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# The University of Georgia

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**Center for Agribusiness and Economic Development**

**College of Agricultural and Environmental Sciences**

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## **Consumers Preferences for Bagged Compost Products**

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**DRAFT**



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## **Introduction:**

There is growing interest by folks involved in the poultry business for ways to dispose of their poultry litter. New regulations and urban and suburban sprawl have created a situation where some producers are having a difficult time disposing of their litter. As a result, folks are looking at ways they can process and package their litter to market to homeowners as well as lawn and garden businesses.

It is important to package products in a manner that are consistent with the needs of consumers. In order to help producers market their products to homeowners and lawn and garden businesses a study was conducted among Tennessee Master Gardeners to determine what they are looking for in a bagged soil amendment product. These results are from a small sample of Master Gardeners in Metropolitan areas of Tennessee and should be used as a guideline for developing a bagged soil amendment product.

## **Study Findings:**

While only 48% of the gardeners purchased compost during the past year, their planned usage is expected to increase. Generally, gardeners plan to increase their use of compost in order to improve their soil and their overall gardening. Large chain stores with home and garden centers were the most frequently mentioned outlets for purchasing compost. However, two of the top five outlets were local lawn and garden shops and nurseries.

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### **Packaging**

- ✓ Use a 25 - 30 pound bag
- ✓ Use a “biodegradable bag”
- ✓ Use a “re-closable bag” capable of initially being heat-sealed at bagging

### **Labeling**

- ✓ List minimum weight and volume of contents on bag
- ✓ Highlight “biodegradable bag” to set apart from others
- ✓ Highlight “re-closable bag” to set apart from others
- ✓ Print directly on bags
- ✓ Use some type of graphic/design on bag that is consistent with product image, use and local-environmental friendly theme
- ✓ Use some type of graphic/design on bag to set apart from others
- ✓ Use term “organic” and promote “natural” features of the product
- ✓ List ingredients on bag as “made from organic ingredients, wood chips and poultry wastes”
- ✓ Consider listing rates on bag (1/3 to 1/4 of compost to soil by volume)
- ✓ Try to offer a “positive” slant to the odor issue
- ✓ Promote product as a soil conditioner
- ✓ List soil conditioner uses on bag: “top-dress plant beds, improve soil structure,

- ✓ improve soil quality”
- ✓ General benefits of soil conditioners are: “can improve water & nutrient-holding capacity of soil, may enhance micro-organism and earthworm activity, can improve soil structure by increasing water retention and aeration, restore soil integrity, free of weed and harmful impurities”

## DETAILED RESULTS OF MASTER GARDENER SURVEY

To better understand the perceptions and preferences of gardeners, the *Agricultural Development Center* surveyed 67 Master Gardeners in Tennessee to determine their thoughts and opinions on animal waste compost. The survey consisted of 29 questions involving product packaging, product labeling and product characteristics. The results of the survey provide significant insight into the compost product consumer via Master Gardeners.

**Packaging - -** The first series of questions addressed package size, type and color. The results of the survey were consistent with information obtained earlier, in that a smaller bag, preferably 25-30 pounds, is perceived to be the most convenient. However, the type of bag “preferred” by the gardeners would be one that is biodegradable and reclosable.<sup>1</sup> There appears to be no distinct preference between a clear or white bag color. However, a black bag was the least preferred of the listed colors. The color issue was reconfirmed by a later question addressing the value of being able to see the compost in the bag. Forty-three percent (43%) of the respondents indicated that being able to see the product was important, while a slightly higher percentage of the respondents (46%) indicated it was not important. Given these results, either a clear or white bag seems to be acceptable.

Based on the results of the gardeners surveyed, the most desirable bag would be non-black, biodegradable, reclosable and weigh between 25 to 30 pounds. There is no data to suggest that having a biodegradable and reclosable bag would increase sales; however, a bag with these characteristics would definitely differentiate the product from its competitors. The biodegradable characteristic would add to and be consistent with the idea of helping the environment via recycling waste products and using and only using environmentally friendly products.

