City of Ottawa - Trail Road Landfill Site and Kemptville College - University of Guelph: Compost Survey Report.

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Executive summary.

The research and accompanying survey for which results are indicated below were originally initiated by the **Regional Municipality of Ottawa-Carleton (RMOC)** in conjunction with **Kemptville College - University of Guelph**. It should be noted that recently, RMOC has been amalgamated into the new **City of Ottawa**. The author gratefully acknowledges financial support from the **Ontario Waste Diversion Organization (WDO).**

Increasing costs and environmental questionability of continuing to put recyclable wastes into landfills obligates municipalities to find means for diverting these waste materials from the waste stream into productive end uses. Numerous studies on the apparent benefits of reusable wastes abound in the literature with all areas of organic waste being well represented. This study was undertaken to determine the usefulness and marketability of composted organic waste from the Trail Road landfill site for which responsibility was assumed by the new City of Ottawa. Results were mixed but to a large extent, understanding of the value of composted products in the eyes of the consuming public, even amongst the horticultural community, appears to be low with a focus on nutritional value and price appearing to be most dominant in decisions regarding purchase and use.

Introduction.

The goals of the survey were to determine whether composts of the type generated by facilities like the Trail Road Landfill Site were marketable to prospective major users. The methodology used to conduct the survey was as indicated below (see Methodology). The geographic area serviced by the survey was limited to those areas which were relatively local to the landfill site as it was felt that the increased costs associated with trucking would negate any perceived value. Over a hundred individuals and organizations were contacted and surveys passed out. Approximately 50% response occurred.

Methodology.

A survey to assess the potential market for City of Ottawa Trail Road Landfill Site compost was conducted between the 1st January and the 28th of March, 2001. The survey questions were derived from consultations with individuals from industry, researchers and the public. A copy of the survey prologue and questions are attached below. Due to the nature of the research and prospects as to whom major users of the compost might be, three primary areas of horticulture were addressed: turf, greenhouse and nursery, and field vegetable producers. Since any perceived retail value of the compost would decline as distance from the Trail Road Landfill Site increased due to shipping cost, relatively local (within 150 kilometres) individuals and companies were contacted. Targeted individuals were derived from two sources; they were either members of trade organizations which included the following: Landscape Ontario, Ottawa

Valley Turfgrass Association, Canadian Golf Course Superintendents' Association; or they were selected by virtue of their inclusion in various directories such as the Ontario Greenhouse Growers' Directory and Buyer's Guide and Ontario Fruit and Vegetable Industry Directory and Buyer's Guide. The targeted recipient was first phoned to get their co-operation, then the survey faxed to them that same day. Each co-operator was then given several days to fill out the survey, then phoned back if the completed survey had not been returned by fax.

The survey was constructed so as to answer as many different perspectives on compost usage in as few clearly written and simplified questions as possible. Surveys are generally developed to assist in information recovery for a wide variety of purposes, but most are brief (less than 4 pages, less than 20 questions), specifically ordered so as to introduce the topic, decant pertinent answers, and then ask for confirmation of earlier answers. A typical survey also allows the participant to query the individuals responsible for the survey in order to clarify specific questions in the survey proper, to increase their understanding of the topic, or even to increase their participation.

The survey attempted to answer questions oriented around several key areas relating to compost usage. Were recipients interested in using a product that, in all essence, allowed them to "feel good?" Thus, the question on usage of so-called "green" products challenged the survey target on their (as a reflection of their industry) disposition to this concept, as well as to query them on "putting their money where their mouth is" in terms of whether they were already using recycled waste stream products in their production cycles. Presumably, if the industry sector being addressed already has a wide scale commitment to recycled products, the generation of a market for RMOC compost has already occurred and disposition of the product *vis-a-vis* marketing needs to reflect this.

Several questions were oriented to the survey recipients' understanding of the value of a composted product. Commonly held research findings were incorporated into listed answers in an attempt to determine if recipients were aware of the possibilities associated with compost usage. The nature of the answers and in some cases, the ordering of their relative importance, indicates whether a basic or fundamental level of understanding exists in general or by specific subgroups within that particular sector.

One of the major aims of the research was to determine the benefits of the compost versus cost of using the compost. Several questions were included to determine the level of disposable income as it pertained to use of these products and the use of competitive products of a like nature. Were these products perceived as novelty items or having definable value? Several questions then asked the respondents outright why they wouldn't use a composted product. If misconceptions abound, then again, future marketing needs to address these issues. As enticements, survey participants were asked if they were interested in participation in future research endeavours or in the provision of a free sample of product for use as they saw fit. In its own right, these last questions were used as both an additional measure of the respondent's interest, plus to generate interest broader interest and usage of the industry sector.

Results.

