

An aerial photograph of a well-maintained backyard garden. The garden is enclosed by a wooden fence and features several raised beds with various plants, including leafy greens and flowers. A brick path winds through the garden. The overall scene is lush and green, suggesting a healthy and productive garden.

Using Data from my Backyard Garden to Teach Introductory Data Science

USCOTS, 2021

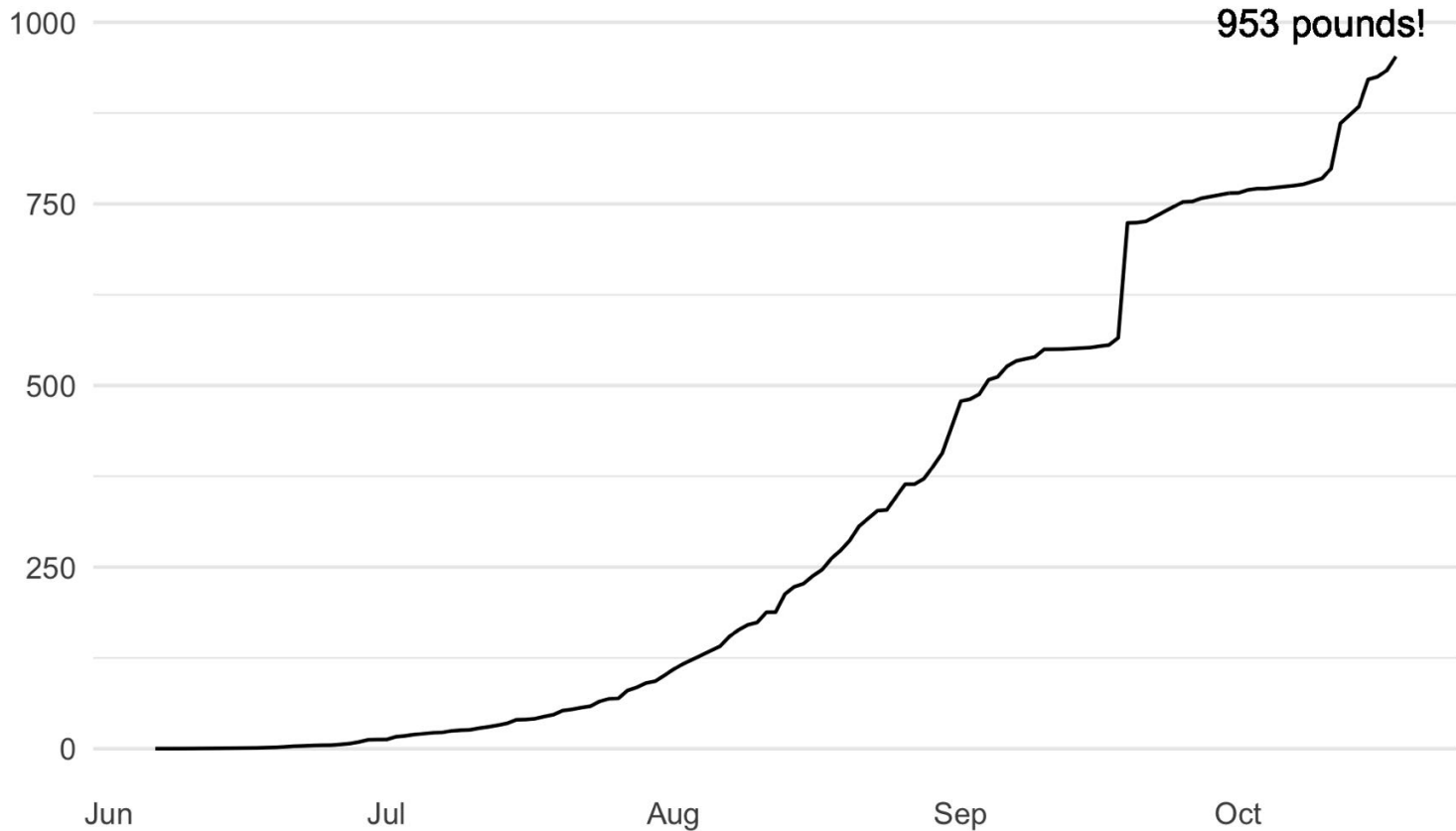
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By the end of the harvest season 2020, I harvested nearly 1000 pounds of veggies from my garden!