**Product Labeling - -** It appears to be very important for a compost product to have nutritional information. The survey results suggest that more than half of the respondents would not purchase a compost product that did not have nutrient content information. Only 3% of the sample indicated that lack of nutrient content information would have no effect on their decision to purchase a compost product. Based on the survey results, lack of nutrient content information could possibly hamper sales. The respondents indicated they need nutrient information to effectively use and apply the compost, as well as to evaluate its soil improvement potential. People want to know what they are buying and not including the compost’s nutrient content information may be perceived by consumers as “hiding something” or as being inconsistent.

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<sup>1</sup> When the bag characteristic preference question was asked, the issue of additional cost being associated with these characteristics was not considered.

Similar questions addressing the importance of nutrient content information on purchase decisions reconfirmed the importance of having nutrient content information on the product label. For example, if the respondents were evaluating two competing products that were identically priced, nutrient value (16%) and the product's smell or odor (10%) were the top two criteria identified as influencing a respondent's decision to purchase one product over the other. Consumers were shown three panels, each with different nutrient labels. The panel with the most detailed nutrient content information (58%) was preferred to the panel listing only N-P-K (31%).

The study results indicate that the product needs to contain basic nutrient content information (N-P-K) before consumers would even consider purchasing it. Nutrient information is used by the gardeners to evaluate the product's usefulness and benefits relative to competing products. The absence of nutrient content information does not allow the user to evaluate the product's potential uses and benefits and may actually give a negative perception of the product as consumers assume the worst and think that the producer is "trying to hide something."

**Educational Information** - - Educational material is perceived by the respondents as being an important item on the product's label or package. Potential consumers need to be educated on how to use the product, application rates and procedures and the benefits derived from using the compost product. However, in addition to including basic application rates, procedures and benefits on the actual compost package, it may be good to develop a "display" to accompany the individual compost package. The product display should have two positive effects. The first is to attract consumer attention to the product and the second is to provide more detailed educational information to consumers on product usage and benefits.

**Consumer Perceptions of Organic and Natural Compost** - - A large part of successfully marketing a product is to position the product in the market place to satisfy consumer needs. A series of questions were asked to gauge the perception of compost, organic and natural products. This information can be used to more effectively position an organic compost product in the market place.

The term compost conjures a variety of "images." However, when the responses are analyzed and categorized, "compost" is most associated with soil improvement and plant and animal waste.

A similar set of questions were asked to determine consumer perceptions of the terms "organic" and "natural." It was interesting that the respondents described "organic" as being a natural product but when asked what "natural" compost means, the respondents were unable to provide a clear definition except to describe it as non-synthetic or man-made. The term organic was overwhelmingly perceived as being all natural, no chemicals or lacking man-made products or ingredients. The term "natural," on the other hand had, a different response and appears to have a less consistent meaning than organic.

The respondents were provided a scenario in which they were asked to choose between two identical products in terms of packaging, price and nutrient content. The only difference between the two products was that one product was labeled organic and the other product was labeled natural. The respondents were significantly more likely to choose the organic product (46%) over the natural product (5%) by about 9:1.

The term organic appears to represent a more consistent image to gardeners than does the term natural. Consumers are more likely to buy a product “if they know what they are getting” and using the term organic appears to do a better job of describing compost products than the term natural.

**General Compost Usage** - - More than one half (52%) of the gardeners indicated they did not use any compost over the past year. However, those who did use compost over the last year used between 5 and 1500 pounds. These respondents indicated that on average, about 44% of all the soil amendments they used consisted of compost. This number is encouraging in that among compost users, a significant portion of soil amendment usage is compost.

Compost usage among the gardeners who purchased compost in the past year is expected to increase. Over the next year, 27% of the respondents indicated they plan to increase their use of compost, while 16% indicated they will decrease their use of compost. The remaining 57% were unsure about future compost usage. The main reasons given for increasing the use of compost were to improve the soil, improve gardening and plans for making and using their own compost.

Without a price reduction, there appears to be very little a compost producer can do to increase the use of compost. However, if consumers can be educated on the benefits of using the product, and its environmental friendliness in relation to synthesized soil amendments can be emphasized, consumers may be enticed to increase their usage of the product without a price reduction.

