrated to be lower in sediments, total suspended solids, oil and grease, heavy metals, herbicides, pesticides and fuel from accidental spills. When the adsorptive capacity of the compost becomes spent, it is replaced with new compost. Generally, disposal of the spent compost would at most require placement in a solid waste landfill.

### **Disease Suppression**

Use of composted organic materials to suppress plant disease has been demonstrated by researchers who have studied this trait for a number of years. The Clean Washington Center has been studying the effects of adding inoculants to composts to suppress specific disease organisms. Nursery growers have found that use of fungicides can decrease when compost is a component of the growing medium. Success with disease suppression is observed to be greatest when all of the factors involved in compost production are defined and controlled. The greatest disease suppressive capacity is obtained from specific feedstock materials, matured to a specific point where the biological mix most conducive to disease suppression is present. Suppression of root rot has been documented to be greater in mature compost than in dark peat or other stabilized organic material. This is due to the fact that peat is composed of material that is resistant to decomposition. Easily decomposed materials in peat were utilized by microbes in the distant past. However, when compost is properly prepared there is still a large store of material that can be decomposed by a large variety of microbes, thereby supporting a diverse microbial population capable of suppressing disease organisms.

### **Wetlands Restoration**

Compost has been used successfully as a medium for rebuilding the muck layer in wetland soils strata. This is effective for both rehabilitation and artificial construction of wetlands. Mature compost appears to mimic the organic makeup of the muck and promote healthy growth of native wetland species.

### **"Brownfield" Rehabilitation**

Finished compost provides many of the soil nutrients that can provide new opportunity for healthy plant growth on contaminated urban property. Increased plant growth and biodiversity helps create a healthier eco-system for humans and other animals.

### **Erosion Control**

Use of compost to inhibit erosion has been shown in several trials. The simple application of compost on roadside cuts without vegetation markedly reduced soil losses by erosion, both by "holding" the soil and stimulating rapid plant growth. Municipal landscape crews previously applied topsoil on slopes to establish turf for erosion control. However, this system was not satisfactory because the topsoil was often of poor quality. After several years of experimentation, the municipalities found compost serves as a better seedbed than topsoil. It is less likely to erode from a slope when it rains, and also holds water better, thus promoting faster seedling germination. After applying 3 to 4 inches of compost on bare soil to seed perennial rye, germination generally occurs within 7-14 days. They attribute success to the increased water holding ability of compost.

