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## GROWING GARDENS ONE TOMATO (TM) AT A TIME

*Coffin, D. , Extension Professor, UMaine Extension*

### ABSTRACT

University of Maine Cooperative Extension staff and Piscataquis County Extension Executive Committee have a goal of increasing the number of households that grow food gardens, consume food produced in their garden and recognize the UMaine Extension as a source of garden information. To achieve this goal Piscataquis County Extension adopted the One Tomato™ project. From 2014 to 2018 staff and volunteers distributed 1,794 tomato seedlings estimated to have yielded over \$14,700 worth of cherry tomatoes were grown and consumed by participants. (TM)

19% of those receiving the tomato seedling had never gardened before and for 25% of the participants, this was their first contact with UMaine Extension. In addition to meeting the initial goals by having people start a garden and consume home grown produce, this project has encouraged volunteers to become more involved in distribution of the seedlings and review of the project impacts.

### INTRODUCTION

Nationwide about a third of households grow a food garden (Butterfield, 2009). This includes fruit, berries, vegetable or herbs. Home gardeners spend about \$70 on their food garden and harvest about \$600 worth of food; tomatoes are the most popular vegetable (Butterfield, 2009). In 2014 the University of Maine Cooperative Extension staff and Executive Committee in Piscataquis County wanted to increase the number of households that grow food gardens, consume food produced in their garden and recognize the UMaine Extension as a source of garden information, so they adopted the One Tomato™ project. Starting a garden can be intimidating, but starting with one tomato plant seems less daunting. One cherry tomato seedling can be grown anywhere there is full sun: in a vegetable garden, in a flower garden, in a window box, in a pot or even in a bag. With regular watering and short season cultivars, harvesting will start mid-summer.

The One Tomato™ project was inspired by World War II Victory Gardens. In 1943 Eleanor Roosevelt turned the front lawn of the White House into a Victory Garden (Wikipedia contributors, 2019), and First Lady Michelle Obama revived the garden in 2009 (Lee, 2009). During the war 40% of the produce that was eaten came from Victory Gardens (Wikipedia contributors (2019). During Earth Day Celebration in 2009 in Sarnia, Ontario, Canada, One Tomato™ (<http://www.onetomato.org>) was started to encourage households to plant, grow and eat more vegetables, and give their extras to local food banks. The mission is to grow healthier communities, one tomato at a time.

### METHODS

UMaine Extension staff and executive committee in Piscataquis chose to give away locally purchased cherry tomato plants in late May to early June, after the chance of frost has passed.

#### Source and Cost of Seedlings

In 2014, 220 plants were purchased from one greenhouse producer. In 2015 a local high school horticulture class grew 100 plants, an executive committee member grew 100 plants and 130 were purchased from local greenhouse producers for a total of 330 plants. In 2016 an executive committee member grew 100 plants and 330 were purchased from local greenhouse producer for a total of 430 plants. In 2017 an executive committee member grew 420 plants. In 2018 one greenhouse producer grew 400 plants.

Average cost of the plants was \$0.50 when purchased from greenhouse producers. The executive committee member was supplied with growing materials and seeds for an average cost of \$0.50 for each plant. The most consistent sized plants came from the 2018 greenhouse producer and cost \$0.24 per plant.

#### Distribution and Initial Survey

UMaine Extension selected a variety of public events throughout the county to distribute tomato seedlings to individuals. Sites included four food cupboards, two WIC (Women Infants and Children) sites, a town festival, town election day and the Extension office. From 2014 to 2016, a total of 120 plants per year were also given to a prison garden that provides food for the food cupboards. In 2017, 36 plants were provided to a group housing provider. A total of 1,794 plants have been distributed in the area in the last five years; 1,638 to individual gardeners (271 plants were given to children of the gardener) and 156 to groups.

People were asked to complete a short initial survey about their gardening experiences and familiarity with UMaine Extension. Since some individuals were given multiple plants for their children to grow, only 1,267 initial surveys were collected. Extension staff, executive committee members, and Master Gardener Volunteers provided printed information about container gardening. Participants interested in receiving the county extension garden newsletter were added to the newsletter list. To increase the number of people new to the One Tomato™ project some of the seedling distribution venues were changed in 2018.

Figure 1 shows the display table at one of the 2018 new venues that was outside the Greenville town office on election day. This turned out to be a popular site, with the 100 plants allotted for this location distributed 3 hours before the polls closed.