Garden data

- Why use data from the garden?
 - I could use it to teach a lot of intro data science topics. See examples on the course website: <https://ds112-lendway.netlify.app/>
 - It's interesting (at least I think it is).
 - Personal connection.
 - Why not?!
- How?
 - Google sheet and later an R package called **gardenR**: <https://github.com/lendway/gardenR>
 - To introduce new functions & for a perfect garden graph assignment

The data!

```
library(gardenR)           # for garden data :)
head(garden_harvest)
```

vegetable	variety	date	weight	units
<chr>	<chr>	<date>	<dbl>	<chr>
lettuce	reseed	2020-06-06	20	grams
radish	Garden Party Mix	2020-06-06	36	grams
lettuce	reseed	2020-06-08	15	grams
lettuce	reseed	2020-06-09	10	grams
radish	Garden Party Mix	2020-06-11	67	grams
lettuce	Farmer's Market Blend	2020-06-11	12	grams

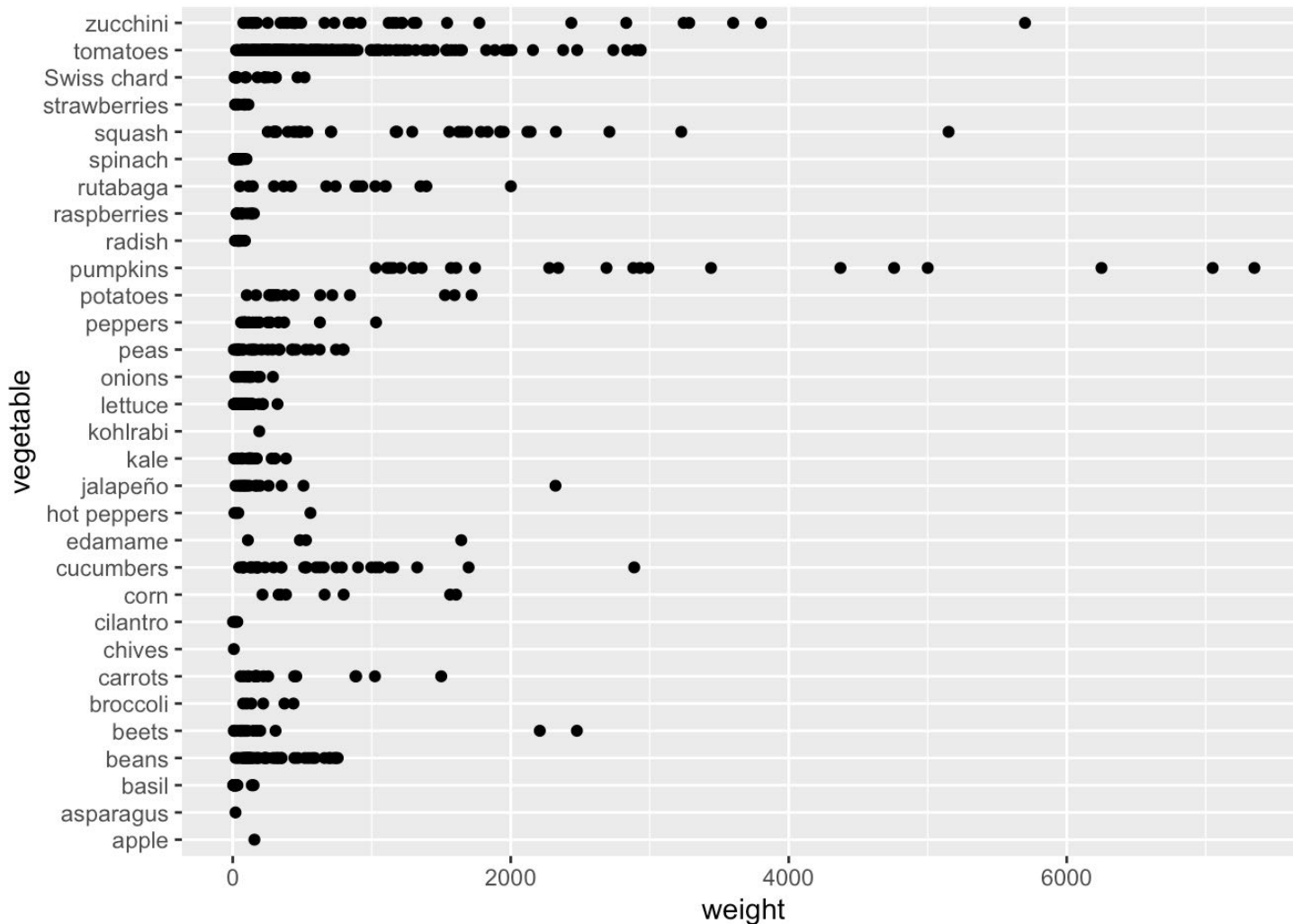
6 rows

Perfect garden graphs

