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Results: Middle Tennessee Farm Survey on Surplus Fruits and Vegetables and Produce Donation

Natural Resources Defense Council

Second Harvest Food Bank of Middle Tennessee

The Nashville Food Project

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Overview

Up to 40% of our food goes to waste every year in the U.S. In particular, an astounding 20 billion pounds of produce never make it off the farm on an annual basis. This is all the more ironic because more than 42 million people lack a secure supply of food to their table and often have particular difficulty accessing fresh fruits and vegetables.

To better understand on-farm losses of fruits and vegetables in Middle Tennessee, the Natural Resources Defense Council (NRDC) partnered with Second Harvest Food Bank of Middle Tennessee (food bank) and the Nashville Food Project to survey area farmers. The survey aimed to quantify and clarify the causes of these losses, identify barriers to sale and donation of these products, and assess farmers' interest in expanding donation and gleaning opportunities. Key findings include:

- Just over half of respondents estimate that less than 10 percent of their production goes unsold in a typical year. At the other end of the spectrum, about one-sixth of survey respondents estimated that 20-29 percent of their crop typically goes unsold.
- Adverse market conditions and cosmetic imperfections of fruits and vegetables were the most common reasons that product did not make it to market.
- The reported incidence of cosmetic imperfections is highest for zucchini/summer squash, winter squash, tomatoes, sweet potatoes and peppers.
- Growers report that, of their unsold produce, roughly 40% is donated while nearly a quarter is processed for personal use. Much of the balance is used for animal feed, plowed under or composted. Roughly 1% is gleaned.
- 54% of respondents characterized themselves as being "very interested" in donating produce, with an additional 32% saying they are "moderately interested". A more modest 17% indicate being "very interested" in having unharvested produce gleaned, with an additional 44% indicating "moderate" interest. Given that roughly 40% and 1% of unsold produce is donated or gleaned, respectively, this suggests significant room for growth in both arenas.
- Challenges with transporting product to a non-profit agency, the cost of labor to pick-and-pack produce and packaging costs were identified as the biggest barriers to food donation.
- 65% said that modest per-pound payments to partially compensate them for the costs associated with donating produce would make donation more appealing.
- Only a small minority of respondents were aware of the federal tax incentives that are now available to farms of all sizes. Further outreach to farmers about these tax incentives could be helpful in spurring additional donations.

The Nashville Food Waste Initiative

NRDC, a national environmental organization, is developing local and national strategies to prevent, recover, and recycle wasted food along the supply chain from farms to our tables. Through the Nashville Food Waste Initiative, NRDC is working with a variety of local partners to develop strategies and practical tools for food waste reduction that can serve as models for cities around the country.

Methods

NRDC coordinated with Second Harvest Food Bank of Middle Tennessee and the Nashville Food Project to develop an electronic survey instrument to gather growers' input. Several responses were gathered through phone interviews and paper copies of the survey as well. We enlisted the help of farmers' markets, extension agents, farmer affinity groups, nonprofit organizations, and the food bank to disseminate the survey tool. Respondents were offered a stipend in thanks for their time and effort. We received a total of 25 responses. Not all respondents answered all questions.

Given the small sample size and local characteristics, the results of this survey should not be assumed to be representative of the state as a whole or other regions of the U.S.

Results

Respondents included farmers from 14 Tennessee counties (mainly in middle Tennessee) and three counties in Kentucky as shown below.