**Figure 1.** Photo of outdoor display table with UMaine Extension banner and plants in back of truck

### Varieties Used

In 2014, only a generic red cherry tomato was offered, but by 2018, five varieties were offered. They included Sun Gold, Esterina, Jasper, Sunrise Sauce and Amish Paste. The tomato varieties were selected for their disease resistance, small fruit size and distinguishable fruit color (red, orange or yellow.)

### Communications

During the growing season, monthly garden e-newsletters were sent and periodic Facebook postings were made on the county Extension Facebook page by both staff and One Tomato™ participants. The posts carried information about the progress of plants.

### Harvest Survey

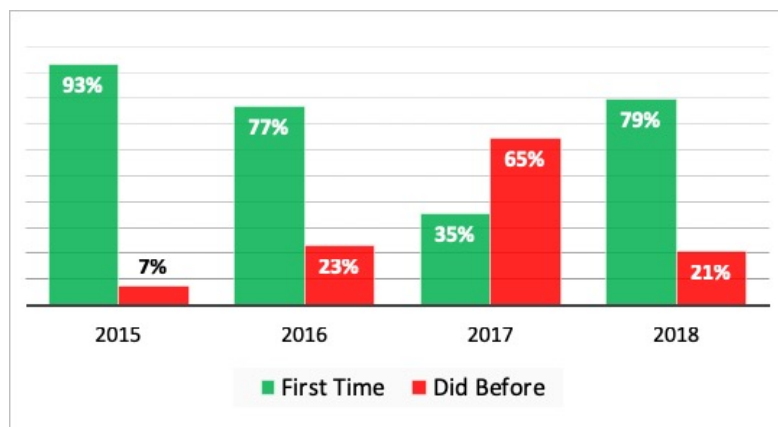
In the fall, after the growing season, the participants were emailed a harvest survey to collect information on taste, yield and plant health. Face-to-face harvest surveys were done with participants at food cupboards and WIC sites. Plant health ratings were assessed by asking "How well did the plants do?" with choices of "wonderfully," "very good," "not so good" or "didn't survive". The disease level was also assessed by the following options: "no disease", "some of leaves affected", "whole plant affected", "fruit had spots", or "the tomato died". Taste options included: "strong tomato taste", "medium taste", "mild taste", "sweet", or "not much taste".

An alternative yield estimation method was used to enable home garden participants to estimate the productivity of their cherry tomato plant. The yield level options for the production for the entire season were: "none", "a handful" (approximately one cup), "a bowl full" (approximately one pint), or "a bucket full" (approximately one gallon).

## RESULTS

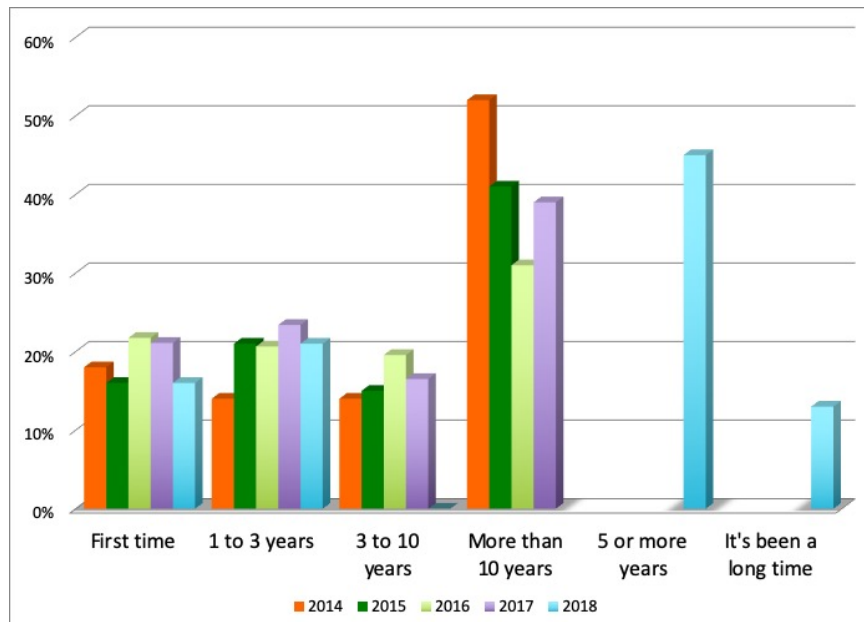
### Initial Survey

Over the years, the initial survey indicated that more and more people had participated in the One Tomato™ project in previous years, as seen in Figure 2. In 2017 our survey results showed that only 35% of people were new to the program, so in 2018 some new venues to distribute plants were added. This included two WIC sites and a town office on election day. As a result, about 80% of the project participants who received plants in 2018 were new to the One Tomato™ project compared to 35% who were new to the program in 2017.