Over 50% of individuals contacted returned the survey. **Questions #1 and 2** were included so that responses could be tracked. All replied in the affirmative to **question #3** regarding whether they were interested in using a "green product." This reflects a widespread trend towards broad-scale public and industry acceptance relating to "use" of recycled products. The remainder of the survey attempted to isolate exactly where this prospective use may lie. Initial suspicions as to whether those that did not return the survey simply did not want to use a green product were not borne out. In only a few isolated cases, did targeted survey recipients indicate that they simply did not believe in recycled products. Paradoxically, no surveys were received from these individuals despite their initial agreement to take part in the process. The most common reason for failure to take part or in returning the surveys was primarily that of seasonal layoff.

This level of interest in using compost was gratifyingly reiterated in respondents' answers to **question #4** which inquired whether they were interested in taking part in prospective compost related research projects. Greater than 95% of all those contacts expressed an interest partnering with a research institution for this purpose.

Question #5 continued with the positive trend/disposition towards using composted products. One hundred percent of all respondents (including those that were not interested in research partnering) indicated a clear interest in receiving a free sample of Trail Road Landfill Site compost for their own evaluative purposes.

The next **question (#6)** querying whether the respondents had ever used a recycled product generated an approximate 75% yes with the remainder saying no. This suggests that to some degree, those answering the survey were already "converted to the cause." It was somewhat reassuring to see that the 25% who had not used recycled products had previously indicated an interest in trying both a sample to give a try, and all were interested in assisting with research. Failure to use recycled products by these individuals was what the survey attempted to isolate in subsequent questions, particularly question 7.

Respondents were asked to rank 5 options in answering **question #7** which attempted to define the exact cause for failure to previously use recycled products. No answers were recorded in 35% of all surveys returned. Responses were ranked and listed in the table below.

Question #7 answers:

Answer:	Rank:
cost	3
not interested	4
insufficient return on investment	5
lack of knowledge about product	1
satisfaction with existing practices	2

It is reassuring to know that lack of knowledge ranked 1st in the list of possible answers. This reflects an awareness but lack of concrete information regarding usage of a composted product. It suggests that dissemination of research results in combination with industry acceptance acquired through incorporation of composted products into horticultural processes would address this. The high ranking of satisfaction with existing practices indicates that changes involving the incorporation of compost will only be made if there are clear reasons for doing so. resistance to change, particularly changes that involve security, fiscal solvency and more importantly just plain money are only typically undertaken when there is a definite perceived benefit. No significant differences in terms of the horticultural sector were determined.

Question #8 was answered only those individuals who had prior experience with supplemental organic products. Of the 6 possible answers, only 3 were selected by any one survey respondent. Ranking from most commonly used to least commonly, results showed a clear preference or familiarity with mushroom compost, then manure with bark a distant 3rd choice. Mushroom compost has been widely available to the public and industry for many years. It is easier to understand why this particular product is perceived and received so well by the consumer. This includes but is not restricted to the fact that the product is generated via the production of a food source. Most people, whether it is warranted or not, associate a considerable degree of safety or security with current methods of food production, thus, it is simple to see why this product has gained widespread acceptance despite its at times suspect level of benefit other than as a source of short-lived organic material supplement for soil. Manure has a historical association with soil enrichment and yet the yield of nutrition from manure has always been characteristically low when compared with chemical fertilizers. Bark is somewhat more commonly used in nursery mixes and local nurseries confirmed this although the level of usage was indeed minimal. Primary users of these three products were confined to the turf and nursery trade. No greenhouse growers responded that they were currently using composted products. Volumes used were quite low, often below 20-25 cubic metres for the entire year. This may be due to a persistent and poor understanding of the value of an organic material, especially regarding repeatable use within a season, or simply because these volumes are sufficient given the scale of the operation.

Answers to **question #9** were somewhat predictable. Obviously, if a company or individual was using composted products, there has to a (good) reason for doing so. All survey recipients who were currently using compostables agreed that there was a beneficial affect as a consequence of using them.

Question #10 attempted to gauge the level of understanding and to determine where possible marketing strategies should be directed so that composted wastes could be readily distributed and/or sold. Rankings of answers for this question are presented below.

Question #10 answers.