**Compost Outlets** - - Overall, the five most frequently mentioned outlets for finding compost are dominated by the large chain home improvement and discount stores with gardening centers, like Home Depot, Lowes and Wal-Mart. However, it was encouraging to find that two of the top five outlets are not large chain home improvement and discount stores. Local lawn and garden centers were the second most frequently mentioned outlet and local nurseries were mentioned fifth most often. This information is valuable because it suggests that a significant number of people do shop outlets besides the large chain stores for gardening supplies.

**Compost Concerns/Problems** - - Product smell/odor and lack of educational material were the two primary concerns or problems the gardeners most associated with compost. Another issue that was identified is the issue of product contents and purity. The respondents were asked whether the term “poultry mortality” should be included on the product label. The results were identical with 47% responding yes and 47% responding no. Thus, the data do not support the inclusion or exclusion of “poultry mortality” in the product ingredient list.

The issue of educating consumers on compost's use, application and benefits should be addressed on the label and display, if used. The biggest consumer obstacle, besides education, appears to be the product's odor. The odor issue must be addressed to generate repeat business. The odor problem, if at all possible, should be addressed in a manner that still allows the finished compost product to be labeled organic, or at least contain the word organic in its name. The results of the survey indicate that organic compost is preferred over natural compost given that price, nutrient content and packaging are consistent.

**Summary**--A survey of 67 "Master Gardeners" revealed that a 25 - 30 pound, biodegradable, re-closable, clear or white bag of compost is preferred. Lack of odor and inclusion of nutrient information is preferred as well. Information concerning product use and benefits is important to the gardeners. The term "organic" (as it pertains to compost) conveys a more consistent and positive image when compared to the term "natural." Compost is perceived as a product for soil improvement derived from plant and animal wastes containing some nutrient value.

**Overall Study Considerations** - - The results of this study should be used to provide general guidelines for redesigning the current bag and marketing the finished compost product. However, due to the nature of the sample, there is some inherent error associated with the results. The results should provide general information pertaining to gardeners' preferences, opinions and concerns.

### **Master Gardner Survey Results**

1. What do you think would be the most convenient weight for a compost product? By weight, I mean how many pounds do you think a compost product should be? Please check the appropriate box below.

<b>Most Convenient Weight</b>	
<b>Pounds</b>	<b>Percent Mention</b>
40	25%
30	30%
25	39%
15	6%

2. Now, thinking in terms of volume or cubic feet, how many cubic feet do you think would be the most convenient for a compost product to be packaged?

<b>Most Convenient Size in Cubic Feet</b>	
<b>Cubic Ft.</b>	<b>Percent Mention</b>
3.0	2%
2.0	46%
1.5	32%
1.0	21%

3. There are many types of bags that can be used in compost packaging. However, some “bag” characteristics are preferred over others. Please review the following list of bag characteristics and indicate which one or ones you think would be most valued by consumers. Please check all that apply.

<b>Bag Characteristic Preferences</b>	
<b>Characteristic</b>	<b>Percent Mention</b>
Biodegradable Bag	63%
Resealable Bag	42%
Clear	21%
White	18%
Breathable	15%
No-Slip (skid-prof)	13%
Plastic (polyethylene)	13%
Black	6%
Fade-Resistant	6%
Burlap	4%

4. Is it important for consumers to actually see the product inside the bag?

**Yes - 43%          No - 46%          Don't Know - 9%**

5. Which of the following bag colors do you think would be the most appropriate for compost products:

<b>Bag Color Appropriateness</b>	
<b>Color</b>	<b>Percent Mention</b>
Clear	32%
White	28%
No Preference	28%
Black	12%

6. Below is a list of the compost product nutrients. Think about what nutrients, if any, should be included on the compost product label? Please check all of the nutrients that you think should be included on the label.

**Master Gardeners Nutrients List Preferences**

<b>Nutrient</b>	<b>Percent Mentioned</b>
Nitrogen	90%
Phosphorus	88%
Potassium	85%
Iron	57%
Magnesium	55%
Calcium	52%
Sulfur	49%
Manganese	43%
Sodium	40%
Copper	36%
Zinc	34%
Aluminum	34%

7. Now, imagine that you are going to purchase a compost product and you have narrowed your decision down to two identically priced products. Given that price is not a factor, what criteria would you use to pick a compost product? (Include all criteria you would use).

