

May 30, 2019

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This report summarizes the work and results of the SARE project FW016-33 "Sorrel Pesto: The Positive Implications of Sorrel as a Substitute for Basil in Pesto Production". As stated before, this project was funded by Western Sare and conducted in collaboration with UC ANR and Rob Bennaton.



Overview

The grant originally had a focus on working with local pesto makers, encouraging them to use sorrel as a substitute for basil in pesto production and then connecting them with local farmers. As described in our earlier report updates, after meeting with 3 pesto makers it soon became clear that getting them to change their production methods would be very difficult. Based on that and in conjunction with a very positive response to sorrel among our customers and the general public, we requested a modification in the grant scope to focus the grant on sorrel marketing. We began our efforts by conducting tastings and very brief interviews with people at several events in the San Francisco Bay Area. Short Interviews were held with anyone who was interested and consisted of the following questions:

1. Have you ever eaten sorrel before? IF yes, how was it prepared? (participant could then eat fresh sorrel and interview ends). If no, continue to questions 2 & 3.
2. If participant hasn't had sorrel previously: Please tell me what you think it will taste like based on its' appearance?
3. Participant tastes sorrel and gives feedback on the taste in three ways- 1) if they enjoy it, 2) what it tastes like to them and 3) how they can envision it being used.

Consumer Outreach

We conducted tastings at 3 events including the Maker Faire, an event at the Exploratorium in San Francisco and a tasting at Mandela Marketplace, a local store where our produce is sold. Images and videos of these events can be seen at the project website. In total, more than 500 people tasted sorrel and approximately 130 participated in our interview process.



Local residents tasting sorrel at an event in San Francisco

Our results showed the following:

- Most people were unfamiliar with sorrel- had never tasted it or couldn't remember having tasted it. 88% had never tasted while only 12% had.
- Of 115 respondents who scored the flavor, the average score given was 7.87 on a scale of 0 to 10. 0 means that they dislike, 5 is a neutral score and 10 being absolutely loving it. Only the people who were tasting it for the first time gave a score.
- None of the respondents disliked the taste. All respondents gave a score of 5 or higher.
- Most people who had never tried it before assumed it would taste like lettuce, spinach, grass, arugula or maybe basil. Many people assumed it would be flavorless, watery or bitter. Almost everyone was very surprised with the actual taste.
- For some people the initial "flavor shock" was too much. The acidity was too much for them to handle. Once they got over the initial shock, they enjoyed the flavor.
- Many people really enjoyed the flavor but wondered how to use it.
- Some of the things that they were reminded of when trying sorrel- sour apple, mango, unripe apricots, warheads (candy), sourgrass, rhubarb
- Quotes-
 - "it reminds me of being back in Africa"
 - "the flavor makes me smile",
 - "no shit !"
 - "I rate this a 5 by itself but an 8 with a partner",
 - "delicious... romaine is child while sorrel is the cool uncle"

Due to the unfamiliarity of potential consumers with sorrel, we began collecting recipes of how to best use sorrel. Some of these recipes were from our customers and others were found online, through cookbooks or via other means (recipes are shown in project slides on project website). These recipes are an important tool that producers can use when promoting sorrel among their customers and at farmer's markets, etc.

Economic Viability

Sorrel has been a very important part of the income of Green Skies Vertical Farm. Because sorrel is high yielding per area, grows year round and is virtually pest and disease free in our climate, it is a continuous source of income for our farm.

For the period of 2014- 2018, sorrel has been our best selling crop, in terms of total revenue. During this period, sorrel sales have accounted for 15.9% of sales, slightly outselling our salad mix 15.7% and third, spearmint bunches, 13.8%. Additionally, sorrel is a part of our salad mix, making up approximately 25% of each bag, so theoretically, additional revenue could be attributed to sorrel.

Sorrel was incredibly productive on a per area basis. When compared with other crops on our farm, the revenue from sorrel far exceeded that of other crops. In 2018 the revenue per square foot was almost 10x that of other crops (on average).

Crop	Area (square feet)	Crop Sales Revenue 2018	Revenue/ square foot	Revenue/ square foot / month
Farm Average	1,000	\$16,634	\$1.66	\$0.14
Sorrel	165	\$2617	\$15.86	\$1.32

This value was due to a combination of the heavy yields of sorrel in combination with high demand. Based on our sales records, sorrel yielded almost 4 lbs of marketable yield per square foot per year or 0.325 lbs per month. This is an average based on year round cultivation. This compares with most other crops that have a marketable yield of approximately 0.17 lbs per square foot per month.¹

¹Calculated from data from this doc which suggests that an average crop will have a yield of 0.5 lbs per square foot per growing season. Assuming most crops have a growing season of approximately 90 days then this translates to a monthly yield of approximately 0.17 lbs.

<http://sustainable-farming.rutgers.edu/wp-content/uploads/2017/12/urbanfringe-v07n01.pdf>



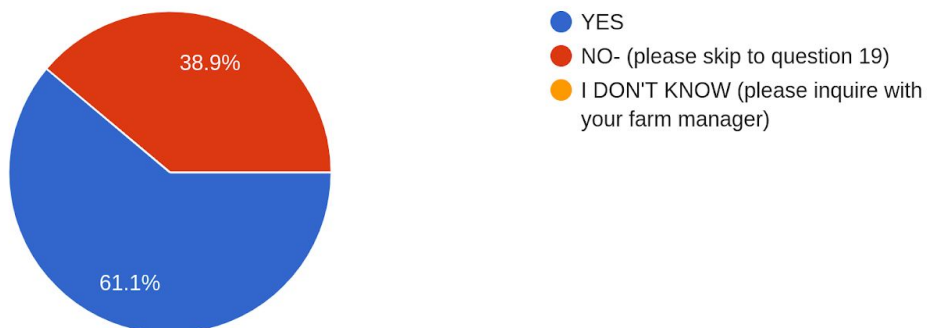
This foto shows the high density growth of sorrel.