Product:	Ranking:
cost/price	2
nutritional benefit	1
product consistency	3
ability to aerate	4
reliability of the supplier	7
disease resistance	8
ease of use	5
storageability	9
increase water uptake.	6

Nutritional benefit was ranked most highly with cost ranked a close second. Across all sectors, these two answers were fairly consistent whereas for the remainder, there was considerable discrepancy not only between sectors (turf versus nursery versus greenhouse) but variation within a sector. This level of discrepancy suggests that there really are only two issues that producers of composted products can consider in order to encourage broader usage of their products; nutritional benefit and price. This level of difference may also relate to a poor understanding of just what it is that composted products can do for a grower. Presumably, earlier recommendations to promote research findings will address these specific issues such as increased microbial populations, increased disease resistance, improved soil tilth, etc. Ranking nutritional content highest poses a problem for the compost producer. Most composts are typically low in nutrition. Trail Road Landfill Site compost is similar to biosolids produced at a number of paper mills in this country, application of nitrogen is utilized to speed up decompositional processes in the pile to speed up degradation or prevent stalling of the process. Residual nitrogen plus the yield of nutrition from the composted product still compares relatively poorly with chemical fertilizers in terms of overall content. It may be that one of two things

needs to happen for composted products to be more accepted. Composts may need to be supplemented with additional fertilizers to bring them more in line with what is perceived (they have high nutritional complements) or their other desirable characteristics have to be amplified so that less impetus is put onto this aspect. Cost will always be an issue. It is a function of perceived value and return on investment. Until widespread knowledge of the value of these composted products is accepted or even promoted, asking price will not be determined by the seller by rather much more so by the purchaser.

Question #11 queried the current user as to what price they were currently paying for any composted product. Of the possible answers, only 2 were reported; $0 and $6-10 per cubic yard/metre. Those that indicated they were not prepared to pay anything were either engaged in the process of making their own or may have been of the opinion that since these materials were a "waste" product, why should they have to pay for them? Those that answered that a value of $6-10 was appropriate were in the majority. This still reflects a poor price for a valuable product, but it begs the question of where they are deriving this price from. Chemical fertilizers in 25 kilogram bags vary in price from as little a few dollars to upwards of $40. This variance in price is based on the quality of the product, the nutritional yield, the contents and a host of other factors of which the consumer may or may not be aware. Increasing the perceived value of composted products is clearly the only way of increasing price. It should be noted that this price is in line with the price being paid for fresh screened topsoil which is almost always assumed to be "good" irrespective of the source.

In answering **question #12**, turf producers, golf courses and nursery producers used anywhere from as little as 5 cubic yards per year to as much as 100 cubic yards per year. Turf producers easily ranked highest, followed by golf courses and nurseries. Vegetable producers used more manure than anyone else but tended to use cover crops and green manures in place of applied amendments. Seed is cheaper than trucked-in product and this represents a clear disadvantage for compost which is not produced on-site. Golf courses represent a potentially rich vein of potential users since they tend to have higher disposable incomes and they are in need of large volumes of top-dressing materials in order to reduce wear, re-incorporate plant crowns and improve soil texture and structure. A series of trials involving golf courses is in order.

Question #13 essentially conveyed what one might reasonably expect. An even split occurred between those indicating that they were going to increase their usage of composted products versus those who were going to decrease their usage. In a few instances, several indicated they were going to not use any composts at all, a complete eradication. Nevertheless, all respondents had earlier indicated that they were prepared to accept a "freebie" and most were interested in some kind of research association.

The last **question, #14**, returned to the issue of why the would or wouldn't use a compost in the future. Although only answered by about 75% of respondents, the answer was clear. Cost was ranked as the highest (and only) important determinant. A tie between perceived quality and asking price has to be made that more favourably projects the greater qualities of a compost.

The development of the survey left all individuals involved in the development of the survey with some trepidation as to whether the contents were exhaustive or specific enough to discern the answers being sought. Apparently, this is fairly typical. Minor adjustments became necessary as some of the earlier responses came in. Several requests for clarification necessitated these revisions, plus inadvertent omission of some minor aspects pertaining to compost usage were corrected early on.

The range of individuals contacted should include a broader range of individuals. Organic crop production is fast becoming a major player in the production of a wide variety fo crops, particularly those destined for human consumption. The numerous members of the various organic organizations (ex: the Organic Crop Improvement Association - OCIA, the Demeter Group) represent a group that was poorly represented in the survey. No sand and gravel producers were contacted; however, given their large scale involvement in "making soil" or delivering the material, it is feasible that they may represent a major source of interest in composted products

Plainly, there is a need for composted products to get more exposure. Most people recognize the inherent benefits of utilizing recyclable wastes; however, most of these individuals have little if any commercial experience in using them. That so few industry "players" routinely use recyclable waste products despite years of research data supporting the positive aspects of utilizing materials of this sort reflects a failure to adequately promote the product. Marketing and broad-scale endorsement by "successful" users is what it appears needs to happen. This can be addressed in the short term through the formation of research partnerships with large, well-known and respected individuals and companies to determine the exact specificities and potentials for use. Presumably, positive results could then be promoted and used as testimonials which in turn would assist in the development of a market. Price of the product can only be determined in the context of value as perceived by prospective end-users; if product endorsements and research findings are not adequately disseminated consistently over the course of time, potential markets will simply not materialize.

