



User Research

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Objectives

Our research aims to obtain an understanding of UGArden's herb harvest and data collection practices to determine how best the UGArden Herbs app can supplement the garden's recordkeeping. Specifically, our research will guide the app's development in two key ways:

- **Ease of use** – The app should seamlessly integrate into UGArden's harvest and data collection activities, thus making the entire process more convenient and less time-consuming for the garden.
- **Structure** – The app should be structured so that UGArden team members can quickly understand and navigate through the app's menus and enter or locate information without issue.

Target Audience

The UGArden Herbs app's only target audience is UGArden team members. Specifically, the members that work in the Herb department. These are people who are passionate about herbs, sustainability, and the community in Athens and at UGA. These people will be using the UGArden Herb app to log all data needed during the tea-making process while working in the field. Our audience is composed of passionate, hard-working people who range in age from undergraduate students (early 20s), to professionals within the horticulture field, and even retirees who have a love for plants! Thus, our research focuses solely on the needs of this audience for app development.

Research Methods

Since UGArden Herbs is being developed entirely for UGArden team members, we constructed our research to collect detailed, qualitative information about UGArden, its team members and the harvest and data collection process. Specifically, we utilized the following research methods:

- **Exploratory Research** – We conducted secondary research to gain insights on UGArden, including their overall goals and general operations. This research informed how the UGArden Herbs app will broadly fit into UGArden’s herb harvest and processing operations.
- **Field Observation** – We observed UGArden team members while they harvested herbs and collected herb data. This observation gave us more specific details regarding how the UGArden Herbs app will integrate into UGArden’s everyday operations.
- **Interviews** – We interviewed April McCoy, UGArden farm manager, and Stella Carrasco, UGArden student worker, to better understand their perspectives of the herb harvest and data collection process as well as how the UGArden Herbs app would best fit into their specific work at the garden.

Further detail on each of these research methods is below:

Exploratory Research

Through our exploratory research, we gained a better understanding of UGArden as an organization, the team members that work at UGArden, and the overarching approach our team will take to develop the UGArden Herbs app.

What is UGArden?

- UGArden is a fully functioning community garden at UGA. Their organization aims to do the following:
 - Empower students to grow their own food by teaching them the principles of organic farming through service and experiential learning.
 - Share fresh produce with local community members who are facing food insecurity.
 - Enhance collaboration between organizations pursuing a just and sustainable food system.
 - Serve as an interdisciplinary research site that provides diverse opportunities for exploration.
 - Promote leadership development, innovation, and social entrepreneurship among their students.
- This project will primarily collaborate with three UGArden team members:
 - Ty Brooks, Farm Director – Ty is a Double Dawg with a bachelor's in wildlife biology and master's in agricultural and environmental education. He is an experienced farmer who is passionate about organic growing practices.
 - April McCoy, Farm Manager – April graduated from UGA with a degree in ecology and a minor in studio art. She is interested in making agriculture accessible to more diverse communities
 - Stella Carrasco, Herb Student Worker – Stella is a third year horticulture major. She got involved with the garden after a UGA course got her interested in learning about herbs, their medicinal properties, and how to prepare them.

What is UGArden Herbs?

- The UGArden Herbs program is a feature of UGArdent that grows over 40 different medicinal herbs

and teaches students and community members how to grow herbs using organic gardening practices and how to incorporate medicinal herbs into everyday life.

- They dry, process, and use their herbs in handcrafted teas, both loose leaf and pre-bagged, that they sell to community vendors.

How will the UGArden Herbs app fit in?

- The UGArden Herbs app will be an iPadOS app that assists UGArden team members with data collection and recordkeeping while harvesting, drying, and processing their herbs.
- The app will use Airtable to store and track the data collected on the UGArden Herbs app. Our team will integrate Airtable into the app by utilizing SwiftUI.

Field Observation

In order to better understand UGArden's harvest and data collection practices, we observed UGArden team members perform the entire process. Through this observation, we recorded key details of the process regarding the clothes that team members wore, the length of the process, how team members interacted with each other, and what parts of the process seemed the most tedious. This information will help us determine how to design the UGArden Herbs app so that it can seamlessly fit into UGArden's everyday practices.

While working, UGArden employees and volunteers never wore PPE (personal protective equipment) they have gloves that can be worn when harvest herbs but are not often used and are not necessary for the safety of the workers. Each worker wears long pants and shirts that at least cover their shoulders if not their full arms as well as closed toe shoes.

