Food Gardening
in Santa Clara County
Preliminary Results
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STUDY DESCRIPTION

To learn why people in Santa Clara County grow their own food, how they garden, and the impacts food gardens have, we surveyed 424 gardeners in Santa Clara County between April and October 2015. The survey was distributed at the Master Gardeners' annual spring garden market in San Jose, and emailed to the Master Gardeners of Santa Clara County as well as to community gardeners in Palo Alto, Mountain View, Morgan Hill, Cupertino, Campbell, and San Jose. A few gardeners also responded to flyers posted at several SummerWinds Nursery locations in Santa Clara County.

In addition, 86 gardeners volunteered to weigh what they harvested from their gardens during the summer and/or winter growing seasons in 2015. About half of these gardeners came from La Mesa Verde and Valley Verde, home garden programs that teach low-income families to grow their own organic vegetables. Each time gardeners harvested something from their gardens, they recorded the date, crop, and weight. If they shared any portion of their harvest, they also wrote down the recipient and an estimate of the amount given away. Most of these gardeners also took the garden survey.

The information presented in this report comes from both the garden survey and the garden weighing study.

HIGHLIGHTS

- Food gardeners in the study come from many different backgrounds. They represent a range of education and income levels. One-fifth are immigrants. Some gardeners are just starting out, while many others have gardened for more than 20 years.
- 90% garden in order to have fresh fruits and vegetables. A majority of gardeners also value their gardens for the health benefits and enjoyment they bring.
- 97% of gardeners have made changes to their gardens because of the drought or are already using water-conserving practices.
- From July through August, gardeners harvested a median of 70 pounds of fresh produce each. Over that two-month period, garden harvests ranged from just under 20 pounds to more than 400 pounds for the most productive gardeners.
- The typical gardener would have spent $252 during July and August to buy the same amount and type of organic produce at a local grocery store.
- During the summer, the average gardener grew 50% of the produce he or she consumed.
- For the majority of gardeners who reported being food insecure, food gardening helped to reduce their anxiety about running out of food before they had money to buy more.
- We estimate participants in La Mesa Verde and Valley Verde—programs that teach low-income families to grow their own food— grew more than 13,000 pounds of organic produce worth more than $50,000 in the summer of 2015.

WHO ARE THE GARDENERS?

Gardeners were almost evenly split between those who garden at home, in a community garden, or in both places. Many were very experienced gardeners; almost 40% had gardened for more than 20 years. About 15% were new to food gardening, having gardened for two years or less. Gardeners came from a wide range of socioeconomic backgrounds. Twenty-two percent of gardeners lived in households earning less than $50,000 per year, while 33% came from households that earned more than $150,000 annually. In general, gardeners were highly educated: 78% had a bachelor's degree or higher.

Demographic Characteristics of the Gardeners in the Study

Variables	*Percent*
Median Age	57 years
Gender	
Male	31%
Female	69%
Education	
High school or less	4%
Some college or Associate's degree	18%
Bachelor's degree	34%
Graduate or professional degree	44%
Race/Ethnicity	
White, non-Hispanic	68%
African American, non-Hispanic	1%
Asian	13%
Hispanic	13%
All other races	4%
Foreign Born	22%
Income	
Under $50,000	22%
$50,000-$99,999	27%
$100,000-$149,999	18%
$150,000 or more	33%

WHY DO THEY GARDEN?

The most common reason for having a garden was to have fresh fruits and vegetables. Other top reasons for gardening were: engaging in an enjoyable hobby, relaxation, and stress release, spending time outdoors, and exercise. These results show that gardeners value the health and recreational aspects of their gardens as well as the fresh fruits and vegetables they produce. Some people also enjoyed the social aspects of gardens: they gardened to learn from others, to teach their children or grandchildren, and to spend time with family and friends. For two-thirds of gardeners, being assured of the origin and quality of their fresh produce was an important reason to grow their own food. About one-third of survey respondents gardened to save money.

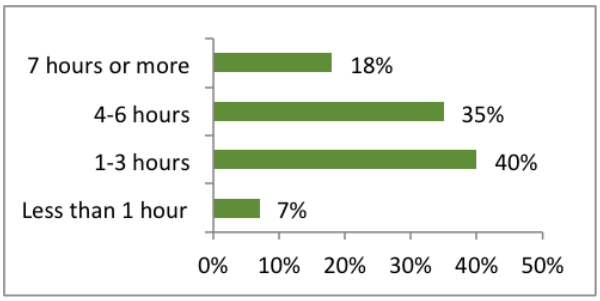
Which of the following best describes why you garden?