Each week, you will submit a graph using my garden data. For this graph, you should ask a question of the data and then create a graph to answer that question. You will get feedback from me each week and will build on your previous graph. So, you don't create a completely NEW graph each week, but rather continue to improve on the SAME graph over the entire course. This assignment will focus on the details of the graph that we don't usually have time for in weekly assignments. It will also be about writing nice code and annotating it.

```
garden_harvest %>%  
  ggplot(aes(y = vegetable, x = weight)) +  
  geom_point()
```

Chloé Nance

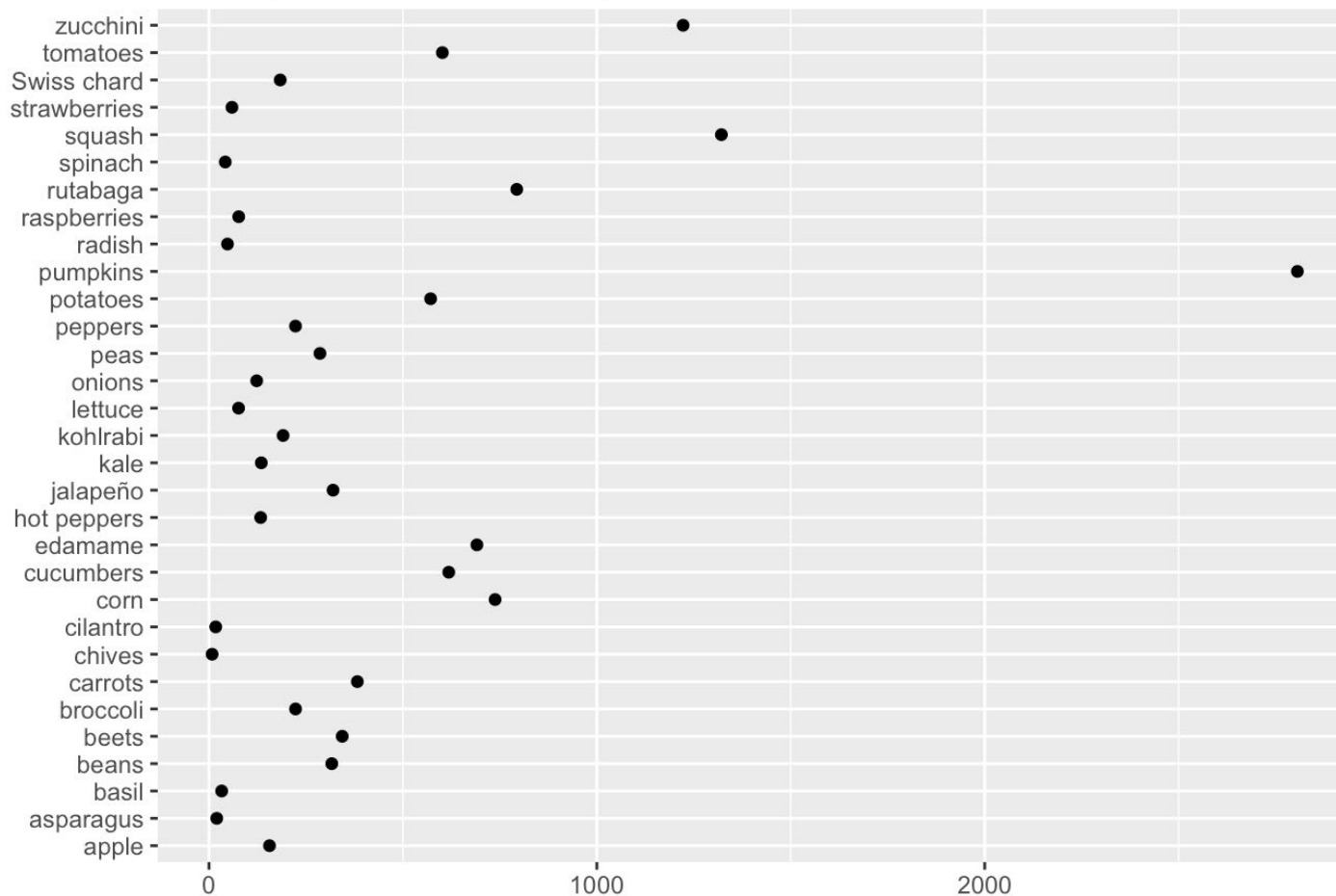



```

garden_harvest %>%
  group_by(vegetable) %>%
  summarise(avg_wt = mean(weight)) %>%
  ggplot(aes(y = vegetable, x = avg_wt)) +
  labs(title = "Average weight of each vegetable harvested",
       x = "",
       y = "") +
  geom_point()

