

**Tennessee Master Gardener Search for Excellence  
2014 Application**

**APPLICATION DEADLINE IS OCTOBER 31, 2014**

NAME OF PROJECT: *Evaluating the Taste of Tomatoes Grown in and Around the Sequatchie Valley Region*

NAME OF MG GROUP: Sequatchie Valley Master Gardeners

COUNTY(IES): Bledsoe and Sequatchie

MASTER GARDENER CONTACT:

NAME John P. Formby

EMAIL [atinjohn@msn.com](mailto:atinjohn@msn.com)

MASTER GARDENER COORDINATOR/EXTENSION STAFF:

NAME Sheldon Barker

TITLE Director and Agent, UT Extension, Sequatchie County

EMAIL [sdbarker@utk.edu](mailto:sdbarker@utk.edu)

PHONE 423-949-2611

CATEGORY---MUST SELECT AND SUBMIT IN ONLY ONE CATEGORY

- Youth
- Demonstration Garden
- Workshop or Presentation
- Community Service
- Innovative Project
- Research
- Special Needs Audience

COMMENCEMENT DATE OF PROJECT March 2013

**LIST THE NAMES OF MASTER GARDENERS DIRECTLY INVOLVED IN THIS PROJECT.** Do not include their roles or any other individuals in this listing. (*Place the cursor in the box to type a name.*) You may attach an additional page if necessary.

**Project Leaders' Names:**

<b>Ken Lee</b>	<b>Linda Barker</b>	<b>Sammye Finley</b>	<b>Art Slack</b>
<b>Ava Navin</b>	<b>Doug Stafford</b>	<b>Norm Murduck</b>	<b>Peggy Uhey</b>
<b>John Formby</b>	<b>Nita Formby</b>	<b>Sylvia Powell</b>	

**Number of Master Gardeners participating:** 23

Place your cursor in the box and type. The box will expand.

**DESCRIPTION OF PROJECT** (include name, location, target audience, goals, and partnerships) 500 words or less.

The official name of the project is “*Evaluating the Taste of Tomatoes Grown in and Around the Sequatchie Valley Region*” and is popularly referred to by local Master Gardeners as the August Tomato Tasting and Evaluation. A selection of heirloom, hybrid and open pollinated tomatoes grown by local Master Gardeners in Bledsoe and Sequatchie Counties are sampled in a “blind” taste test setting. Taste attributes of the tomatoes are then evaluated using a *Likert measurement scale*. The event rotates annually between two small towns, Dunlap and Pikeville, located 19 miles apart in the Sequatchie Valley surrounded by the mountains of the Cumberland Plateau. The first Tomato Tasting was held in Pikeville in 2013 and the second in Dunlap in 2014. The Tomato tasting is intended to serve the families and friends of Master Gardeners and special invited guests from several communities in Bledsoe, Sequatchie and surrounding counties.

The goals of the project are threefold. (1) First and foremost, we seek to identify and quantitatively assess the taste of tomatoes that grow well in and around the Sequatchie Valley region and share this information with the public. In accomplishing this we utilize an evaluation instrument (*Likert Scale*) that is widely employed in psychology and social science research. (2) A second goal is to bring the communities’ attention to the local Master Gardener Program by sharing information about one of our projects that newspaper readers can easily understand, relate to and, at the same time, learn about growing different varieties of tomatoes in our region. (3) Finally, we seek to have a little fun by sharing some of the fruits of our vegetable gardens in a structured research environment followed by an information sharing session and ending with socializing and sampling of the tomatoes that were a part of the research evaluation as well as other varieties that were not included in the formal tasting and assessment.