	Percent	Number
Have fresh fruits and vegetables	90%	379
It's a hobby I enjoy	84%	357
Relax and/or relieve stress	79%	333
Spend time outdoors	77%	328
Know where my food comes from and how it is grown	65%	277
Exercise	54%	229
Learn from others	39%	164
Grow produce I can't buy in the store	38%	159
Save money	32%	134
Teach my children	28%	119
Spend time with family and friends	23%	96
Grow plants that are traditional for my family or culture	20%	86
Other	15%	64
Grow medicinal plants	10%	44

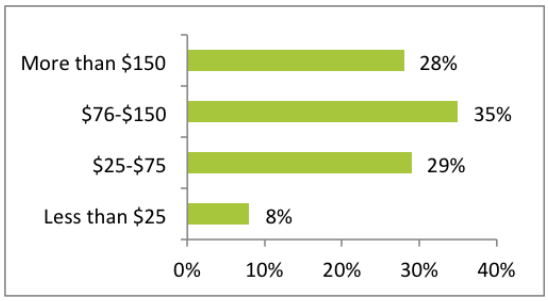
HOW MUCH TIME AND MONEY DO THEY SPEND ON THEIR GARDENS?

Forty percent of gardeners estimated that they spent 1-3 hours in their gardens each week and 35% estimated that they spent 4-6 hours each week. It was most common for gardeners to spend between $75-$150 annually on compost, seeds, and other inputs for their gardens.

On average, how many hours each week do you spend working in your garden during the summer growing season?



Approximately how much do you spend on inputs for your garden each year?



HOW DO THEY GARDEN?

Most gardeners were gardening organically (80%). The remaining 20% reported that they were gardening "mostly" organically. Community gardeners are required to garden organically and members of La Mesa Verde and Valley Verde are being taught organic gardening.

It was common for gardeners to start their own seedlings (58%), make their own compost (56%), and save seeds (56%). About one-third of gardeners said they also grew native plants.

Nearly all gardeners (97%) had made changes to their gardens because of the drought or were already using water-conserving practices. Over half of gardeners were watering less because of the drought. Gardeners had also incorporated other drought management practices such as mulching, shifting watering times and collecting water from homes to use in their gardens.

PRODUCTION

How much food is grown in Santa Clara County gardens?

Santa Clara County's Mediterranean climate allows gardeners to grow food year-round. The warm-weather growing season is the most productive part of the year. Nearly three-quarters of the year's total harvest was produced from June to September. In 2015, garden production peaked in July and August.

From July through August, gardeners harvested a median of 70 pounds of fresh produce each.[1] It is important to note that the amount that gardeners harvested varied enormously. The highest-producing gardeners harvested more than 400 pounds of fresh produce during these two months while the lowest-producing gardeners harvested less than 20 pounds. In general, community gardeners harvested a greater amount of produce than home gardeners (a median of 100 pounds per person in community gardens compared to 65 pounds per person at home), but community gardeners also tended to have larger plots than home gardeners. Home gardeners tended to produce a greater amount per square foot.

From February through March, gardeners harvested a median of 8 pounds of fresh produce each. A smaller number of gardeners grow food during the cool-weather season and a smaller number weighed their harvest during this time. During the cool season, there was also substantial variation in the amount that gardeners harvested, although the range (105 pounds) was much smaller than in the summer (400 pounds).

RETAIL VALUE

How much would it cost to buy the same amount of produce at the store?

To approximate the value of the food grown by Santa Clara County gardeners, we calculated how much it would cost to purchase the same amount and type of produce at a local grocery store chain. We visited local grocery stores and recorded the price per pound of vegetables, fruits, and herbs that were commonly grown in Santa Clara County gardens. We collected prices for organically grown produce, because almost all of the gardeners in this study gardened organically.

From July to August, gardeners grew produce valued at a median of $252. From February to March, gardeners grew produce valued at a median of $31.

Summary of garden harvest data for 2015

Each column represents a two-month period.