```

Average weight of each vegetable harvested

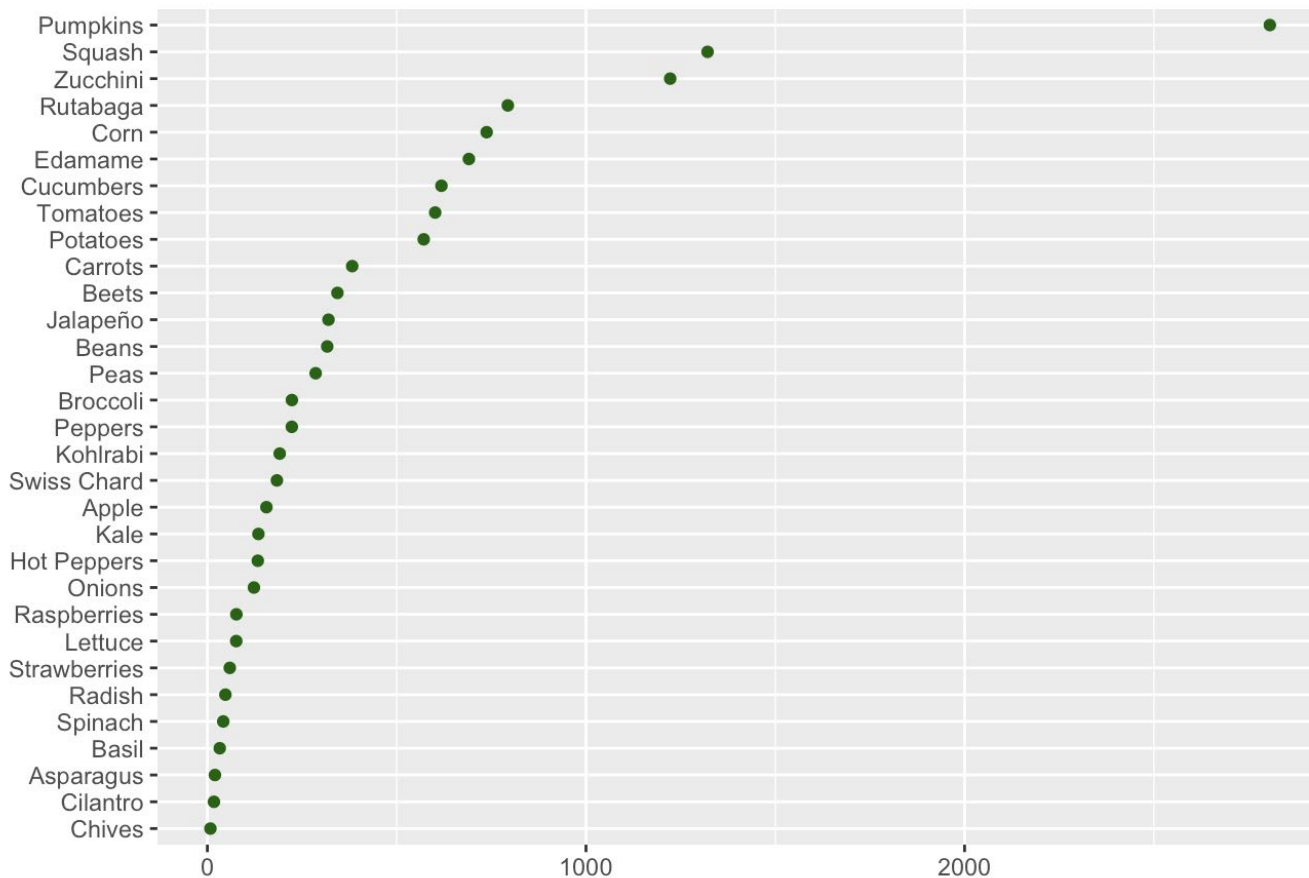


```

garden_harvest %>%
  group_by(vegetable) %>%
  summarise(avg_wt = mean(weight)) %>%
  mutate(vegetable = str_to_title(vegetable)) %>%
  ggplot(aes(x = avg_wt, y = fct_reorder(vegetable, avg_wt))) +
  labs(title = "Average weight of each vegetable harvested",
       x = "",
       y = "") +
  geom_point(color = "darkgreen")

