



Vegetable Recommender & Water Usage Estimator



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Where to start?

The prospect of gardening, especially vegetables, can be somewhat overwhelming at first.

Where to start? cont.

1. What kind of soil?
2. How much space?
3. Fertilizer?
4. Which plant?
5. When to plant?
6. How long does it take?

Keep it simple

- Remove as many variables as possible
- Avoid overwhelming novices
- Make it a one-stop-shop

Keep it simple, cont.

Recommend a vegetable based on three simple parameters:

1. User skill level
2. User vegetable preferences
3. User location

User skill

Like any activity, there are different challenges at different stages, but the biggest challenge is getting started.

Different plants require different levels of attention and maintenance.

User location

Utilize USDA hardiness zones to help users find vegetables that are most likely to thrive in their area.

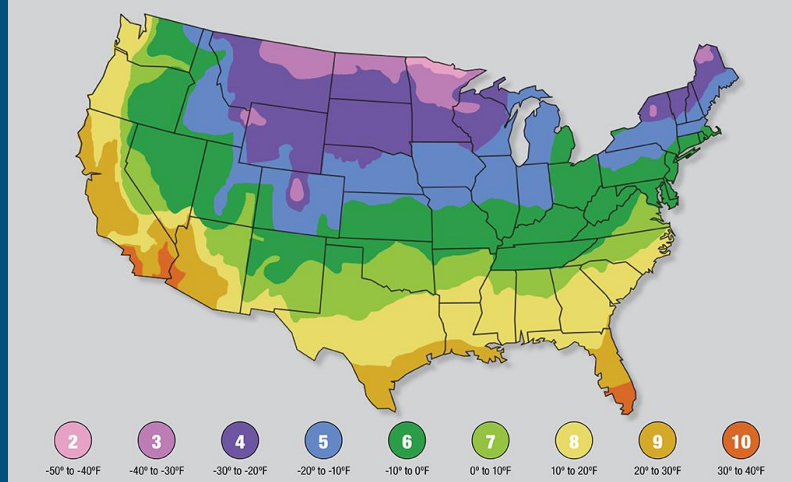
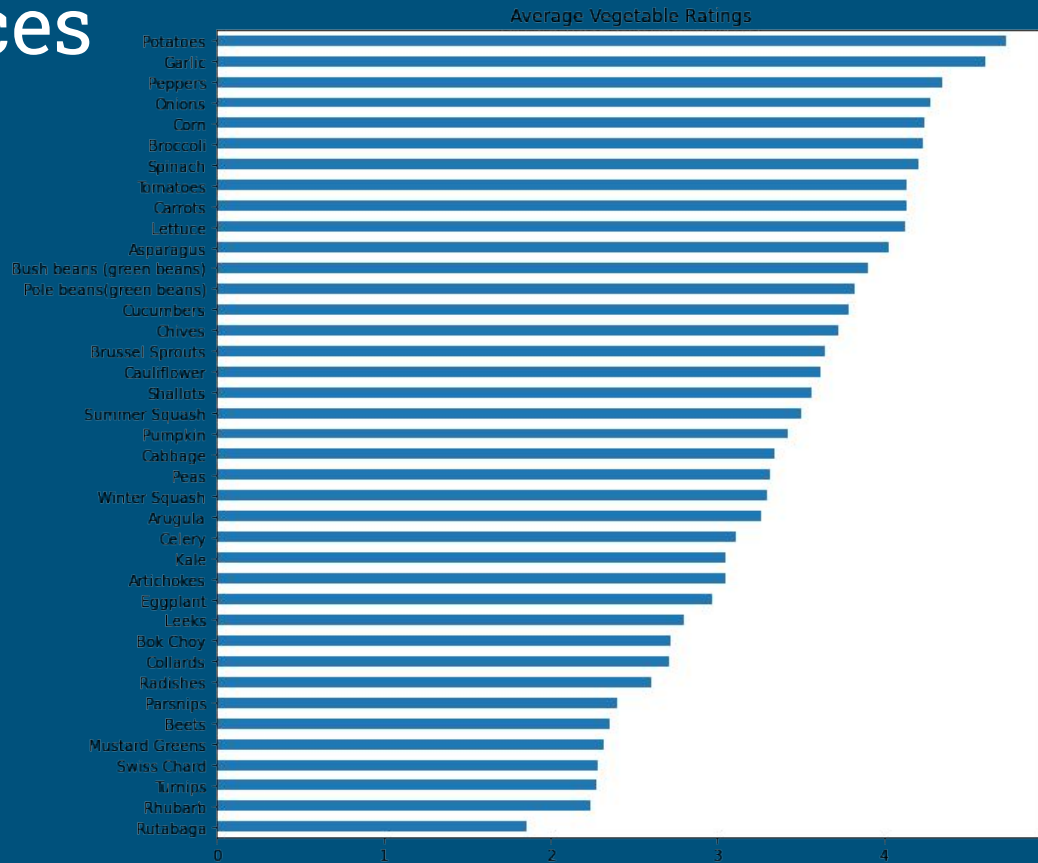