	February-March	July- August
Number of gardeners participating	13	76
Total pounds harvested	319	8358
Median pounds harvested per person	8	70
Range of pounds harvested	3 to 109 lbs.	14 to 414 lbs.
Total value for organic produce	$918	$30,802
Median value for organic produce per person	$31	$252
Range of value for organic produce	$8-$300	$44-$1579

1 In this section, we are reporting the median (or middle) value because it better represents the middle point of the weighing data than the mean (or average), which can be skewed by a few high or low values. For instance, if five gardeners grow 7 pounds, 9 pounds, 10 pounds, 12 pounds, and 50 pounds of vegetables, the median harvest is 10 pounds, but the mean harvest is 18 pounds.

PRODUCTION

What types of food are grown in Santa Clara County gardens?

Santa Clara County gardeners grow a diverse array of food crops. During the cool-weather growing season, 21 gardeners grew 48 different crops in total. Each winter garden contained an average of 6.5 crops. During the warm-weather growing season, 86 gardeners grew 84 different crops in total. Each summer garden contained an average of 9 crops.

February-March 2015		
Crop name	Total pounds harvested	Percent of gardeners growing
Peas	19	52%
Chard	41	48%
Lettuce	22	43%
Broccoli	20	33%
Kale	11	29%
Spinach	14	29%
Beets	10	24%
Carrots	9	24%
Cauliflower	8	24%
Radishes	9	24%

July-September 2015		
Crop name	Total pounds harvested	Percent of gardeners growing
Tomatoes	3619	97%
Cucumbers	1535	80%
Hot peppers	189	64%
Cherry tomatoes	636	62%
Green beans	258	52%
Summer squash	793	51%
Zucchini	778	44%
Sweet peppers	180	42%
Eggplant	130	29%
Green onions	54	28%

Tomatoes, grown by 97% of gardeners, were the most popular crop. The other most common summer crops were cucumbers, hot peppers, cherry tomatoes, green beans, and summer squash. The most popular cool-weather crops were peas, chard, lettuce, broccoli, kale, and spinach.

Gardeners in Santa Clara County have come from around the United States and the world. Their diverse origins are often evident from the crops they plant, which often have cultural significance. Some of these cultural crops include: bitter melon, bok choy, chayote, Chinese broccoli, Chinese celery, Chinese lettuce, fava beans, garlic chives, goji berries, loofah, nopales, opo squash, purple tree collards, rhubarb, Romanian Gogosari peppers, shiso, taro, tomatillos, yam leaves, and yardlong beans. There are also many crops that are common locally—such as tomatoes, cucumbers, hot peppers, and onions—that can play an important role in particular cultural dishes (e.g., salads, soups, salsas, and pickles).

National origin of gardeners in study

Continent	Countries
North America	Guatemala, Honduras, Mexico, Panama, United States
South America	Argentina, Chile
Asia	Cambodia, China, India, Iran, Japan, Kuwait, Philippines, Syria, Taiwan, Vietnam
Africa	Ethiopia, Malawi
Europe	Bosnia, Bulgaria, France, Germany, Ireland, Russia, Ukraine, United Kingdom

SHARING THE BOUNTY

How much do gardeners give away and to whom?

From July through August, the 76 gardeners in the study gave away more than one ton of fresh produce, or 28% of their total harvest.

The majority of that produce went to friends (34%) and extended family (29%). Neighbors received almost 20% of the produce that was given away; another 9% was donated; and 6% went to coworkers. Although total production was lower in the cool-weather growing season, the portion of produce donated was nearly the same. In the winter, gardeners gave away 25% of their harvest.

CONSUMPTION

How does what gardeners grow compare to what is recommended?

The current Dietary Guidelines for Americans[2] recommend that we eat a large quantity of many different types of vegetables. Because of this emphasis on diverse vegetable consumption, the dietary guidelines provide recommendations for the number of cups of different types of vegetables that should be eaten each week. We used these recommendations to compare the number of cups of vegetables that gardeners grew each season to the number of cups it is recommended that they eat over the same time period. This comparison provides another way of looking at garden production. Our calculation focuses on dietary recommendations for an individual and does not necessarily represent the cups of garden vegetables produced per person for a gardener's entire household.

Recommended weekly vegetable consumption for the average adult

Vegetable subgroup	Recommended cups per week	Examples
Dark green vegetables	1.5 cups	Broccoli, collards, mustard greens, kale, turnip greens, spinach, leaf lettuce, watercress, endive, escarole
Red-orange vegetables	5.5 cups	Carrots, pumpkin, red peppers, tomatoes, winter squash
Dry beans & peas	1.5 cups	Black beans, garbanzo beans, soy beans, black-eyed peas
Starchy vegetables	5 cups	Corn, green peas, potatoes
Other vegetables	4 cups	Cabbage, cauliflower, celery, cucumbers, green beans, green peppers, mushrooms, onions, summer squash, zucchini
Total vegetables	17.5 cups	

2 US Department of Agriculture and US Department of Health and Human Services. Dietary Guidelines for Americans, 2010. 7th edition, Washington, DC: US Government Printing Office, December 2010.