```

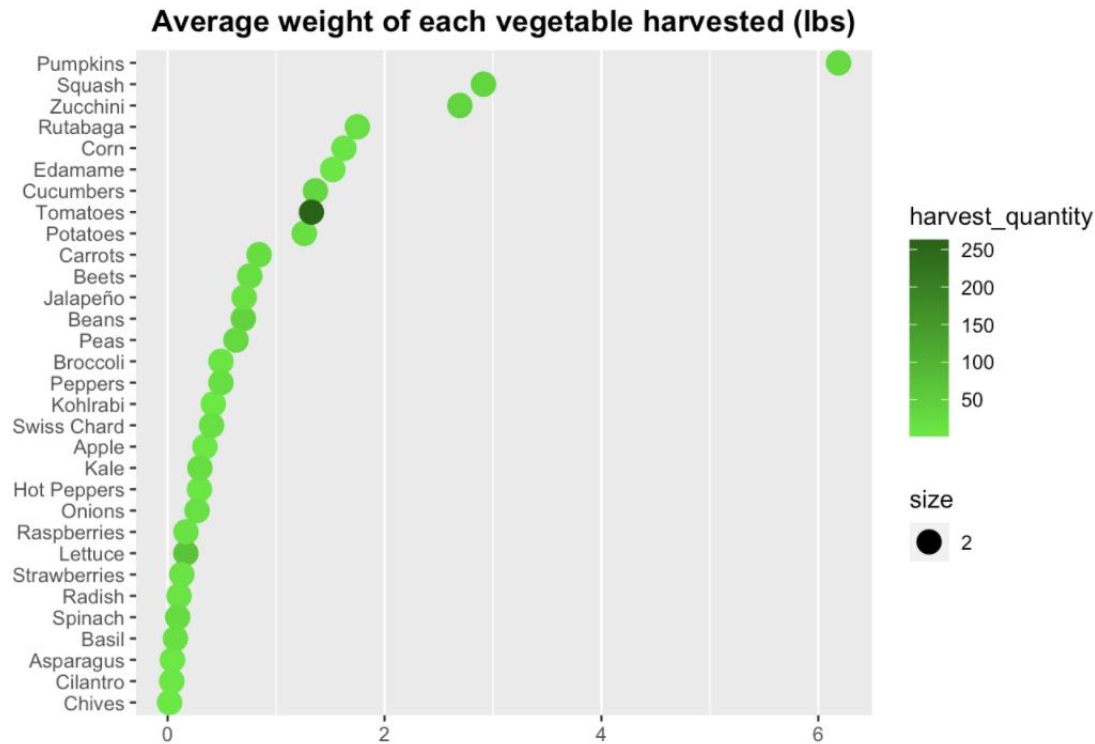
Average weight of each vegetable harvested



```

garden_harvest %>%
  group_by(vegetable) %>%
  summarise(avg_wt_lbs = mean(weight)*0.00220462,
            harvest_quantity = n()) %>%
  mutate(vegetable = str_to_title(vegetable)) %>%
  ggplot(aes(x = avg_wt_lbs, y = fct_reorder(vegetable, avg_wt_lbs), size = 2)) +
  labs(title = "Average weight of each vegetable harvested (lbs)",