Throughout the day, workers are sitting down in the garden, elbow deep in water, lifting and caring large things, meaning that this attire is their best option to be comfortable and safe at work.

Each process that goes into creating these tea blends varies and are spread out across multiple days. Harvesting takes a few hours and is done in the morning (during this process, they would not/can't have an iPad with them). Cleaning takes 30 minutes to an hour (also would not have an iPad given the workers are elbow deep in a tank of water). Weighing takes just a few minutes and is done 3 times throughout the process (after harvest, after drying, after processing), this is where having an iPad would be helpful as they are already using a notebook and pen to record all of the weights. Finally, drying takes a few minutes of labor, however the herbs sit in a drying room for days (an iPad would also be helpful here as there hands are clean and more free and they have to record many stats during this process).

From what we observed, there are tedious parts of each process, some that could be fixed with the UGArden Herbs app and some that are just the nature of the work. When harvesting, the actual snipping and gathering of the plants takes hours sitting in a hot field, manually harvesting each plant. During the cleaning process, sorting through cuttings that are bad or weeds takes the longest. For drying there isn't much that is tedious, a large salad spinner-like washing machine dries the herbs and then they are taken to the drying room. And, when asked what the most tedious part of the entire process was, UGArden employees said entering the entries into Airtable was the most tedious.

The UGArden workers all seem to have a very harmonious relationship with each other. They will all be together in the field harvesting crops and are sometimes together (2-3 people)

during the cleaning and drying processes. They all seem to be very friendly towards each other and volunteers as they all very apparently share a passion for gardening.

Interviews

Interviewing UGArden team members allowed us to obtain personal perspectives on UGArden's processes and how the UGArden Herbs app might improve their output. Since the audience for this app only consists of UGArden team members, these interviews offer a direct look into the specific needs of our audience and what they expect this app to be able to do.

Stella Carrasco, Herb Student Worker (she/her), 3rd year Horticulture major.

What do you think will be the most important part of this app for you?

Editable entries and user friendly forms

Would you prefer to use the iPad and enter data as you work or continue with having a separate day for data entry? Why wasn't the old app used while collecting data?

April (Farm Manager) prefers for everything to be written down first. It's easier to handwrite during the process and then sort through the notes later in the day / a different day. It could be used when weighing (after harvest, after drying, then processed after taking stems off). They're not really able to pull out an iPad during any other part of the process due to being in direct sun, working with water, or already using both hands.

At what point are you inputting this data to Airtable?

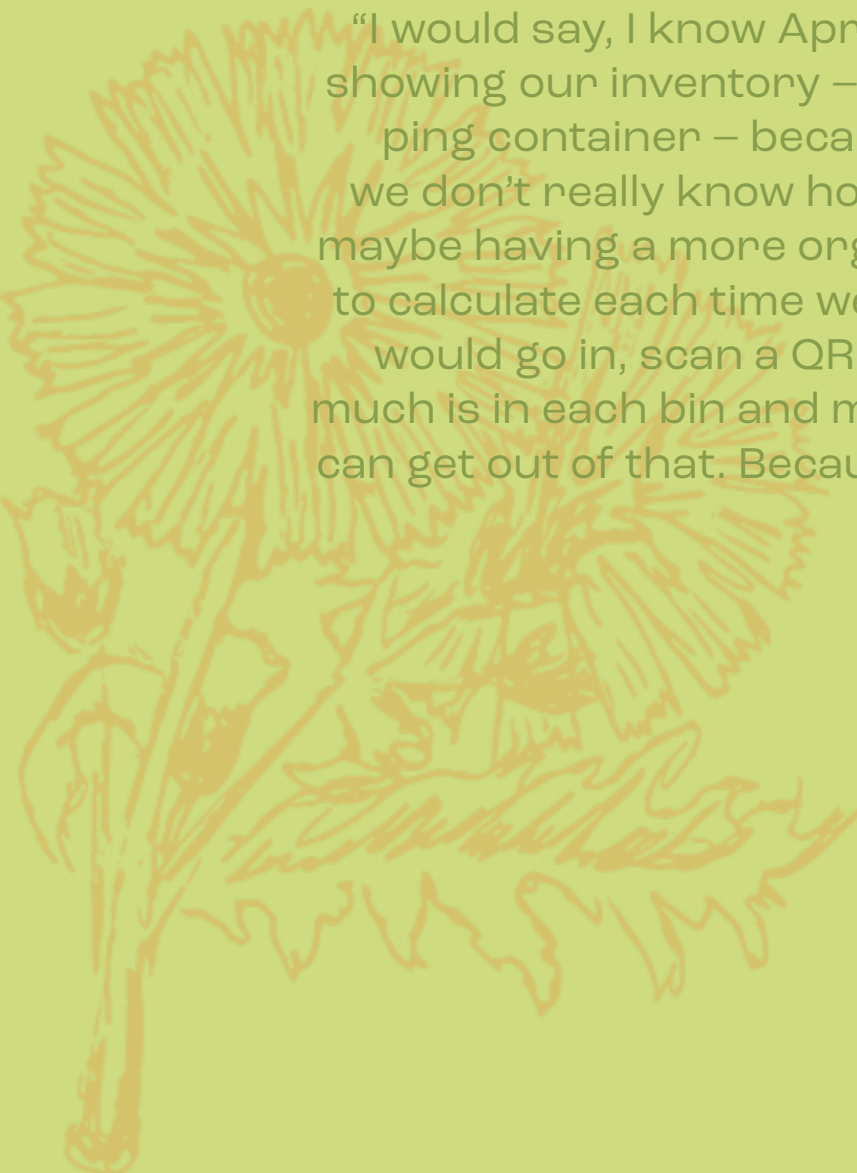
It (data from harvesting and drying) all gets inputted at the end of the day or a different day