**Figure 2.** Percentage of people participating in One Tomato™ for the first time, 2015-2018 (n=720).

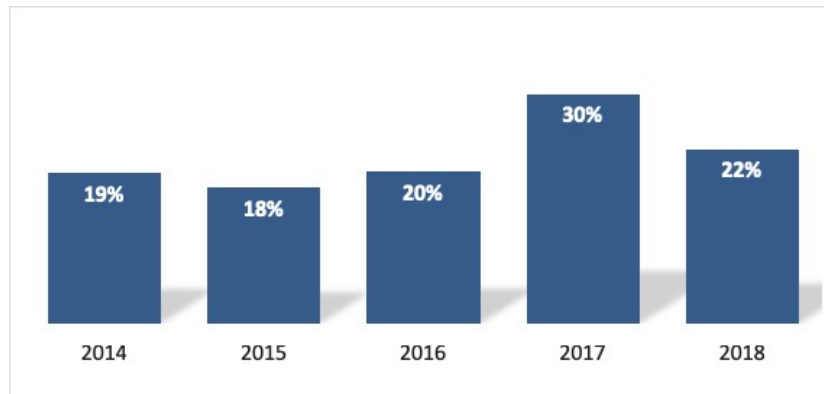
Figure 3 shows the initial survey results of individuals who participated in the One Tomato™ program from 2014 to 2018. It was found that an average of 19% had never gardened before the One Tomato™ program and this was their first garden experience, and an average of 21% had only gardened 1 to 3 years. In 2018, participants were given an additional choice of “haven’t gardened in a long time” in the survey, and 13% selected this option. The One Tomato™ program increased the number of households that grew food gardens in each year of the program. Households were either new to gardening or had not gardened in a long time.



**Figure 3.** Previous gardening experience by One Tomato™ participants (n=1,267).

#### Harvest Survey

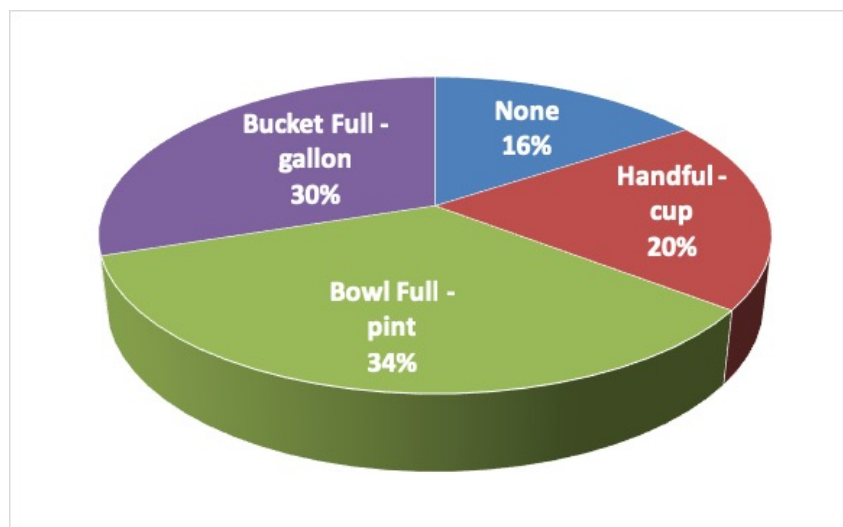
The return rate for the harvest survey varied by year as seen in Figure 4. The average return rate was 21% for 2014 to 2018.



**Figure 4.** Percent of the project participants completing harvest survey by year (n=290).

#### Production Results

The end of the season surveys for 2014-2018, as seen in Figure 5, showed that 16% had no harvest, 20% harvested a handful of cherry tomatoes (one cup), 34% harvested a bowl full (one pint) and 30% harvested a bucket full of tomatoes (one gallon.)