       x = "",
       y = "",
       caption = "Author : Chloé Nance") +
  geom_point(aes( color = harvest_quantity)) +
  scale_colour_gradient(low = "green2", high = "darkgreen") +
  theme(panel.grid.major.y = element_blank(),
        plot.title = element_text(face = "bold", hjust = .5),
        plot.caption = element_text(face = "bold"))

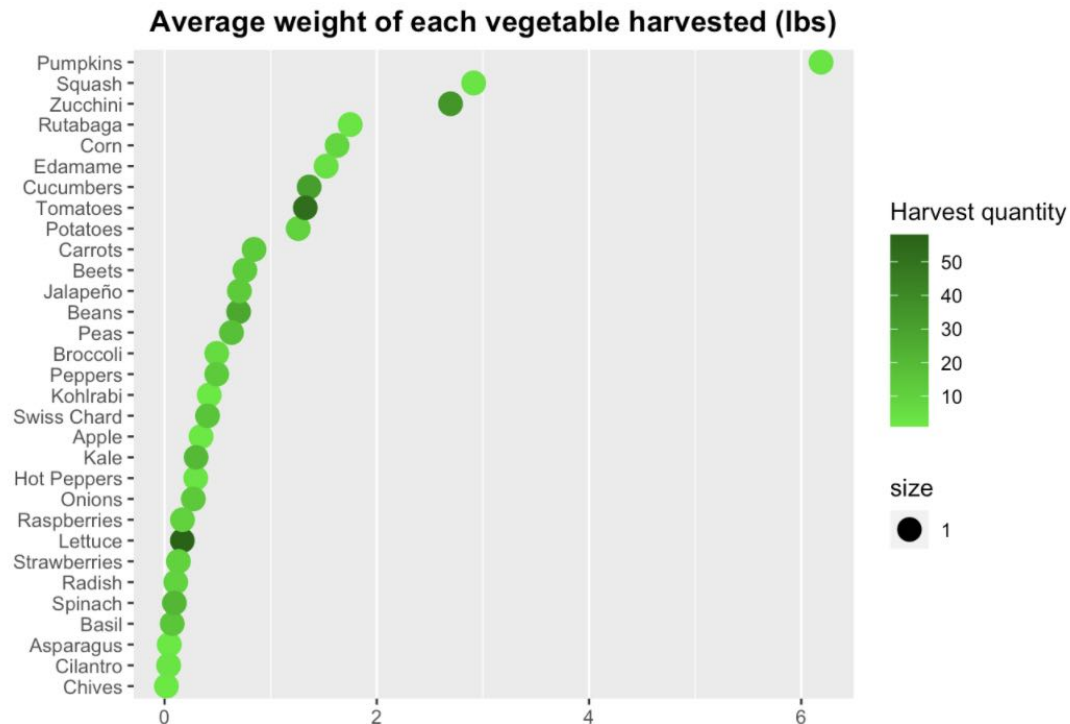
```



