



# Mavis Consulting, Ltd Newsletter

Turf & Soil Fertility Specialist

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## Compost:

Are you looking for a program that has the potential to significantly reduce your budget? Compost application has been shown to improve fertility, reduce disease pressure, reduce thatch, improve soil structure, improve water efficiencies, and increase divot recovery. These benefits are possible if the soil microbes ( $\pm$  930 billion per pound of soil) are managed properly.

The pictures below demonstrate how a mixture of compost and sand for divot fill significantly increased divot recovery compared to straight sand, sand/peat and sand/fertilizer (another trial not pictured). The divot plots indicated that the compost/sand recovery was twice as fast whether seed was included or not. The two divots on the left of both pictures are a sand/compost mixture.



The divot trials were repeated on three different tees with different types of turf, and the results were consistent regardless of turf type.

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The area of turf within the circle was bare soil one week before the picture was taken. The divots were top-dressed with compost/sand/seed and playable within one week.

This information is not new to the turf industry, but sources of well screened compost are finally available to increase the ease of use. The materials are being screened fine enough to be applied to greens, however more site evaluations should be conducted before doing so. Applications on fairways, tees, divots, rough, high traffic areas, and flower/landscape beds on the other hand are highly recommended at this point.

Some key components to consider when utilizing compost are: maturity, screening size, compost ingredients, nutrient content, microbial profile/ pathogen inhibition assay, weed seed germination, sand physical properties (if mixed with), and consistency.

With proper testing and evaluation, compost sources can also be utilized for root-zone mixes. Some benefits of including compost into the root-zone would be for significantly increased nutrient content over peat and most top-soil sources as well as increased microbial diversity.

DATE	ID	pH	OM	SOL. S	P.E.E.	Ca lb/a	Mg lb/a	K lb/a	Na lb/a	B ppm	Fe ppm	Mn ppm	Cu ppm	Zn ppm
<b>Desired</b>			2	<40	300		600	300	<60	1	50-80	40	2	5
<b><i>Sand/Compost Mixes</i></b>														
8/10/09	CCC	7.9	1.02	91	806	5688	374	168	96	0.79	411	23	4.98	8.87
8/13/09	SGC	7.7	1.8	188	907	12062	388	312	246	0.44	155	59	2.86	16.8
<b><i>Sand/Peat Mixes</i></b>														
9/27/07	EV	7.6	0.46	11	46	5282	278	56	44	< 0.20	80	30	0.73	0.76
5/22/09	HS	7.7	0.57	9	92	2500	214	44	62	0.23	61	31	0.51	1.25

Analytical Services Provided By Brookside Laboratories, Inc.

Standard Soil Analysis of two different sand/compost mixes and two different sand/peat mixes utilizing different sources of calcareous sand

### **Possible Compost Concerns:**

I do not recommend utilizing compost in areas that are constantly saturated with water until drainage (surface/subsurface) can be corrected. In doing so, the organic portion of the compost would most likely add to an area that already contains excessive amounts of organic matter/thatch.

The possible concerns for applications on greens are excessive Nitrogen release following summer applications and determining the correct ratio of compost/sand to ensure no organic accumulation/layering.

Some applications have increased earthworm activity which may cause issues with playability.

### **Verified Compost Benefits:**

1. Improves soil structure and porosity – creating a better plant root environment
2. Increases moisture infiltration and permeability, and reduces bulk density of heavy soils – improving moisture infiltration rates and reducing erosion and runoff
3. Improves the moisture holding capacity of light soils – reducing water loss and nutrient leaching, and improving moisture retention
4. Improves the cation exchange capacity (CEC) of soils
5. Supplies organic matter
6. Aids the proliferation of soil microbes
7. Supplies beneficial microorganisms to soils and growing media
8. Encourages vigorous root growth
9. Allows plants to more effectively utilize nutrients, while reducing nutrient loss by leaching
10. Enables soils to retain nutrients longer
11. Contains humus – assisting in soil aggregation and making nutrients more available for plant uptake
12. Buffers soil pH

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<http://www.compostingcouncil.org/education/resources.php>

### **Other sources of information for compost and compost use on golf courses include:**

1. “Ecological Golf Course Management” by Sachs & Luff
2. <http://www.compostingcouncil.org/>
3. [http://www.usga.org/course\\_care/articles/construction/greens/Green-Section-Recommendations-For-A-Method-Of-Putting-Green-Construction/](http://www.usga.org/course_care/articles/construction/greens/Green-Section-Recommendations-For-A-Method-Of-Putting-Green-Construction/)
4. “How Soils Work” by Paul Syltie, PH.D.