

# Strategies for Increasing the Value of Biosolids Compost

Ron Alexander  
R. Alexander Associates, Inc.  
1212 Eastham Drive  
Apex, NC 27502

## ABSTRACT

Increasing the value of compost has sometimes proven to be a difficult thing to achieve for composters. Aside from the fact that compost is often compared to other horticultural commodities, typically sold on ‘a price basis’, compost production often goes against typical supply and demand curves. This is because compost ‘supply’ (production) increases because of recycling or environmental drivers, not because its ‘demand’ has actually increased. That means that composters must work hard to increase their products value, using methods such as ‘branding’, etc., because supply is likely to increase – decreasing its value.

A somewhat new concept being considered to increase compost value is selling compost for the value of the products in which it is trying to replace. In years past, the composting industry strived to achieve the replacement value of products such as peat moss and milled pine bark. However, compost may obtain a greater value if it is sold for the replacement value of higher value products, such as certain fertilizers or fungicides, or even turf topdressings and erosion control products. This paper explores these possibilities, as discusses actual replacement values.

## KEYWORDS

Compost, marketing, value, topdressing

## INTRODUCTION

As composting has become popular as a biosolids management technique, more of the resultant product has been produced. Since many other types of compost also exist in the marketplace, markets must continue to be expanded. But aside from expanding existing markets, the value of compost products must also be encouraged to increase.

There are a number of factors that influence the value of compost, including

- Product quality
- Volume produced (supply vs. demand)
- Size of market (population, end user demographics)
- Distance to ‘market’ (transportation costs)
- Innate value (benefit based)
- Perceived value (education, branding)
- Competition (similar and replacement products)

Unfortunately, individual composters can only take measures to impact some of these influencing factors. In stating this, there are some proven methods by which composters may positively influence the value of their compost. These methods include,

- Improving product quality, produce products ‘fit for purpose’
- Better managing product supply
- Staying active in market development – expand demand, educate

- Improving the distribution infrastructure – sell ‘direct’, reduce shipping costs
- Improving innate value – ‘brand’, differentiate
- Understanding competing products
- Chasing higher values markets and develop high value blends

Once these factors are understood, composters can seek to move their marketing programs to the next level.

## DISCUSSION

When assessing the value of compost, we should consider the value its benefits, such as reduced fertilizer or irrigation costs. In some cases, these benefits are the “icing on the cake,” the sale-closer that gets compost in the door with new potential end users. In other cases, specific dollar values can be assigned, and thus factored into the sale price of the compost. The examples that follow begin a dialogue on how to value benefits, as well as increase the baseline value (price) of compost products.

### Fertilizer

Most composters have avoided comparing their compost products to fertilizer — which is understandable in most situations since registering compost as a “fertilizer” can be a little tricky. However, guaranteeing nutrient content may help biosolids composters raise the value of their compost products, especially if they are trying to service the turf management industry, which often seeks slow release nitrogen sources — a feature that many composts have. Modern agricultural production, on the other hand, favors quick release nitrogen sources (e.g., urea, ammonium nitrate, ammonium sulfate) that typically are much less expensive than their slow/controlled release counterparts (e.g., Nitroform, Milorganite) used in turf management. The turf industry often spends hundreds of dollars more per ton than farmers to buy the slow release forms of nitrogen they prefer. A document used by the Florida Department of Agriculture documents the value difference of these products. Wholesale nitrogen fertilizer prices in agriculture are \$.24 to \$.28 per pound; in the turf/ornamental market, slow release or water insoluble nitrogen is valued at \$.65 to \$.79 per pound. Therefore, each percent of slow release nitrogen (on a dry weight basis) in a ton of compost possesses an approximate value of \$13.00 to \$15.85. So, the value of nitrogen (slow release) in compost possesses a higher value in the turf industry than it is in the agricultural industry. Although the composting industry is not going to sell compost into the turf market as a direct replacement for nitrogen fertilizer, it could be gaining additional value from compost if we sold it for its innate content of slow release nitrogen. So there’s additional intrinsic value that can be attained.

### Fungicide

Research has shown that many composts possess disease (fungal) suppressive characteristics. The Ohio State University research, primarily spearheaded by Dr. Harry Hoitink, has even identified the specific modes in which suppression occurs, and commercial labs are now testing compost for microbial populations in order to predict disease suppression. It is also important to understand that compost provides “preventative” disease control, and not “curative” control. Biological controls are also often less predictable than chemical products, however, chemical fungicides are not always effective either. All pesticides sold in the U.S. must be registered through the Environmental Protection Agency, which is a very expensive and time-consuming process. Without an EPA registration, a compost cannot “legally” make disease suppression claims. For this reason, composters may not be able to gain full replacement value for their composts acting as a fungicide. Regardless, the use of disease suppressive composts could replace, or reduce, the use of fungicides in many scenarios.

