Marketing Biosolids: The Experience of Milorganite with Special Reference to Canada

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Abstract: The Milorganite Metropolitan Sewerage District (MMSD) has marketed its biosolid as a fertilizer for over eighty years. Initial consumers initially were golf courses and farms. Golf continues as a strong customer base but farms have been replaced by homeowners. Milorganite® 6-2-0 is currently sold throughout the United States, Canada, the Caribbean, the Pacific Rim, and Europe. The objectives of MMSD are to provide beneficial reuse of all Milwaukee biosolid production and create a revenue stream to aid in offsetting operational expenses. Sales throughout the United States have been simplified by the implementation of the US EPA 40 CFR Part 503 regulations. These regulations essentially provide for one standard, with minor exceptions, for biosolids quality throughout the United States. Without these regulations, it is unlikely Milorganite® biosolids would be a national product today.

Keywords: Fertilizer; marketing; Milorganite; revenue; sales

INTRODUCTION

The Milwaukee Metropolitan Sewerage District (MMSD) has marketed their locally produced heat dried biosolid, brand named Milorganite®, for over eighty years. The MMSD collects municipal and industrial waste from 28 local communities. This waste is treated in two plants: South Shore, an anaerobic treatment facility, and Jones Island, an aerobic treatment facility where actual Milorganite® fertilizer production occurs. Treated sewage sludge can be transferred between plants, with Milorganite® fertilizers most often a combination of aerobic and anaerobic treated sludges.

O.J. Noer was employed by the predecessor of MMSD in 1920 as an agronomist to find uses for these biosolids (Bocher, 2000). His research found the most cost effective use is to sell these biosolids as fertilizer into the golf, horticultural and homeowner markets. Mr. Noer also founded, at MMSD, the first soil testing laboratory devoted to the needs of turf. His groundbreaking research is still the basis of most turf nutrient recommendations today.

Milorganite® fertilizer biosolids are designated as Class A Biosolids. This allows the use of these biosolids to fertilize any crop, including agriculture crops, turf, horticulture and food crops. No special soil incorporation or other restrictions apply to the use of Class A biosolids.

Milorganite is presently marketed throughout the United States and Canada. North American trained golf course superintendents have taken their experiences with Milorganite to off-shore markets in the United Kingdom, various European countries and throughout Pacific Rim countries. Experience and interviews show over 90% of golf course superintendents today are familiar with and have used Milorganite® fertilizers as a nutrient source on their courses.

DISCUSSION

Regulatory Issues

Prior to the early 1990’s, biosolids regulations in the United States consisted of a patchwork of local regulations. The need for uniform regulations led the US EPA (US EPA 40 CFR Part 503, 1993) to fund research to determine the values for acceptable levels of metals and pathogens in land applied biosolids. This work led to the formation of the 40 CFR Part 503 regulations, which is the control mechanism for all land applied biosolids in the United States today. Most states follow the “503” regulations implicitly, with several states adding additional layers of control by setting contaminant limits lower than those required by the 503’s.
This results in national regulations regarding the acceptable levels of contaminants allowed in land applied biosolids, acceptable methods of pathogen reduction and guidelines for land application of biosolids containing high levels of pathogens. These regulations create a differentiation between Class A (extremely low pathogen and metals levels) biosolids and Class B (higher levels of pathogens) biosolids. This differentiation results in separate rules for land application for each class. A benefit of defining a Class A biosolids has been in creating a mechanism to market these biosolids as fertilizers or soil conditioners nationally. Another designation, the so-called Exceptional Quality (or EQ) biosolids are those with extremely low metals contents, allowing their use to fertilizer vegetable crops with no timing or application barrier restrictions. Milorganite® biosolids meet and exceed this EQ qualification.

Milorganite® biosolids fertilizers are registered in each state marketed as both a biosolid for land application and as a fertilizer with the appropriate state agencies. MMSD provides, as mandated by state regulatory agencies, Milorganite® biosolids laboratory analysis, tonnage, product nutrient analysis and similar data. Due to the extra layer of oversight provided by each state’s department of environment, Milorganite® biosolids fertilizers are one of the most regulated fertilizer marketed in the United States. This gives customers and the public of both the environmental and human a high assurance of protection when using these biosolids as a nutrient source on their turf, vegetables and ornamentals.