To better understand the primary goal (No. 1 above), it is useful to summarize a few natural characteristics of the Sequatchie Valley region. The soils and growing conditions vary enormously from the mountain tops to the valley floor, which differ in elevation by as much as 1300 to 1400 feet. The valley is quite narrow, averaging only 5 miles, and its soils are generally deeper and more fertile, especially near the Sequatchie River. In contrast, on the mountains and slopes to the valley

the soil is thinner and often quite rocky. Vegetable gardens of Master Gardeners are geographically dispersed with some located on mountain tops, others in the valley near the river and a few on the slopes. The project includes cataloging the location at which the tomatoes included in the tasting and evaluation are grown. Also growers are asked to record some of the conditions that potentially impact harvests, yields and possibly taste.

After the format of the Tomato Tasting and Evaluation Event was agreed upon, a decision was made that no partnerships were required or needed to successfully implement and continue the project.

## **DESCRIBE THE PLANNING AND IMPLEMENTATION OF THE PROJECT. 500 words or less.**

In early 2013 Sequatchie Valley Master Gardeners began planning for the first annual Tomato Tasting and Evaluation Event to be held in August each year. None of the Master Gardeners had experience with tomato tastings but several had read about tomato tasting events in other parts of the country. Further, two Sequatchie Valley Master Gardeners had research backgrounds and it was decided to do a systematic investigation of the tastes of different tomato varieties grown in and around the Sequatchie Valley region. It was determined that among the many Tomato Tastings described online those conducted by Rutgers University (New Jersey) Extension seemed to be the most systematic, consistent and scientific. A small planning committee reviewed the Rutgers Tasting and Evaluation results covering a 5 year time span and then sought the advice of Peter Nitzsche, Morris County and Rutgers University Extension Agent, on how to design and conduct a Tomato Tasting and Evaluation Event in the Sequatchie Valley region of Tennessee. We asked two key questions and received prompt, detailed and helpful answers:

1. How many average size (say, 4" diameter) tomatoes of a particular cultivar do you think we need for 50 tasters?

**Answer: "Well it is always better to have more fruit so you can pick through it and only taste what is truly ripe. I core tomatoes and cut into ½" wedges. That would give you ~6 wedges per fruit. You could then cut them in half if needed. You want people to have both gel and internal meat."**

2. How many cultivars and tasting groups would you recommend for our first tomato tasting and evaluation?

**Answer: "I try to have people taste no more than 5 or 6 varieties in a short period of time. I have been told by Food Science people that's about all people's taste buds can reliably handle in a short period of time. In some years we have used two tasting groups, which expands the number of varieties."**

Relying on Peter Nitzsche's answers we decided on two tasting groups that sample 5 different tomato varieties in a blind tasting experiment.

The next step in the planning process involved creating a *Likert Scale* to measure taste attributes. We settled on a 7 point scale ranging from 1 (*Did Not Like at All*) to 7 (*Liked Very Much*). Tasters were asked to evaluate *sweetness, acidity, texture, flavor*, and then provide an *overall rating*. The maximum possible score in each category was 7.0, which would mean everyone who tasted it liked it very much. In keeping with the science underpinning the *Likert Scale* we used the average values of the *flavor* and the *overall rating* to measure taste. Finally, to insure that we could conduct the first tomato tasting efficiently we purposely kept the 2013 event small with Master Gardeners inviting only family and one guest. In 2014 this was expanded to include all paid participants at our March Shiitake Mushroom and Vegetable Gardening Workshops.

**HOW HAS THE PROJECT BEEN FUNDED AND HOW HAVE THOSE FUNDS BEEN SPENT? 500 Words or less.**

*Evaluating the Taste of Tomatoes Grown in and Around the Sequatchie Valley Region* is a project with zero direct costs. The tomatoes are donated by Master Gardeners and the meeting facilities with kitchens at which the events are held are donated by a local bank in Dunlap and a church in Pikeville.

Our tomato tasting and evaluation is structured and conducted in a manner similar to the one sponsored annually by the Morris County, New Jersey Extension of Rutgers University. However, there are differences. The Rutgers event is open to the public and a fee of \$5 is charged to attend. In contrast, our tomato tasting event is by invitation only and guests do not pay to attend. In the future, if the Sequatchie Valley Tomato Tasting and Evaluation event is opened to the general public, a fee would be needed and advanced registration would be required to control attendance and keep the number of tasters in line with the seating capacity of the facilities used to host the events.