Image source: www.homedepot.com

User taste preferences

- 134 anonymous users
- 39 vegetables
- Scale of 1 - 5



How it works

Once we've made the recommender dataframe from our surveys it's as simple as passing user input through a function.

Welcome to the Swan Vegetable Garden Assistant App (Alpha)

With this app I hope to help you discover vegetables that you will be successful growing based on your location and level of experience, but more importantly that you will enjoy eating!

Let's get started!

1) How much experience do you have gardening? (1 = none, 2 = a little bit, 3 = you've successfully grown a few things)



2) What's your favorite vegetable?

Artichokes

3) What's your second favorite vegetable?

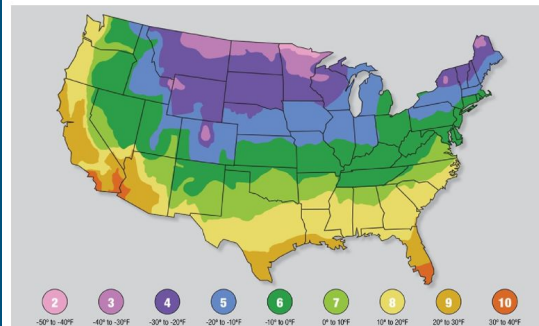
Artichokes

4) What's your third favorite vegetable?

Artichokes

5) What's your hardiness zone? (please reference the map below)

2



Water usage estimator facts

Basics:

1. 1" of water per week
2. 0.5" extra per 10 degrees > 60 F
3. 1" of water in a square foot = 1.56 gallons
4. Does not take into account weather prior to the user input date (yet)

Water usage estimator facts, cont.

Web scrape:

1. Pull high and low temp as well as average precip per-day for the specified 7-days for the last 12 years
2. Generate average high and low temps for that period
3. Generate average precipitation
4. Pass through a function to create readable numbers for the user

In use

Returns pertinent information to the user.

Welcome to the Swan Water Use Estimator App (Alpha)

This app aims to give you an estimate of how much water you need to use in your vegetable garden in 7-day period after the desired date using historical temperatures and rainfall data, as well as the size of your garden.

NOTE: This estimator app currently only works for the 88 counties in the state of Ohio.

1) Please choose a month

07

2) Please choose a day

17

3) Please choose a county

Butler

4) Please enter the square footage of your garden

50

IMPORTANT: Please do not press the 'estimate' button again once you've started the calculation (we're working on fixing the double display bug).

Estimate

Water usage estimate for 07-17 to 07-24.

The average temperature for the specified time period is: 75.96°F

The average rainfall for the specified time period is: 0.19 inches

Estimated inches of water needed: 1.01 inches per sq/ft or 0.14 inches per day

Estimated gallons of water needed: 78.78 gallons of water for your entire garden or 11.25 gallons per day

Future iteration ideas

1. Incorporate rolling precipitation averages to generate a more accurate water usage estimate.
2. More user vegetable rating surveys
3. More detailed vegetable output information
4. Include herbs and flowers using similar parameters

Conclusion

- Remove some of the barriers of entry to gardening
- Create an easy to use app to help new and experienced gardeners pick new vegetables for their gardens
- Give gardeners a rough estimate on how much water they will need for their vegetable garden