With so many fungicides available on the market today, controlling any number of diseases, many turf managers now evaluate the cost of turf disease control (fungicide applications) on a 1,000 square foot per day basis. However, a huge variation in the cost of different fungicides exists, ranging anywhere from \$12.00 to \$33.00 per acre for 14 days of control. In order to consider the potential fungicide replacement value of compost, consider using compost to replace a moderately priced turf fungicide (such as Manicure T/O). This

product costs between \$2.43 and \$3.64 per 1,000 square feet per day to use, which equates to \$211.70 to \$317.12 per acre, for a 14 to 28 day treatment period. Of course, these costs do not include the application, or reapplication, costs. These fungicide costs equate to a potential replacement value for compost of \$264.00 per acre.

### Topdressing

Many composters market their end products as turf topdressings for golf course fairways, athletic fields and home lawns. This application has developed into an excellent niche market for compost; especially since there is little competition for compost in these markets (except for very expensive sand-based topdressings developed for golf tees and greens). Although the composting industry is already successfully developing this market, we are underselling the value of compost.

In the golf industry, for example, sand-based topdressings cost approximately \$25 to \$35.00 per ton, delivered. Compost is typically sold at an estimated price of \$15.00 per cubic yard, delivered. A ton of sand-based topdressing has an equivalent volume to one cubic yard of compost (compost possesses half the bulk density of a sand-based topdressings). Typically, for a golf course, sand-based topdressing is applied at a one-quarter inch application rate, which is equivalent to 33.5 cubic yards/acre. Thus the per acre cost is \$1,020, or \$23.41 per 1,000 square feet.

### Replacement Values

Applied at a one-quarter inch application rate (or 33 cubic yards per acre), the cost to the golf course is \$502.50, or \$11.54 per 1,000 square feet. This is half the cost of the typical sand-based topdressing. Other relevant product costs are found in Table 1. They represent products used by most turf managers, and those which may be replaced if compost is used as a topdressing.

Table 1 - Relevant Product Costs

Sand-Based Topdressing <sup>a</sup>	\$1,020/acre or \$23.41/1,000ft <sup>2</sup>
Compost (used as Topdressing) <sup>a</sup>	\$502.50/acre, or \$11.54/1,000ft <sup>2</sup>
Nitrogen Fertilizer <sup>b</sup>	\$245.00/acre, or \$5.62/1,000t <sup>2</sup>
Fungicide <sup>c</sup>	\$264.00/acre, or \$6.07/1,000ft <sup>2</sup>

<sup>a</sup>1/4 inch application rates

<sup>b</sup>Using earlier example, compost with 1% nitrogen applied at 1/4" (8.5 dt/a)

<sup>c</sup>Using *Manicure* value, with compost controlling fungus for 14-28 days

Using these estimated cost figures, a cost comparison can be developed (Table 2). This comparison illustrates that a compost topdressing can fulfill the function of three products normally used in the management of high quality turf. These figures illustrate that compost producers who are obtaining \$500.00 per acre (\$15.00 per cubic yards) for their compost, sold as a topdressing, could be getting much more – if they price their product based on its replacement value.

Table 2 - Cost Comparison

Costs (per 1,000 sq.ft. basis)	Sand-Based Topdressing	Compost used as Topdressing
Topdressing	\$23.41	\$11.54
Nitrogen Fertilizer	\$5.61	\$0

Fungicide	\$6.07	\$0
Total Costs (per 1,000 sq.ft. basis)	\$35.09	\$11.54

Of course, many other opportunities exist for creative applications that can increase compost value — based on its replacement value.

## CONCLUSION

Biosolids composters must consider whether they should continue to sell their products at a convenient price, or if work harder and receive a higher value. If compost is to move out of the ‘commodity’ pricing scenario, then we need to collectively do a better job in product education and sales. Further, to progress in this arena, we have to do a better job evaluating the economics of our marketing options and potential product replacement values. We also need to consider how the industry can fund these creative types of initiatives, and how we get the larger composting industry involved in supporting these concepts. What we’re considering here is a movement — how we move compost marketing to a new level. By focusing on what we replace as a purchasing option, and the value it holds in the eyes of our customers, we can effectively enter into new markets we have never before considered.

<p>The original version of this paper, co-authored with Rod Tyler (Green Horizons/Filtrex International) and Nora Goldstein (<i>BioCycle</i>), appeared in the October 2004 issue of <i>BioCycle</i>, Journal of Composting &amp; Organics Recycling, <a href="http://www.biocycle.net">www.biocycle.net</a>.</p>
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