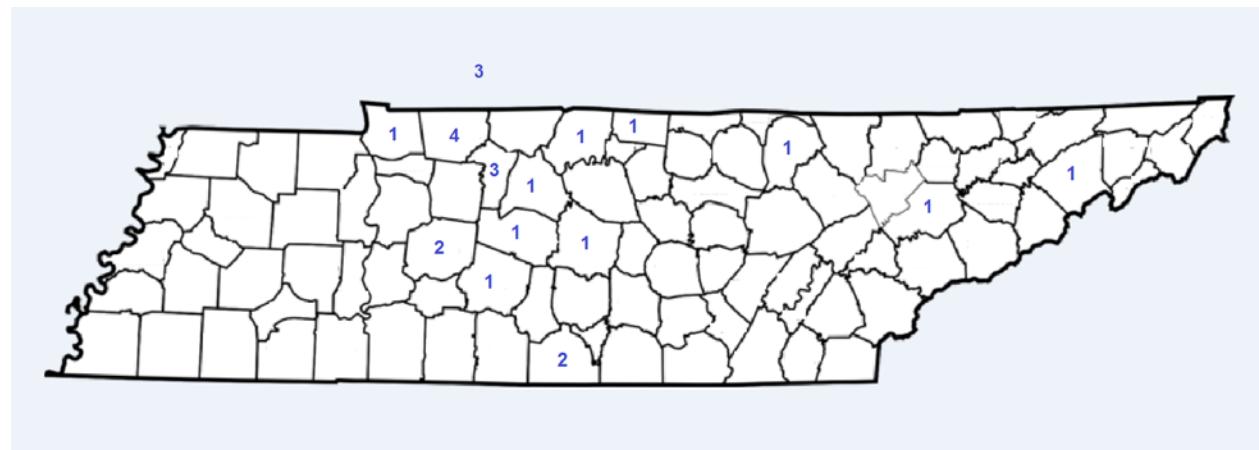


Figure 1 Survey Respondents by County

1. How many acres do you typically have in vegetable and/or fruit production each year?

Respondents' farms range in size up to four hundred acres, with most (60%) having less than 4 acres in production.

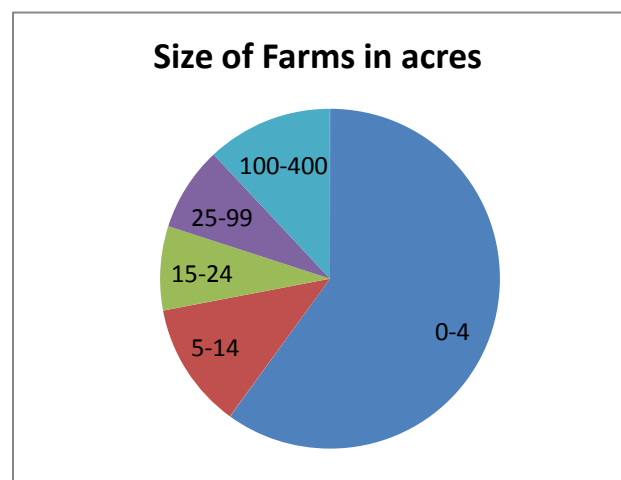


Figure 2 Survey responses by acreage

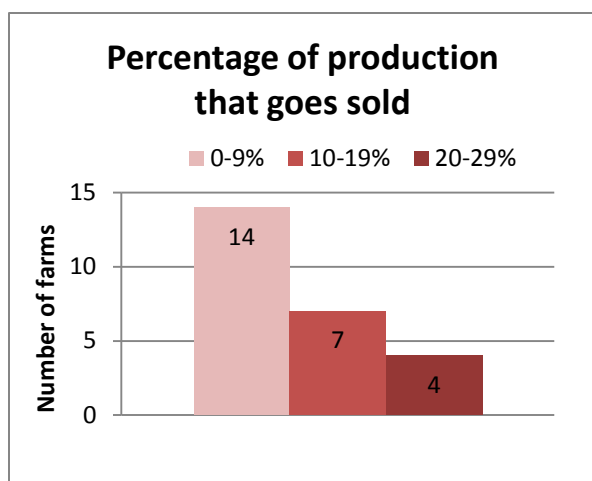


Figure 3 Survey responses when asked to estimate how much of their product typically goes unsold.

3. Of the product that you are not able to sell, what percentage of your mature crop do you believe does not go to human consumption for the following reasons in a typical year?

As shown at right, “market conditions” (e.g. lack of a viable market or low prices) was the most commonly cited reason that product went unsold, followed by “cosmetic imperfections”. Labor shortages at harvest time and short product shelf-life were contributing factors as well.