It is safe to assume that, in an environment where local biosolids regulations are in effect with no national or federal framework, conflict between local regulations will arise and limit the ability of these biosolids to be land applied outside the jurisdiction of their production. These conflicts include defining biosolids, defining and setting upper limits for allowable pollutants, and defining specific uses of usable biosolids. The resulting quagmire of conflicting rules leads to less beneficial reuse of this important resource and more land filling. This is both costly in land filling and due to the loss of nutrients from resulting diminished land application.

**Marketing**

“Milorganite” is the acronym developed by a customer in 1925 that stands for MILwaukee ORGanic NITrogen. Milorganite® is the active registered trade name for biosolids marketed by the MMSD. In over the eighty years of marketing, Milorganite® has become known as standing for a value, performance, environmentally friendly, consistent fertilizer (as related by customer surveys of both professional and homeowner users). Milorganite® fertilizers are so consistent they used by researchers in trials as a “known” when evaluating the performance of new fertilizers.

Current sales break down to 55% homeowner and 45% professional turf care. Sales to agriculture are negligible due to consistently low revenues. Sales projections continue to reflect this trend.

The amount of Marketing required varies by customer size and type. The homeowner market demands direct contact from Milorganite to homeowners, with distribution occurring through either one- or two-step channels. Distribution channels to the homeowner market are evolving as retail chains grow in size and influence. Communications to homeowners consist of radio, public and cable television, print newspaper and magazine, in-store banners and posters plus financial support for local retailer activities. Professional support is primarily through training of distributors’ sales representatives who serve that market and trade show activities.

Distribution is changing due to dramatic increases in the cost of logistics. Currently, all Milorganite® fertilizers are produced and shipped from Milwaukee, WI. Due to issues relating to production declines (created by the loss of “wet” industry in Milwaukee) and increasing freight costs, MMSD is investigating various options regarding the use of biosolids produced in other locations, nearer to end users. This will lead to lower freight costs with slight increases in packaging (due to lower volume packaged at any one location) and administrative costs. The net result will be lowered costs for delivered Milorganite® fertilizers to customers distant from Milwaukee.

Marketing efforts are supported by eight internal Milorganite staff members (sharing duties and with multiple roles) plus support by MMSD laboratory, graphics, legal, accounting and similar staff. The 2007 Milorganite marketing budget, including wages for the eight employees and packaging expenses for nearly 2 million bags, is slightly over $3.0 million dollars (USD). This will result in annual sales of slightly over $6.0 million.
Two unique marketing issues are distinctly related to biosolids: the Yuch! Factor and environmental concerns. We try to overcome the Yuch! Factor by describing Milorganite® fertilizers as being primarily dried microbes with added iron. We also relate that most fertilizers containing organic components have an odor. Environmental concerns are overcome by strict, continuous laboratory analysis showing Milorganite exceeds regulatory limits. We also relate previous and on-going research into various aspects of the environmental effects of using Milorganite® fertilizers. Research relating to environmental concerns today includes work relating to the low Water Extractable Phosphorus of heat dried biosolids. This leads to an extremely low potential to leach this troublesome nutrient. Similar work relating to the water insoluble nitrogen contained in biosolids has led to similar low leaching claims. This allows Milorganite to inform the public of the environmentally friendly aspect of Milorganite® fertilizers.

CONCLUSION

Future

The MMSD continues to be concerned regarding the loss of “wet” industry in Milwaukee which leads to declines Milorganite® production. Various options are being investigated to mitigate these declines. One of the most promising is to source heat dried Milorganite®-like biosolids that are produced nearer to distant customer locations. This will lessen the effect of increasing transportation costs. The net result at those locations will be a marked decrease in delivered costs, leading to increasing sales.

Potential new high value uses and markets for Milorganite® branded biosolids are being sought. At this time a pesticide application for “Milorganite® 6-2-0 Deer Repellent” is being reviewed by the US EPA Office of Pesticides. This product, upon registration, will open new, non-traditional, high value markets for Milorganite® branded biosolids.

The public will continue review the land application of heat dried biosolids. These questions will include the possible the environmental effects of biosolids nutrients, reviewing possible effects of newly identified contaminants in biosolids, and questions relating to the overall safety of these products. Quality peer reviewed research is necessary to provide answers to these concerns and lead to regulations guiding their use and application of heat dried biosolids.

REFERENCES