**Criteria Used to Differentiate Between Competing Compost Products**

<b>Response</b>	<b>Percent Mention</b>
nutrient value	16%
smell	10%
composition	9%
instructions/hints/applications	7%
product appearance	7%
organic certified	6%
ease of use	4%
package appearance	4%
texture	4%
weight	4%
package size	3%
consistency	3%
name recognition/word of mouth	3%
clean	3%
easy to find	2%
recycle material	2%
shelf life	2%
safety	2%

8. Now, imaging that you are about to purchase a package of compost and noticed that the bag did not have any nutrient content information. What, if any, impact would the lack of nutrient content information have on your decision to purchase the compost? Would you say the absence of nutrient content would:

<b>Response</b>	<b>Percent Mention</b>
Would Not purchase	52%
Some effect	45%
No Effect	3%

9. Four nutrient panels are presented below. Which nutrient panel do you think would be most useful to compost consumers?

<b>Panel</b>	<b>Percent Mention</b>
1	58%
2	31%
3	4%
4	6%

#1	Nitrogen	1.47
	Phosphorus	1.97
	Potassium	1.81
	Sulfur	0.48
	Magnesium	0.47
	Calcium	8.69
	Sodium	4803
	Iron	803
	Aluminum	367
	Manganese	357
	Copper	37
	Zinc	506

#2	Nitrogen	1.47
	Phosphorus	1.97
	Potassium	1.81

#3	"No Nutrients Listed"	
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10. Do you think the absence of nutrient content information would keep people from purchasing the compost product?

<b>Response</b>	<b>Nutrient Content Information Absence Deter Compost Purchase Percent Mention</b>
Yes	75%
No	9%
DK	16%

**NOTE: If you answered yes in question #10, please answer Question #11. Otherwise please skip to question #12.**

11. Please provide the reason or reasons why you think the absence of nutrient content information would keep people from purchasing the compost product? (Please include all the reasons that come to mind).

<b>Response</b>	<b>Reasons Lack Nutrient Content May Keep People From Purchasing Compost Percent Mention</b>
information for application	50%
want to know what they are buying	33%
hiding something	7%
implies inconsistency	4%
implies inferior product	4%
organic gardening concerns	2%

12. Now, think about product labeling. Again, keeping in mind this is a compost product, what type of graphic or photo do you think would influence consumers to purchase the product? (Please check all that apply).

Farm Scene	32%
Flower	28%
Chicken	13%
Tree	10%
flower/vegetable/herb garden	4%
veggies	3%
lawn	2%
Various trees, flowers shrubs, veggies	2%
scene with children and pets	1%
quality graphic and color	1%
landscape	1%
wildlife	1%
simple pattern logo	1%
not important	1%

13. Do you think the label should contain educational information. By educational information I mean information related to product uses, benefits and or application rates and procedures?

**Educational Material Included on Label**

<u>Response</u>	<u>Percent Mention</u>
Yes	95%
No	2%
Don't Know	3%

**NOTE:** If you answered yes in question #13, answer Question #14. Otherwise please skip to question #15.

14. Please rate the importance of the following educational material being included on the compost product's label. Please use a four point scale where 1 = not at all important, 2 = somewhat unimportant, 3 = somewhat important, 4 = very important.

**Importance of Educational Material Included on Product Label**

<u>Educational Material</u>	<u>Percent "very Important"</u>	<u>Mean Level of Importance</u>
Suggested application rates	81%	3.73
Suggested application procedures	69%	3.52
Potential benefits derived from using the product	58%	3.44
Potential uses for the product	58%	3.39
Benefits of this product over traditional soil amendments	48%	3.26

15. When you think of “compost”, what is the first thing that comes to mind?

**Compost top-of -Mind Response**

<b>Response</b>	<b>Percent Mention</b>
soil improvement/amendment	21%
grass clippings and leaves plant waste	14%
decomposed organic material	9%
animal manure	7%
fertilizer	6%
natural product	6%
moisture retention	6%
compost heap at home	6%
mulch	4%
rich growing medium	3%
humus	3%
landscaping	3%
recycled waste	3%
heat protection	1%
no animal products	1%
sustainable system	1%
garden	1%
top dressing	1%
worms	1%
dirt	1%