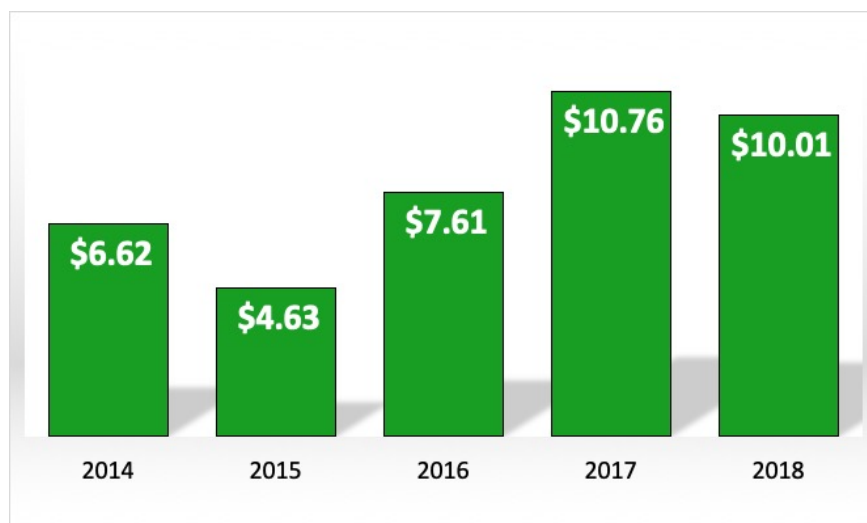


**Figure 5.** Percent reporting by yield category for Years 2014 to 2018 (n=260).

Figure 6 shows the estimated value of tomatoes harvested based on participant yield estimates and market values (Agricultural Marketing Service, Northeast, 2014-2018). A handful was valued at \$1.50, the bowl full valued at \$3, and the bucket full at \$23; these values were multiplied by the number of gardeners reporting that yield to get a total yield for the season, and then divided by the number of yield reports to get the average value of tomato yield for the season.

Multiplying this average value of tomato yield in the year by the number of seedlings distributed, then the total estimated value of all the cherry tomatoes harvested from these seedlings is more than \$14,770 for the One Tomato™ project from 2014 to 2018. That is an average of over \$8.20 in cherry tomatoes harvested from one seedling. This is an excellent return on yield from a \$0.50 investment, with 16 times the value of the initial plant. The value of the yields varied by year and variety, with the 2017 year being the most successful averaging over \$10.75 per plant.

Topping the harvest with yield in 2018 was Jasper, with half of participants getting that variety reporting over a gallon of cherry tomatoes harvested.



**Figure 6.** Estimated value of harvest per plant based on reported yield category (n=260).

Figure 7 shows the 2018 rankings of taste descriptions for the variety received. Twenty-four percent of the respondents rated Esterina as having a strong tomato flavor; 19% rated Jasper as having a strong tomato flavor; 35% rated Sun Gold as having a very sweet flavor; and 44% of those receiving Sunrise Sauce rated the flavor as mild.

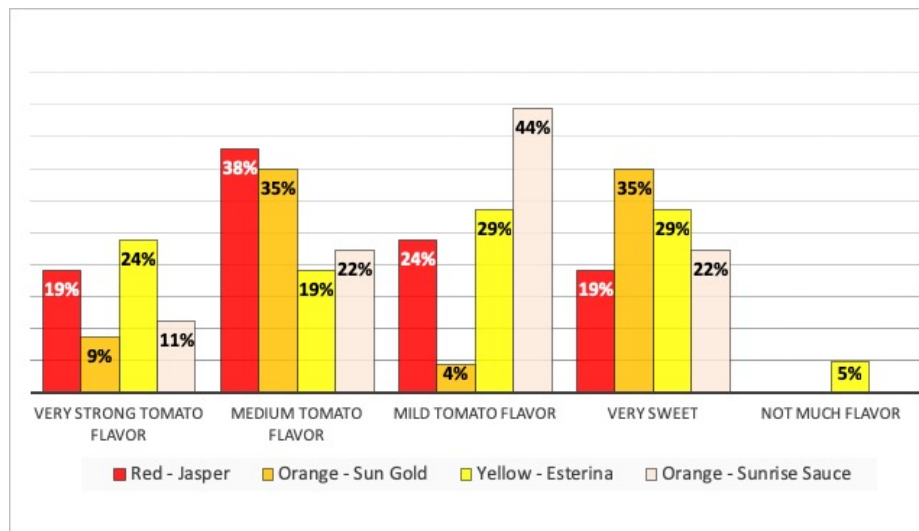


Figure 7. How did the tomatoes taste? Percent ranking flavor by variety grown in 2018 (n=74).