While growers reported that about one-third of their unsold crop went unsold due to adverse

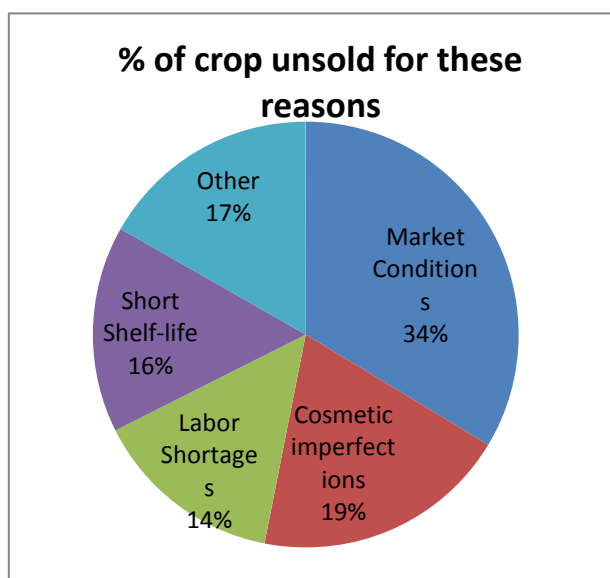


Figure 4 Survey responses when asked to assign percentages to reasons why product goes unsold.

market conditions, experiences with market difficulties was reported by more than 70% of respondents. Two-thirds reported crops sometimes going unsold due to cosmetic imperfections. Fewer respondents, 60 percent, indicated they were unable to sell their product because of short shelf life. And two in five said labor shortages at time of harvest have sometimes contributed to product going unsold.

Reasons crop does not go to human consumption	Growers who indicated some portion due to.
Market conditions	72%
Cosmetic imperfections	68%
Short shelf-life	60%
Labor shortages at time of harvest	40%
Other	28%

4. Please tell us about the 5 products that you most commonly have surpluses of:

The most commonly listed crops were tomatoes, squash, and kale, followed by sweet potatoes, peppers, berries, potatoes, and cucumbers.



Image "Nashville Farmers Market" by Rex Hammock under creative commons

5. What do you currently do with product that is suitable for human consumption but that you are unable to sell?

In aggregate, respondents reported donating more than one-quarter of unsaleable product without compensation and donating an additional 12% with some degree of compensation. Nearly one-quarter is processed for personal use. Most of the balance is reported to be fed to animals, left in the field or composted. Only 1% of unsold product was reported as having been gleaned, and sale to processors is also very limited. None of the growers reported sending product to landfill or chose the "other" option.

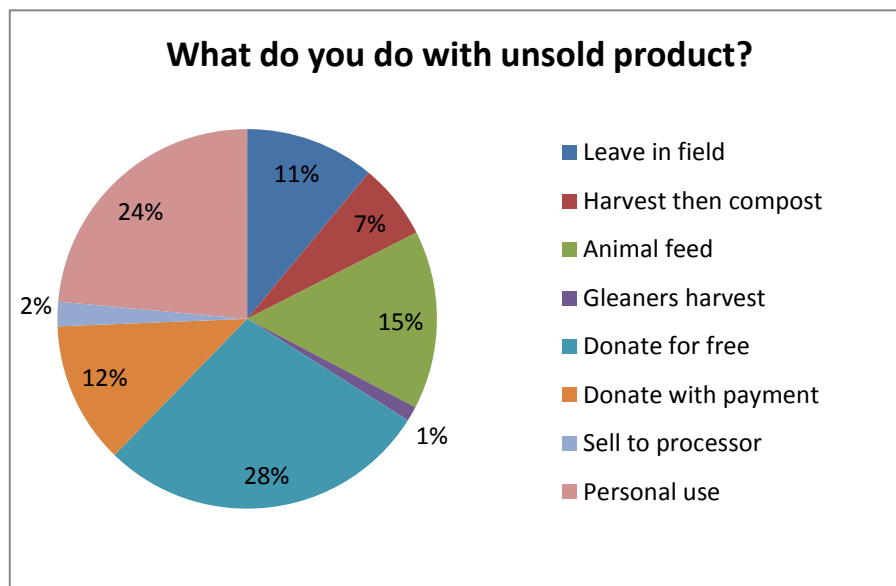


Figure 5 Survey responses when asked to assign percentages to actions performed with product that is unable to be sold.

Some uses of unsold product are more common than others. The following table shows the percentage of respondents who report the following outcomes for these products, at least some of the time. This suggests that at least 60% donate unsold produce at least some of the time.