Grower Outreach

The next step in the grant work was to reach out to growers to see who was growing sorrel and their impression of it as a crop via an online survey. We reached out to growers via e-mail through a UCANR e-mail blast and then individually to farms in the area, also via e-mail. We also visited local farmers markets to talk directly with producers and ask them to fill out the online survey. Unfortunately, we believe that the survey was not filled out by farmers in general but mostly by those who had some history with sorrel cultivation already or had knowledge of it in some way. For this reason, participation was more limited than we had hoped.

4. Does your farm/ garden grow sorrel ?

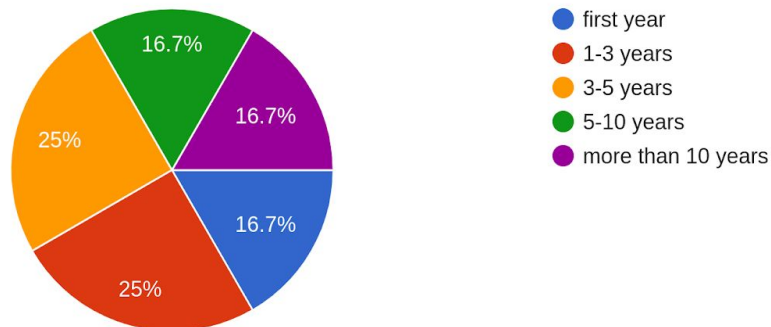
18 responses



Of those producers already cultivating sorrel, many had a long history growing it.

5. How many years has your farm grown sorrel?

12 responses



There were numerous reasons for sorrel cultivation. These include:

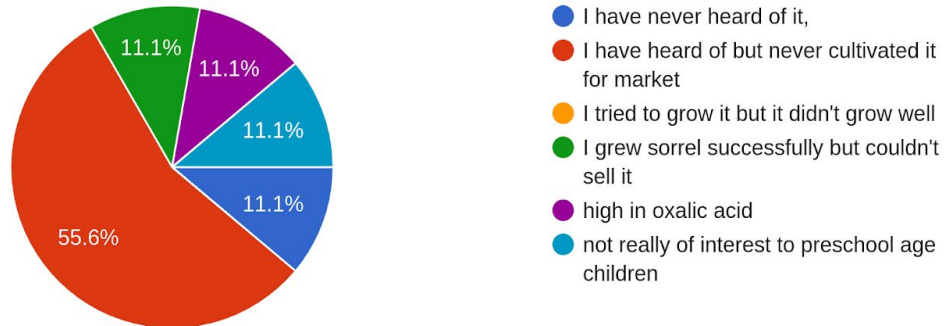
- It's easy to grow
- It grows without effort and is beautiful in the garden.
- It is SO easy and I have some great recipes for it
- I used to be a chef in London many years ago and wanted to sell it to restaurants
- it's a perennial
- Grows wild, tasty salad green
- it is a unique taste
- Good cover crop in perennial beds. Tasty and easy to grow.
- It is a lemony herb and lettuce replacement
- Sorrel is a great for backyard farms with chickens. I can harvest large bundles and its back within a few weeks. Fast growing food!

Several operators also commented on culinary uses for sorrel that were very unique such as using it in flan, that it “melts” in hot soups and as a wrap for cooking fish.

For the growers that do not grow sorrel, many were aware of it but had not tried cultivating it for market. We believe that sharing the work of this project will help those operators to understand how they might use sorrel and successfully market it.

19. IF you do not grow sorrel, why not?

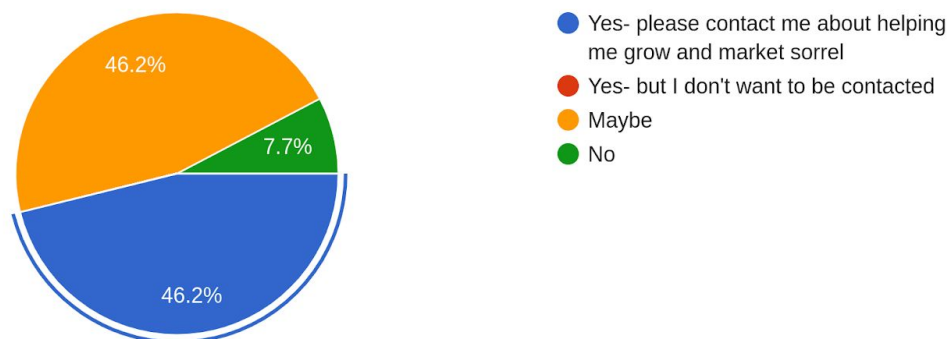
9 responses



Numerous farms were interested in cultivating sorrel and we followed up with each of them. To date we don't have information that these new farmers (new to sorrel) are in fact cultivating and marketing sorrel. Communication breakdowns were common. We will update this information as appropriate.

21. If you have never grown or sold sorrel, would you be willing to try? (We are looking for a few farms to work with...w it sells at their particular markets.)

13 responses



Summary

In summary, we believe that this project has been a success and will continue to provide value to operators. The project website and the resources that it contains (just completed) are a valuable resource that is being distributed to the survey participants and by UC ANR via mail blast. We believe that the marketing materials will be valuable tool for local producers to increase revenue and that sorrel as a perennial crop that thrives year-round can also help farms achieve a bit more economic stability in the winter months when crops are growing slowly and revenue is low. We look forward to updating the project website with more information and success stories as they become available. We sincerely thank Western Sare and UC ANR for their support with this project.