16. What characteristics of compost do you think should be used to market the product?

**Marketable Characteristics of Compost**

<b>Response</b>	<b>Percent Mention</b>
soil enrichment	21%
nutrients	11%
benefits	9%
no smell	9%
natural	9%
organic	8%
recycling	6%
user friendly	5%
non-toxic	3%
color	3%
consistency	3%
source	3%
high crop yield	2%
dry	2%
better flowers	2%
smart	2%
fertilizer	2%
cost	2%
stewardship	2%

17. What are the benefits of using composting materials?

<b>Benefits of Using Compost</b>	
<b>Response</b>	<b>Percent Mention</b>
soil improvement/conditioning/amendments	45%
recycling	11%
bigger, healthier more productive plants	9%
moisture retention	7%
pure natural	5%
loosen soil	4%
fewer weeds	4%
no chemicals	4%
good economics	1%
good waste disposal	1%
slow release of nutrients	1%
faster results	1%
healthier food	1%
improve drainage	1%
worms	1%
organic	1%

18. When you hear the term “organic” as it relates to soil amendments, what is the first thing that comes to mind?

<b>Top-of-Mind Response to “Organic”</b>	
<b>Response</b>	<b>Percent Mention</b>
all natural/no chemicals	60%
decomposing plant/animal	8%
pure - no toxins	8%
no artificial nutrients	2%
no antibiotics	2%
no disease	2%
not harmful to soil	2%
no hormones	2%
compost	2%
slow release nitrogen	2%
worms	2%
weed free	2%
not pelleted	2%
manure	2%
improve soil	2%
nitrogen	2%

19. When you hear the term “natural” as it relates to soil amendments, what is the first thing that comes to mind?

**Top-of-Mind Response to “Natural”**

<b>Response</b>	<b>Percent Mention</b>
not man made/natural/non-synthetic	21%
no chemicals	15%
organic	12%
meaningless	10%
made from things once alive	8%
animal manure	6%
compost	6%
no toxins	4%
safe	4%
found already in the soil	2%
good for earth	2%
pure	2%
non harmful to the environment	2%
positive image	2%
part of nature	2%
not necessarily organic	2%
making plants grow	2%

20. Now, imagine that you are about to purchase a package of compost and you have narrowed your decision down to two identical products in terms of packaging, price and nutrient content. The only difference in the two products is one is organic and one is natural. Which one would you choose?

**Organic or Natural Compost Preference**

<b>Response</b>	<b>Percent Mention</b>
Organic	46%
Natural	5%
Both organic/natural	3%
No preference	15%
Don't know	31%

21. How important do you think being associated with “Made in Tennessee” is to marketing a compost product? Please use a four point scale to indicate the level of importance.

<b>Importance of “Made in Tennessee” in Marketing Compost</b>	
<b>Rating</b>	<b>Percent Mention</b>
Very important	24%
Somewhat important	41%
Somewhat unimportant	17%
Not at all important	17%
Mean level of Importance	<b>2.72</b>

22. Thinking back over the past year, approximately how many pounds of compost did you buy?

<b>Pounds of Compost Used Last Year</b>	
<b>Pounds used</b>	<b>Percent Mention</b>
0 (none)	52%
5	2%
20	6%
25	2%
40	4%
80	4%
100	8%
120	2%
150	2%
160	2%
170	2%
200	4%
250	2%
300	2%
600	2%
1000	2%
1500	2%

**Note: If you did not purchase any compost products over the past year please skip to question #25.**

23. Again, thinking back over the past year and all of your soil amendments purchases, approximately what percentage of last years soil amendment purchases were compost products?

<b>Percentage of Compost Use in Total Soil Amendment Use</b>	
Mean	44.36%
Median	30%
Mode	50%

24. Do you plan to increase, decrease or use the same amount of compost over the next year?

**Change in Compost Usage Over the Next Year**

<b>Change</b>	<b>Percent Mention</b>
Increase	27%
Decrease	16%
Don't Know or Did not answer	57%

25. Why do you plan to increase or decrease your usage of compost over the next year?  
(Please list all responses that come to mind).