Uses of unsold products	Respondents
Process for personal use	68%
Donate for free	60%
Leave in field	56%
Animal feed	52%
Harvest then compost	40%
Provide to a food bank/pantry in exchange for a nominal per pound payment	24%
Have gleaners harvest	12%
Sell to a processor	4%
Send to landfill	0%
Other	0%



Image: Farmers Market" by Denise Mattox under creative commons

Now we would like to ask you, in particular, about products that are cosmetically imperfect. By that, we mean items that are fresh, undamaged, and suitable for human consumption, but that are too visibly flawed to meet minimum industry-accepted standards for cosmetic appearance (e.g. too large, too small, misshapen, miscolored, etc.).

6. In an average year, what percentage of your annual production would you say is cosmetically imperfect using the definition above? For each crop, please check off:

I don't produce this, 0-5%, 6-10%, 11 - 20%, 21 – 30%, 31 – 40%, More than 40%

We provided a chart of fruits and vegetables and asked each grower to indicate what percentage of their annual production for each crop is cosmetically imperfect in an average year using the provided definition. The number of farmers who reported growing each crop is shown next to the crop name (e.g. 13 growers reported growing alliums).

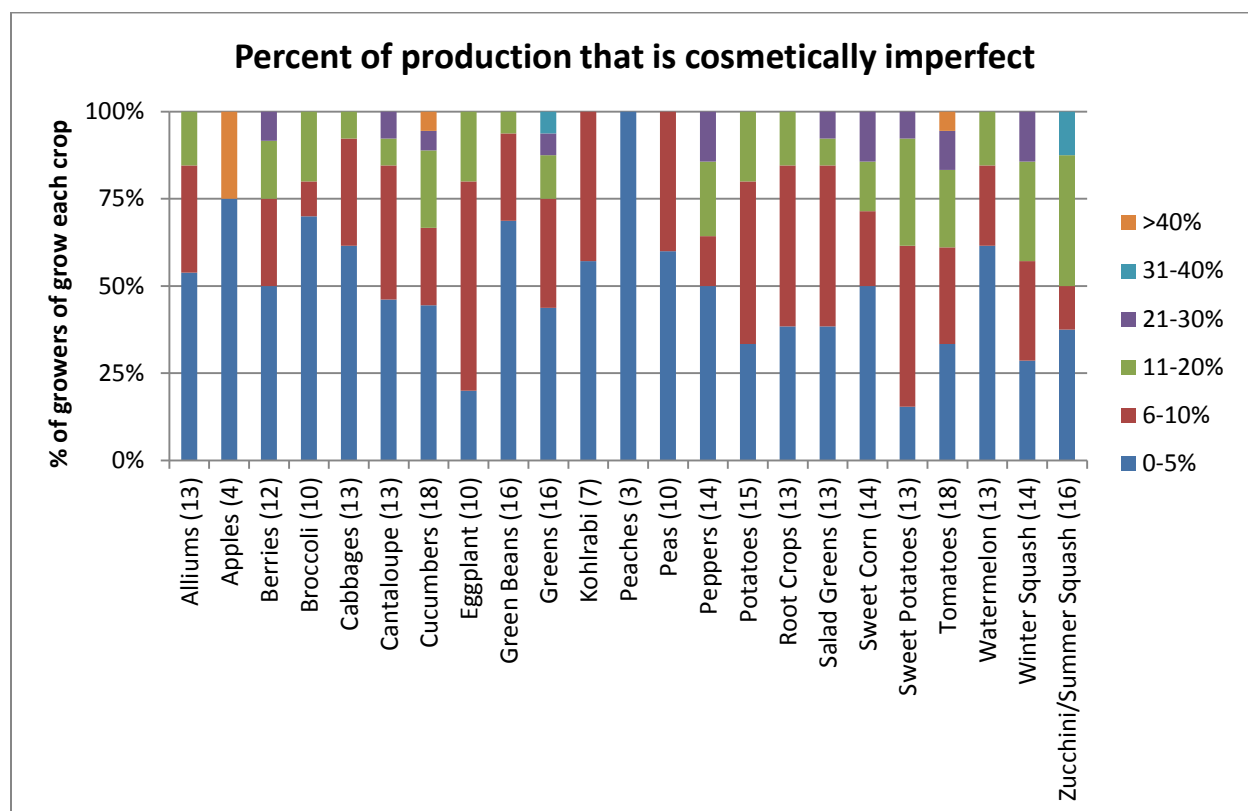


Figure 6 Survey responses when asked to indicate the range of product that is cosmetically imperfect.