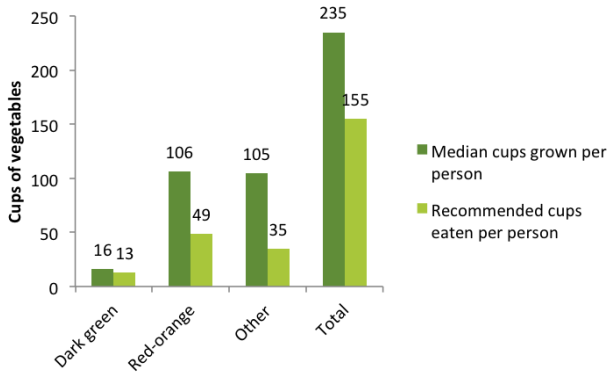
CONSUMPTION

How does what gardeners grow compare to what is recommended?

From July to August, gardeners grew more than enough dark green vegetables, red-orange vegetables, other vegetables, and total vegetables for one person to meet the dietary guidelines for one person. Gardeners grew 120% of the recommended cups of dark green vegetables, more than two times the recommended cups of red-orange vegetables, and nearly three times the recommended cups of other vegetables. Few gardeners in our study grew starchy crops, dry beans, or peas.

From February to March, gardeners grew more than four times the number of cups of dark green vegetables recommended for one person. However, for other vegetable subgroups, winter garden production was typically not enough for one person to meet the dietary recommendations. Despite lower yields in the winter, gardeners still grew about half of the cups of total vegetables recommended for one person and 85% of the recommended cups of other vegetables.

Comparison of cups grown to cups recommended for July-August (62 days)



How does gardening influence eating habits?

Gardeners in our study said that they consumed an average of 2 cups of vegetables each day.

During the summer, gardens made a substantial contribution to many gardeners' intake of fruits and vegetables. The average gardener grew about half of the produce their household consumed in the summer. Just over one-third of gardeners said that during the summer they grew 75%-100% of the vegetables their household consumed.

Gardeners obtained most of their produce from other sources during the winter. The vast majority of gardeners (more than 80%) said that during the winter they grew 25% or less of the vegetables they consumed.

Three-quarters of gardeners felt that since starting to garden they had changed their eating habits. The majority of gardeners said that they now eat more fruits and vegetables, enjoy trying new fruits and vegetables, eat more vegetables that are in season, and encourage their family to eat more fruits and vegetables as compared to when they did not garden.

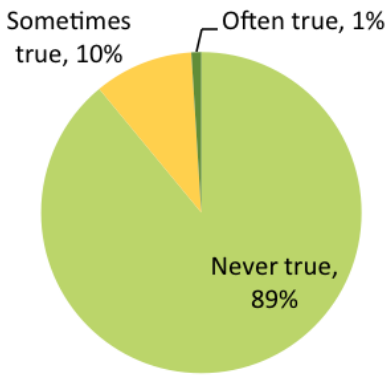
CONSUMPTION

Do gardens contribute to food security?

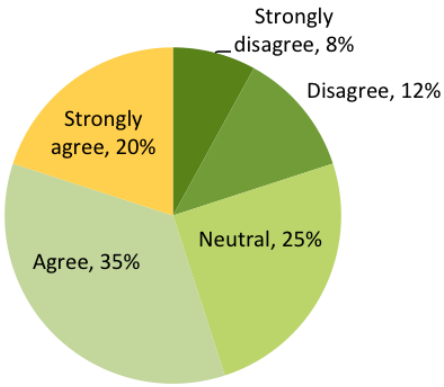
About 11% of gardeners sometimes or often were worried that their food would run out before they could buy more. This rate of food insecurity is similar to Santa Clara County as a whole, where 14% of adults are food insecure.

The survey results suggest that gardening is an effective strategy for improving food security. We asked gardeners who said they were anxious about running out of food if they worried less when their garden was producing. A majority agreed they that worried less when they were harvesting from their gardens.