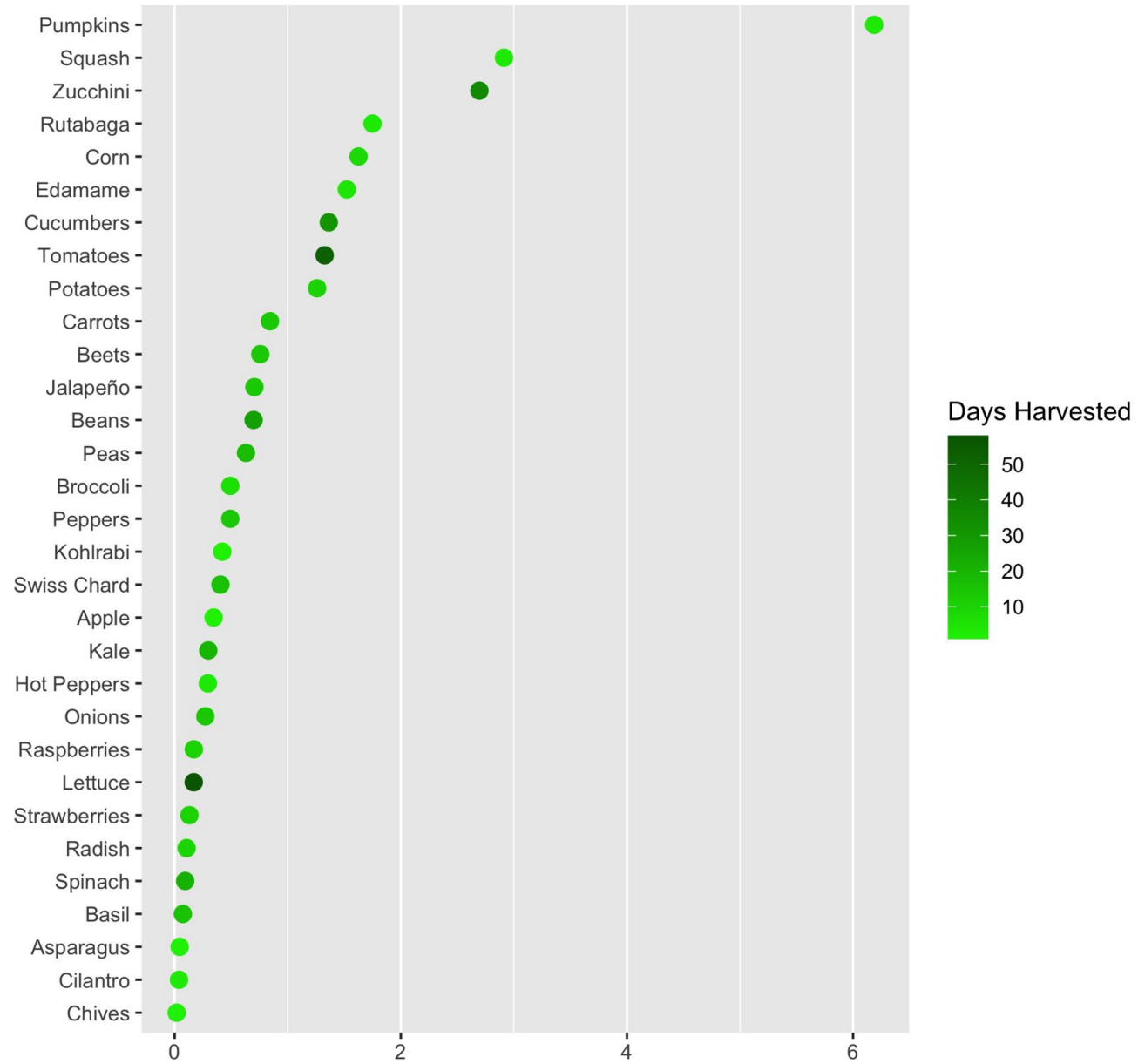
```

garden_harvest %>%
  group_by(vegetable) %>%
  summarise(avg_wt_lbs = mean(weight)*0.00220462,
            n_days = n_distinct(date)) %>%
  mutate(vegetable = str_to_title(vegetable)) %>%
  ggplot(aes(x = avg_wt_lbs, y = fct_reorder(vegetable, avg_wt_lbs))) +
  labs(title = "Average weight of each vegetable harvested (lbs)",
       x = "",
       y = "",
       caption = "Author : Chloé Nance",
       color = "Harvest quantity") +
  geom_point(aes(color = n_days,
                size = 1)) +
  scale_colour_gradient(low = "green2", high = "darkgreen") +
  theme(panel.grid.major.y = element_blank(),
        plot.title = element_text(face = "bold", hjust = .5),
        plot.caption = element_text(face = "bold"))

```



Average weight of each vegetable harvested (lbs)



Thank you!