For instance, slightly more than 50% of growers who grow alliums reported that 0-5% of their allium crop is typically cosmetically imperfect (shown in the blue bar above “alliums”). Products reported most frequently to have rates of cosmetic imperfection above 10% of production were zucchini/summer squash, winter squash, tomatoes, sweet potatoes and peppers.

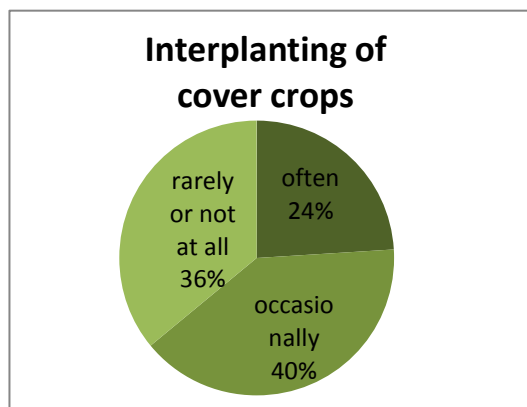


Figure 7 Survey responses regarding cover crops.

7. Do you sometimes interplant cover crops with food crops?

Crops like turnips, daikon radishes, kale and collards are sometimes planted either to break up soil or as cover crops. These edible crops may be left unharvested at the end of the season and may be a possibility for gleaning. Growers were asked if they interplant cover crops with food crops. 64% of responding farmers indicate that they either “occasionally” or “often” use this practice.

8. Overall, which description best fits you? (Please check one.)

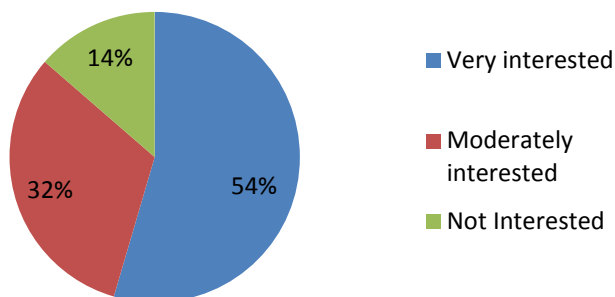
- I am very interested in donating unsold produce (or increasing my current donations)
- I am moderately interested in donating unsold produce (or increasing my current donations)
- I am not interested in donating

9. Where having volunteers glean at your farm is concerned, please check one:

- I am very interested in opportunities for gleaning on my farm
- I am moderately interested in opportunities for gleaning on my farm
- I am not interested in gleaning

We asked growers about their interest in donating unsold produce or increasing their current donations. Half were “very interested”; one-third were “moderately interested”; and the remainder were “not interested”. Given that 86% express interest in donating but only 40% of respondents’ unsold crop is donated, there appears to be ample room to further crease donations.

Interest in donating unsold produce



Interest in volunteer gleaners harvesting produce

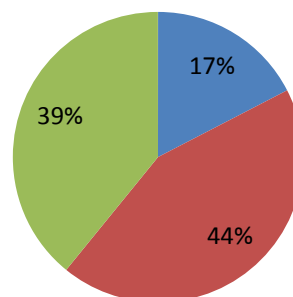


Figure 8 & 9 Survey responses when asked about interest in donating or gleaning surplus produce.

Overall, survey respondents were less interested in having gleaners harvest at their farm. Less than one-fifth said they were “very interested”, while 44% reported moderate interest. However, one grower

commented that labor was their biggest issue, and gleaning in the fields would be helpful to their farm. Another said they need help clearing the field and offered to provide both product and monetary compensation if gleaners would remove the entire plant in addition to the edible greens, for example. While gleaning is viewed less enthusiastically than donating harvested product, 61% of respondents indicated some level of interest. By comparison, only 1% of unsold product was reported as being gleaned. This suggests that gleaning has potential for growth and can be a good fit for specific farms.