How often was the following statement true in the last 12 months: "I worried whether our food would run out before we had money to buy more."
(429 responses)



"During the months when my garden was producing, I worried less about whether our food would run out before we got money to buy more."
(49 responses)



LOW-INCOME HOME GARDENING PROGRAMS

Santa Clara County has two programs, La Mesa Verde (LMV) and Valley Verde (VV), that teach low-income families how to grow their own organic vegetables and give them the supplies they need to start a garden. Forty-three gardeners from these programs volunteered to take part in the study.

Who are these gardeners? LMV and VV recruit low-income families to take part in their programs. The gardeners they recruit are often, although not always, people with little previous gardening experience. Not surprisingly, the LMV and VV gardeners were lower income and more racially and ethnically diverse than other gardeners in the study. Seventy-four percent of these gardeners had annual household incomes of less than $50,000 and more than half were renters. Roughly 60% identified as Hispanic. Almost 40% were sometimes or often worried about having enough food and just over 40% were using food assistance programs (such as reduced or free school meals). Many members of LMV and VV are growing food for the first time; 63% said they had been gardening for less than two years.

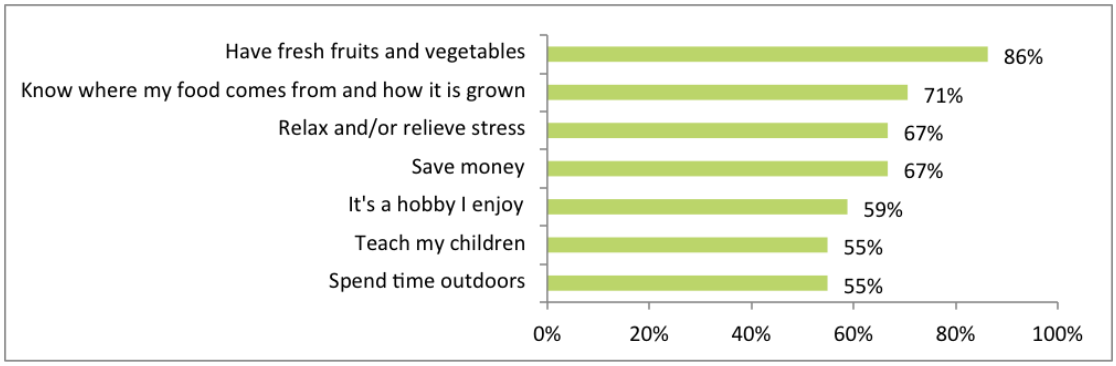
Demographic characteristics of LMV and VV participants compared to other gardeners in the study

	La Mesa Verde and Valley Verde participants	All other surveyed gardeners
Number of survey respondents	51	373
Race & Ethnicity		
Asian	12%	14%
African American, non-Hispanic	0%	1%
White, non-Hispanic	22%	75%
Hispanic	61%	6%
All other races	6%	4%
Education		
Less than high-school degree	16%	0%
Bachelor's degree or higher	32%	84%
Household income		
< $50,000	74%	13%
>$150,000	0%	39%

LOW-INCOME HOME GARDENING PROGRAMS

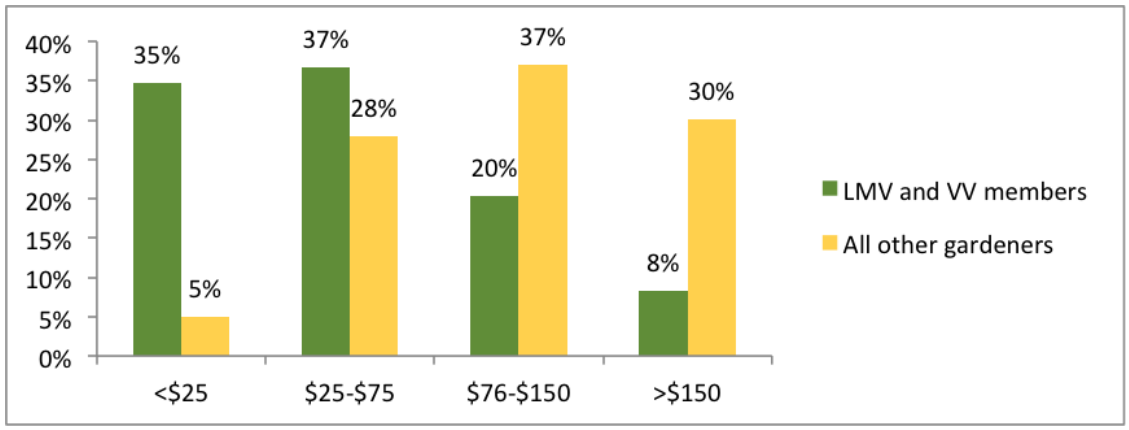
Why are they gardening? Like other gardeners in the study, LMV and VV members said they were motivated to garden because they wanted to have fresh, high quality fruits and vegetables. They also were also interested in gardening because of the psychological and health benefits that come from spending time doing an enjoyable outdoor activity. In addition, 67% of LMV and VV gardeners were gardening to save money on food, compared to 27% of the other gardeners in the study. For more than half of LMV and VV members teaching their children was another important motivation for having a garden, compared to 24% of the other gardeners in the study.