**DESCRIBE THE OUTCOMES OF THIS PROJECT. HOW HAS IT AUGMENTED LEARNING, INCREASED KNOWLEDGE OR CHANGED PRACTICES TO ENHANCE QUALITY OF LIFE? INCLUDE THE METHODS YOU USED TO MEASURE THE IMPACT OF THE PROJECT. These impacts could be economical, educational, environmental, health or community based. 500 words or less.**

The Sequatchie Valley Tomato Tasting and Evaluation has been conducted twice and the results of evaluations are summarized below. For the sake of brevity we report *Likert Scale* measures for *Flavor*, *Overall Rating* and the *Combined Score* of these two attributes. Each cultivar is assigned an alpha-numeric ID and tasters complete a score sheet for each cultivar and turn it in before sampling the next tomato.

2013				2014			
Cultivar	Tasting Group A			Cultivar	Tasting Group C		
	Flavor	Overall	Combined		Flavor	Overall	Combined
Russian Persimmon	4.9	4.5	4.70	Mortgage Lifter	5.5	5.4	5.45
Cosmonaut Volkov	4.5	4.3	4.40	Parks Beef Boy	4.3	4.5	4.40
Cherokee Green	4.1	4.2	4.15	Hybrid Beefsteak	3.1	3.7	3.40
Ball's Beef Steak	5.4	5.2	5.30	Delicious	2.5	2.75	2.63
Siberian	3.8	3.9	3.85	Rutgers VFA	5.1	5.2	5.15
Tasting Group B				Tasting Group D			
Cultivar	Flavor	Overall	Combined	Cultivar	Flavor	Overall	Combined
	Flavor	Overall	Combined		Flavor	Overall	Combined
Tigerella	4.6	4.5	4.55	Juliet	4.4	4.3	4.35
Rutgers VFA	4.9	4.7	4.80	Heirloom Rose	4.5	4.3	4.40
Celebrity	4.1	3.8	3.95	Black Cherry	5.2	5.0	5.10
Mountain Magic	4.6	4.5	4.55	Parks Whopper	4.3	4.0	4.15
Green Zebra	4.8	4.9	4.85	Rutgers VFA	4.5	4.2	4.35

The *Likert Scale* evaluation measures are tabulated and a summary is shared with tasters. The identities of the different cultivars are then revealed and the results discussed. This dialog leads to the education component of the tomato tasting event. Different varieties are reviewed and growing suggestions are offered. Hybrid, open pollinated and heirloom cultivars are identified and discussed with attention to disease resistance. The event ends with an evaluation that reveals learning outcomes. There were 41 participants in 2013 and 48 in 2014. All tasters *agreed* or *strongly agree* that the Tomato Tasting and Evaluation:

- is an excellent Master Gardener Activity and should be repeated
- is a good way to acquire information about Different Tomato Varieties
- lived up to my expectations
- was well organized

In addition, all reported that they will be able to use what they learned in their future gardening activities.

An important part of the learning and impacts that take place are difficult to quantify. Each year following the tomato tasting two weekly newspapers that are widely read in the rural counties in and around the Sequatchie Valley have published detailed stories with photos highlighting the results, providing information on the different cultivars, and summarizing some of the educational content of the project. There is anecdotal evidence that this has had an impact. For example, following the 2013 news story the Director of the Bledsoe County Library asked a Master Gardener for some Green Zebras so that she could harvest seeds and grow her own in 2014. Before the story appeared she had never heard of Green Zebras. In 2014 the Librarian shared a large unnamed yellow oxheart shaped open pollinated tomato that has been grown by a local family for generations. We plan to propagate this tomato and hopefully include it in the next tomato tasting and evaluation in 2015.