10. Even if you are interested in donating surplus produce, various barriers can sometimes stand in the way. Please identify the top three barriers you experience when thinking about donating unsold fruits or vegetables:

- Expenses for packaging materials (boxes, totes)
- Labor costs associated with additional picking and packing
- Not enough storage space on my farm
- Nearby foodshelves have difficulty receiving fruits and vegetables
- Transporting the product to a food pantry
- We're just too busy at harvest time / we're not focused on making donations
- I'm not sure who to contact

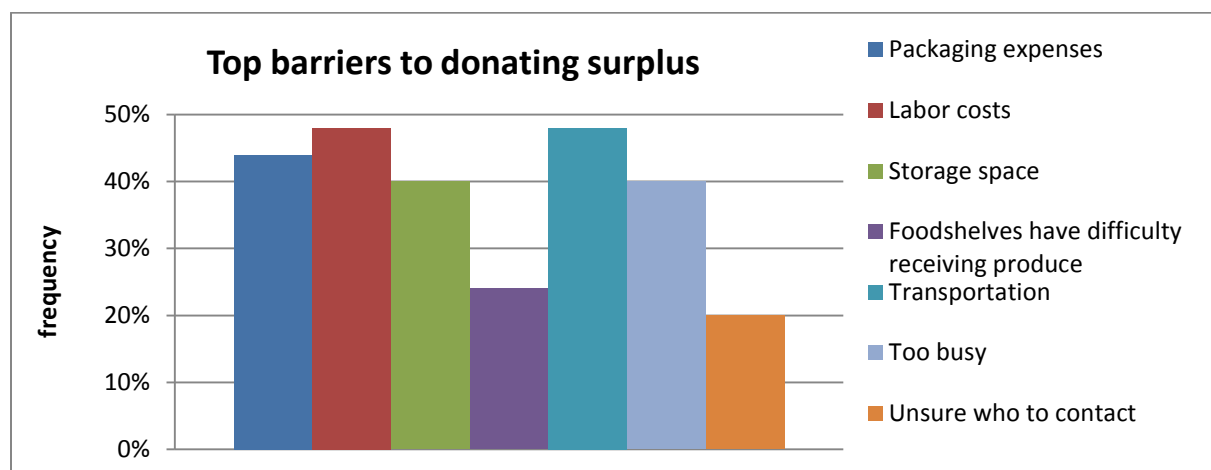


Figure 10 Survey responses when asked to select barriers experienced when thinking about donating unsold produce.

Nearly half (48%) of the respondents identified “labor costs associated with additional picking and packing” as a barrier, with a similar number identifying “transporting the product to a food pantry” as a top barrier to donation. Nearly as many (44%) indicated “expenses for packaging materials” as a barrier to donation. Nearly 40% reported “not enough storage space on the farm”, with an equal number saying they “are too busy at harvest time or are not focused on making food donations”. A quarter said that “nearby foodshelves have difficulty receiving fruits and vegetables” and 20% were “not sure who to contact” in order to arrange donation.

We provided space for growers to give more explanation about barriers they face to donation. Many emphasized the need for a convenient place to drop off produce or having someone pick up from the farm in a timely manner; others mentioned the farmers' markets as a good place to connect. One grower stressed the need to have someone consistently at the farmers' markets or to have notice in advance so that growers could bring their excess for donation when someone would be present to take it. Another grower suggested that if they knew what foods were needed prior to the growing season they would plan to overproduce with donation in mind. And one grower expressed uncertainty over what food banks wanted and trepidation over harvesting something that wouldn't be wanted. One respondent indicated that concern over liability if someone got sick from the product hindered donation.

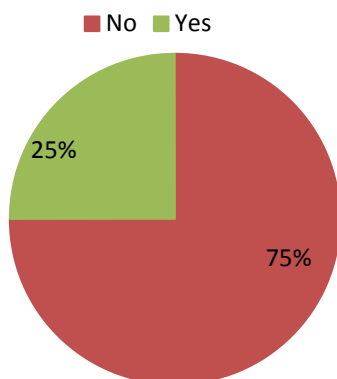
11. Are you aware that Second Harvest Food Bank of Middle Tennessee is sometimes able to offer a small payment for fruits and vegetables to farmers that donate? (e.g. 5 – 30 cents per pound)?