LMV and VV members' top reasons for having a food garden



How much do they spend? For LMV and VV gardeners the cost of setting up a new garden are covered by the organizations, which provide raised beds, soil, drip irrigation, and seedlings. Gardeners in these two programs did not need to spend much money to have fruitful gardens. Thirty-five percent reported spending less than $25 on their gardens for the entire year and 37% said they spent $25-$75.

Comparison of garden expenditures

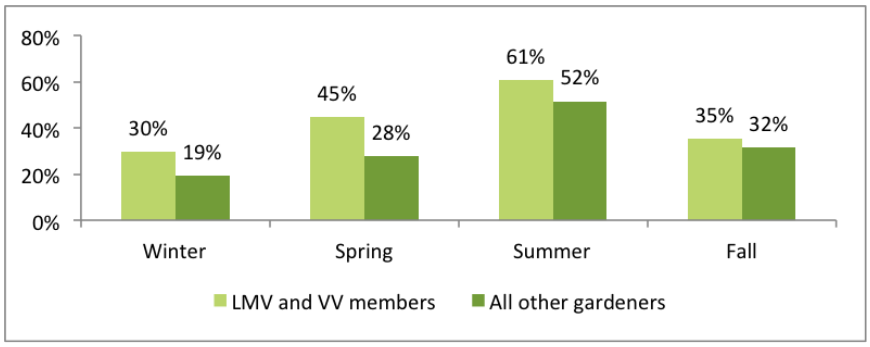


LOW-INCOME HOME GARDENING PROGRAMS

How much did they grow? LMV and VV gardeners produced amounts that were similar to other gardeners in the study. For the two-month period from July to August, gardeners in these programs produced a median of 57 pounds each. It would have cost $224 to purchase the same quantity of organic produce in the store. Although this is somewhat less than the median weight of 70 pounds that we calculated using data from all 76 gardeners in the study, LMV and VV gardeners are typically gardening much smaller plots. The average plot size for all gardeners in the study was 184 square feet, while the average plot size for LMV and VV gardeners was 75 square feet.

Over the course of the year, LMV and VV gardeners grew 30%-60% of the produce they ate, depending on the season. In the winter and fall, these gardeners reported growing about 30% of the produce they ate and in the summer they were able to grow roughly 60% of the produce they consumed.

Comparison of the portion of total produce consumed that comes from the garden



LMV and VV gardeners reported that they had also made changes to their diets. More than 85% of gardeners in both programs said that since they started gardening:

- They eat more fruits and vegetables that are organically grown;
- They eat different types of vegetables depending on what is in season;
- They eat more than one kind of vegetable each day;
- They eat more fruits and vegetables;
- They enjoy trying new fruits and vegetables; and
- They encourage their families to eat more fruits and vegetables.

Finally, we used the weighing data LMV and VV gardeners collected between July and September 2015 to estimate how much produce all of the participants in the programs grew that summer.

Seventeen LMV gardeners weighed for all three months. We used the median amount that they grew over that time to calculate how much all 110 LMV participants grew. Fifteen VV gardeners weighed for all three months. We used the median amount that they grew over that time to calculate how much all 45 VV participants grew.

110 La Mesa Verde gardeners grew an estimated **10,780 pounds** of organic produce worth more than **$40,000** in the summer of 2015.

45 Valley Verde gardeners grew an estimated **2,784 pounds** of organic produce worth more than **$10,500** in the summer of 2015.

ACKNOWLEDGMENTS

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We welcome comments and questions. Please contact us at ldiekmann@scu.edu or at:

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