**Change in Compost Usage Over the Next Year**

<b>Response</b>	<b>Percent Mention</b>
improve soil productivity/enhancement/amendments	23%
adding more land	17%
improve gardening	13%
make own/more composting	13%
moisture retention	7%
organic	7%
better productivity	3%
easier weeding	3%
slow release nitrogen	3%
fertilize	3%
mulch	3%
use less chemicals	3%

26. What, if any, could a compost producer do to get you to increase your usage of compost over the next year?

<b>Ways to Increase Compost Use</b>	
<b>Response</b>	<b>Percent Mention</b>
nothing	29%
price (lower, cheap)	23%
advertise benefits	11%
free samples	6%
easier to spread	6%
educational material/education	6%
include certified test data	3%
ease of transport	3%
organic product	3%
don't know	3%
delivery to house	3%
insure quality	3%
widely available	3%

27. If you were going to purchase a compost product, where would you look or go? (Please list all locations or places that come to mind).

**Where Respondents Would look or Go to Purchase Compost**

<b>Response</b>	<b>Percent Mention</b>
Home Depot	24%
local lawn and garden store	19%
Lowe's	13%
Wal-mart	10%
local nursery	9%
K-Mart	8%
Co-op	3%
greenhouse supplier	3%
flower power	2%
composting facility	1%
Mail order	1%
Lesco	1%
local hardware store	1%
County Agent	1%
Acme Garden supply	1%
ask master gardeners	1%
Feed Mill	1%
seed stores	1%
flower markets	1%
local home supply	1%
discount store	1%

28. What do you think are the primary problems and concerns most buyers have related to compost?

**Primary Problems and Concerns with Compost**

<b>Response</b>	<b>Percent Mention</b>
smell	20%
education on benefits and applications	17%
contents/purity	11%
weight/size	8%
is it compost	8%
sanitation	8%
nutrient value	5%
cost	5%
safety	3%
don't know	3%
bulk delivery	2%
appearance	2%
how to get enough	2%
sludge	2%
animal products	2%

convenience	2%
labor to put it down	2%
weed/seeds	2%
disease/pathogens	2%

29. Do you think “poultry mortalities” should be listed as an ingredient of the compost material?

<b>Response</b>	<b>Percent Mention</b>
No	47%
yes	47%
dk	6%

### Demographics

D1. What is your gender?

<b>Gender</b>	
Male	46%
Female	46%
Refused	8%

D2. What is your age? (Please specify in number of years) \_\_\_\_\_

<b>Age</b>	<b>Percent Mention</b>
30 to 40	19%
41 to 50	22%
51 to 60	23%
61 to 70	19%
71+	8%
Refused	9%
Mean	53.24

D3. Please use the following to best describe your primary residence setting.

<b>Residence</b>	
Suburban	60%
City	15%
Rural	9%
Small Town	6%
NA	9%

D4. Please estimate your total household income (before taxes) for 1998.

Below \$15,000	2%
\$15,000 to \$24,999	5%
\$25,000 to \$34,999	5%
\$35,000 to \$49,999	17%
\$50,000 to \$74,999	33%
\$75,000 to \$100,000	8%
Above \$100,000	14%
	16%
Mean	\$55,615.00

D5. Please indicate the highest level of education you have attained.

**Educational Attainment**

High School	8%
Some College	8%
Technical College	6%
College Degree	31%
Post Graduate	17%
Don't Know/ Refused	31%

# The Center for Agribusiness and Economic Development



The Center for Agribusiness and Economic Development is a unit of the College of Agricultural and Environmental Sciences of the University of Georgia, combining the missions of research and extension. The Center has among its objectives:

To provide feasibility and other short term studies for current or potential Georgia agribusiness firms and/or emerging food and fiber industries.

To provide agricultural, natural resource, and demographic data for private and public decision makers.

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**Market Analysis: MA-05-07**

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**Dr. Scott Angle, Dean & Director**