Yes /No

12. Would receiving 5 – 30 cents per pound make it easier or more appealing for you to donate?

We asked if growers are aware that Second Harvest Food Bank of Middle Tennessee is sometimes able to offer a small payment for fruits and vegetables to farmers that donate and if that payment would make it easier or more appealing for them to donate.

Aware food bank offers payment



Would a small payment make donation more appealing?

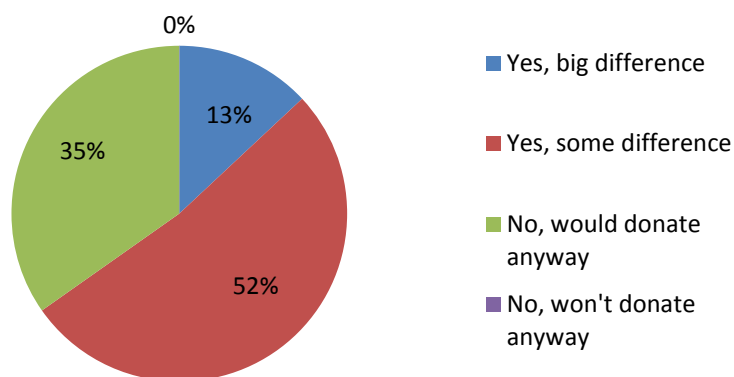


Figure 11 &12 Survey responses when asked about food bank payment for fruits and vegetables.

As shown in the preceding charts, only one-quarter of respondents were aware of the food bank's offer of compensation, but nearly two thirds reported that such payments would make "some difference" or a "big difference" to them when considering donation. This suggests that such payments can be a meaningful form of encouragement for farmers to donate surplus product. 35% indicated that they would donate even without this type of compensation. One of these respondents highlighted that an amount like 10 cents per pound is not a lot of money, but it at least covers some of the expense associate with donating the product, adding "it's a good thing." In contrast, another respondent stated

this amount of compensation was not high enough because it hardly covers the cost of packaging materials. One respondent commented that if a food bank was able to pick up donated food, this grower would rather write the food donation off on their taxes and let the food bank keep the payment for other uses. Another grower reiterated that transportation is a bigger challenge for them and the time and trouble that it takes to deliver might not make the payment worth it.

13. Are you aware that the U.S. Congress recently made small and mid-size farmers eligible for the same tax deductions that larger companies receive when donating surplus food? Yes / No.

To incentivize donation by farmers and other small businesses, the U.S. Congress extended food donation tax incentives to businesses of all sizes in late 2015 and made them permanent.ⁱ However, the existence of those tax incentives is not widely known among responding growers. Only 17% of growers reported being aware that these tax incentives are now available to them. Two of the 4 who responded in the positive were among the largest growers in our sample.

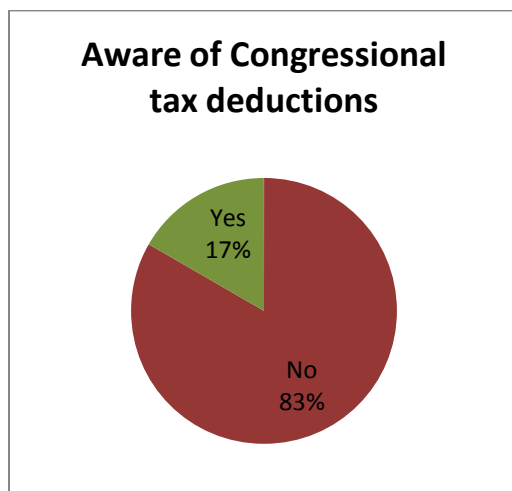


Figure 13 Survey responses regarding awareness of tax deductions

Conclusion

This survey of fruit and vegetable growers of Middle Tennessee and the surrounding area found a strong interest in donating surplus produce and the potential to expand donations further. While gleaning garners more limited interest, it appears that there is room for growth in this arena as well. However, a wide range of barriers currently inhibit donation – including transportation, the costs of packaging and of labor, as well as a shortage of storage space and time during the busy harvest season. Many growers find the possibility of receiving modest compensation for their donations to be compelling and information about newly available tax benefits may be motivating as well.

ⁱ Public Law No: 114-113 (12/18/2015)