How many times is the weight recorded throughout the process?

3 times: after harvest, after drying, after processing (taking out stems and bad leaves)

What is the most tedious part of the herb growing and drying process that needs a better solution?

“I would say, I know April really wants a better way of showing our inventory – like what we have in the shipping container – because right now with those bins we don’t really know how much is in each of them, so maybe having a more organized way instead of having to calculate each time we weigh something. Ideally, we would go in, scan a QR code, and it would tell us how much is in each bin and maybe how much tea blend we can get out of that. Because right now, we have to do a lot of Excel calculations.”



Key Findings

Main Challenges Currently Faced

While the UGArden has come so far since its initial opening, with many protocols, high-tech equipment, facilities, and more, there are still many challenges they face as a community garden.

The main challenge the UGArden is facing right now is their organization of data. They are currently logging all herb data by hand in a physical notebook at multiple points during their herb harvesting and drying processes. This data is inputted into Airtable manually later in the day or even on a different day. When asked, the garden director said they would even have a whole day dedicated to inputting and editing data in Airtable. In turn, this process is consuming hours and even days of time that could be spent elsewhere within the garden's operations.

Our solution: The UGArden Herbs app. The app will be fully integrated with airtable so that they can easily input and edit data, creating a much quicker workflow when inputting data about the herbs

Desired Features of UGArden Herbs App

The UGArden Herbs App will have many features designed to make the herb growing and drying process as seamless as possible.

We will include:

Harvest/Dry Form

Harvest Form Fields:

- Flower only, stem only, whole plant, others
- Product type w drop down:
 - Tea 1oz bag
 - Tulsi
 - Peppermint
 - Color me calm
 - Allergy relief
 - Blissful Belly
 - Tulsi Chai
 - Solstice
 - Tranquili-Tea
 - Spice Blends
 - Italian Mushroom
 - Cajun
 - Shiitake Powder
 - Salves
 - All purpose
 - Comfrey
- **Searchable by herb and amount used
- Are we using the flower only, stem only, or whole plant?
- Crop
- Lot number
- Harvest date
- Plot and row
- Ft Harvested
- Plant Part
- Harvest Weight
- Dry Condition
- Dry Temperature
- Relative Humidity
- Date Dried



Product Form

Product Form Fields

- Date
- Product Type (searchable by key phrases (name of plant, type of tea, etc))
- Batch Number (auto-populate)
- Lot Number (searchable by herb)
- Add New
- Personnel

Inventory Tab

The record of how much tea has been made



Primary Takeaways

Based on the key findings of our user research, our team has determined some essential details that will be pertinent to developing the UGArden Herbs app:

1. The UGArden Herbs app will be essential to the herb growing process

- Our app will help organize inventory, eliminate the need to access airtable to input data, and create a user friendly way to input, add, and edit all data. This app will save UGArden workers valuable time as well as create a stronger organization system for their herb inventory.

2. We will not have to worry about environmental factors during app development

- UGArden still plans to record initial weights in a notebook before transferring the totaled data into Airtable, so the garden's work environment will not be a concern for using the app.

3. Improved Data Organization

- By centralizing all herb-related information in one app, the UGArden Herbs app will enhance data organization, making it easier for team members to access and analyze information for better inventory and resource management.