The cherry tomato varieties that were used were selected based on their disease resistance. In the 2018 harvest survey 83% of participants responding reported "no disease" on their plants or fruit.

#### Information Source

In the initial survey in 2014 to 2018, participants were asked with which UMaine Extension programs they were familiar. Figure 8 shows that 42% were familiar with gardening programs and 26% did not know about any of the UMaine Extension programs and the One Tomato™ was their first contact with any of the UMaine Extension programs. Participants were also asked if they wanted to receive the Central Maine Gardening Newsletter by email and 39% wanted to receive it.

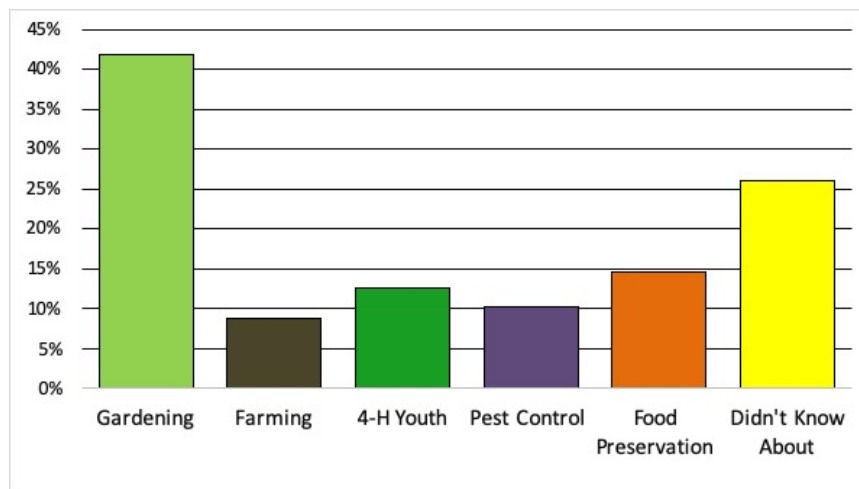


Figure 8. Familiarity of UMaine Extension programs (n=389).

## DISCUSSION

What started out to be a project to encourage county residents to grow their own food, by starting a garden with one tomato seedling, has also turned into a method of introducing people to UMaine Extension's garden resources including our publications, website, Facebook page and e-newsletters. Additionally, this project has been a way to encourage county executive committee members to get involved in funding, distribution of plants and review of the impacts of the project through the years. The county executive committee members have a real ownership of the program and have come to expect the project to be done every year. Master Gardener volunteers were able to contribute time to a program that enabled them to go into the food cupboards to work with people of different financial means.

The One Tomato™ project is more than a give-away program, since seedling recipients are asked to give feedback on how their tomatoes grew during the season. Citizens get more involved in giving feed-back on vegetable varieties and a start in being involved in a citizen science project. Seedling recipients will stop Extension staff in the store or other places to comment on how well their plants are doing and how pleased they are to be able to have fresh tomatoes just outside their door.

In 2018, the project team members got a little too ambitious with five varieties. The harvest survey ended being too long for many participants. In 2017, three varieties were used and fewer varieties resulted in a 30% response rate for the harvest survey compared to a 22% return rate in 2018.

In future years the One Tomato™ project will:

- Offer a maximum of three varieties

- Use a harvest survey of three pages or less when printed

- Distribute at a different town office during election day to offer this program to a wider variety of people who may not have had experience with UMaine Extension

- Source seedlings from one commercial greenhouse to get consistency in the plants

- Develop into a citizen's science project with more systematic data collection.

Other extension staff considering adopting a One Tomato™ project in their county need to start planning in the fall for a spring implementation. Define the goals for your project with county extension committees, identify possible seedling sources, distribution locations, and type and number of tomato seedlings to be distributed. An initial program participant survey as well as a harvest survey needs to be developed. Assemble your gardening information and plan for regular communication with program participants either by e-newsletter or social media. Don't forget to get local media involved to do news stories on your project. County funding requests should highlight the impacts to the county residents learning how to grow their own fresh vegetables.

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