Transferability to other regions/municipalities in Ontario.

The lack of understanding relating to the use of composted products generated by waste handlers is not the sole domain of the Trail Road Landfill Site. Marketing efforts in the form of promotional materials including dissemination of research findings, needs to be increased. Compost days offering free samples, workshops, etc., plus provision of definable results from field trials with industry partners, endorsements and testimonials from satisfied clients are all required. The products themselves are not the issue in most cases; it is the lack of understanding or knowledge in the mind of the consumer that appears to limit wider scale disbursement.

Sample Survey.

To:

From: Peter Johnston-Berresford, Horticulture-Arboriculture program Co-ordinator
Marie Van Criekingen, Research Technician.

Re: Survey on possible marketability of Regional Municipality of Ottawa - Carleton (RMOC) compost.

Thank you for agreeing to take part in this survey about using compost in your business. This survey should take no more than a few minutes of your time. Please answer the attached questionnaire and fax it back to **613-258-8285. Should you have any questions, please phone me at 613-258-8336 ext 456.** A copy of the survey's findings will be provided to respondents.

Project description:

The RMOC and Kemptville College have embarked on a series of research trials to evaluate the possibility fo utilizing a composted product in a variety of growing situations. Three areas were originally selected: greenhouse and nursery production, field vegetable production and turf production.

RMOC compost is a carefully blended mixture of yard waste that is composted over the course of several months. Locally generated organic yard wastes such as leaves, grass clippings, branches, etc., are collected and chipped, then placed into windrows which are monitored, turned weekly for the first 8 weeks, then once a month thereafter. The end product is non-toxic and safe for use with non restrictions on use by the Ministry of the Environment. The RMOC is interested in diverting materials from the waste stream. In essence, they wish to reduce, re-use, and recycle.

Kemptville College is an educational and research institution that focuses on producing information on sustainable agriculture and horticulture. A number of researchers at the college have several years experience working with organic wastes and their potential for use in these areas. Previous research partners have included Domtar Specialty Fine Papers, Waste Conversion Incorporated and E.B. Eddy.

The research using this product has shown potential for use in three areas: greenhouse and nursery production, field vegetable production and turf production. Trials showed that there were yield improvements depending upon the plant used and the amount of compost used. Other results indicate that soil/media performance is generally improved by the addition of compost.

This survey will be used to estimate the market demand for RMOC compost.

RMOC - Kemptville College Compost Trials.

Please return by fax to 613-258-8285.

1. What type of business are you?

Greenhouse

Nursery

Garden Center

Golf Course

Landscaper

*Other, please specify*_____

2. Name of business. (Optional)

_____

3. Are you interested in using a "green" product?

yes *no*

4. Would you be prepared to take part in a small scale research project which will include RMOC compost? The amount of effort and time required on your part would be minimal. **Phone Peter at 613-258-8336 ext 456 if you would like more details.**

no *yes*

5. Would you be prepared to use a freely provided sample of this product to help you determine if there was a benefit to you?

yes *no*

6. Have you ever used a composted product in your business as a soil amendment, in the past 3 years?

yes *no*

If your answer was **NO** in question 6, please answer question number 7 .

If your answer was **YES** in question 4, please answer questions 8 through 14.

7. What are your reasons for **NOT** using a composted product? Rate from 1 (very important) to 5 (not important).

____ *cost*

____ *lack of knowledge about product*

____ *not interested*

____ *satisfaction with existing practices*

____ *insufficient return on investment*

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8. What composted products have you used in 2000? Check all that apply and indicate the volume used in 2000.

none

biosolid _____

manure _____

mushroom compost _____

bark _____

other... please specify

_____

_____

9. How do you feel the composted product performed in your product line?

beneficial

made no difference

not beneficial

10. What features are important to you in a composted product. Rate from 1 (most important) to 9 (least important)

___ *cost/price*

___ *nutritional benefit*

___ *product consistency*

___ *ability to aerate*

___ *reliability of the supplier*

___ *disease resistance*

___ *ease of use*

___ *storage ability*

___ *ability to increase water uptake*

11. What price are you currently paying (in 2000/2001) for soil amendments per cubic yard/meter? Please pick one.

$0

$1-5

$6-10

$11-15

$16-20

more.

12. If applicable, how much composted product did you use in 2000 on a weekly **OR** yearly basis?

Type of compost	*cubic yards per week*	*cubic yards per year*
biosolids		
bark		
manure		
mushroom compost		
*other*_____		

13. What do you anticipate your use of composted product to be in 2001?

none

same volume

less volume

greater volume

14. What factors would affect your decision to use composted products in the future?

transportation costs

prefer other soil amendments

cost of the compost

other….please specify _____