STRAWBERRY_REPORT BY GROUP 8

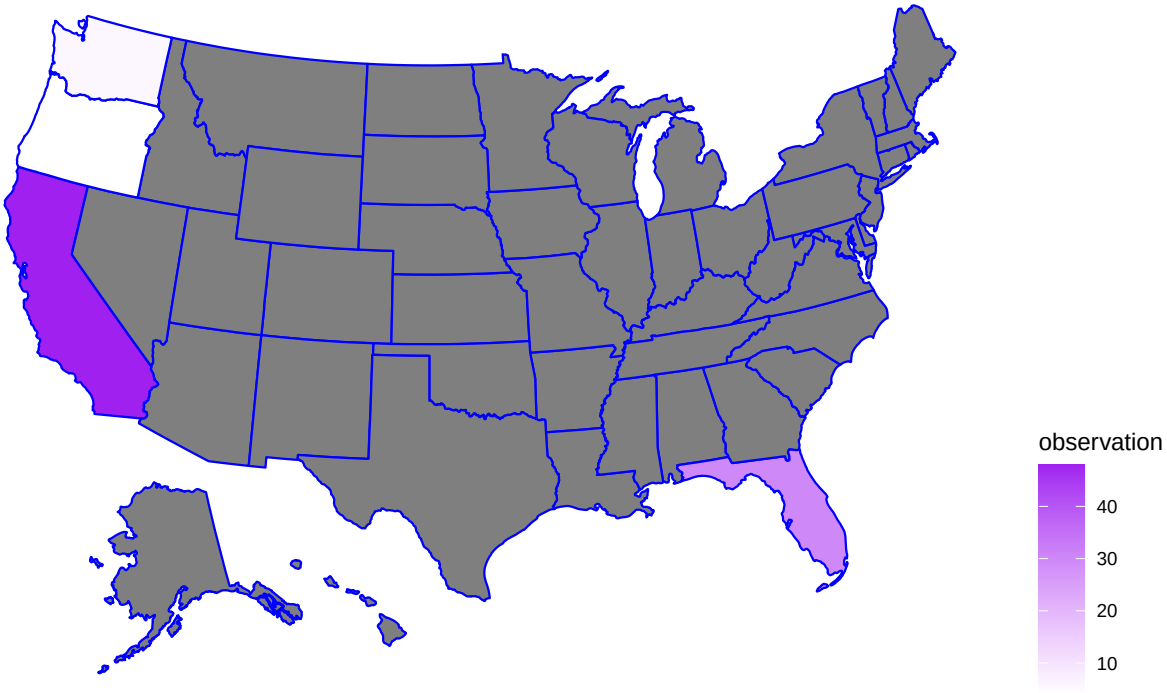
Group 8

11/1/2021

Introduction

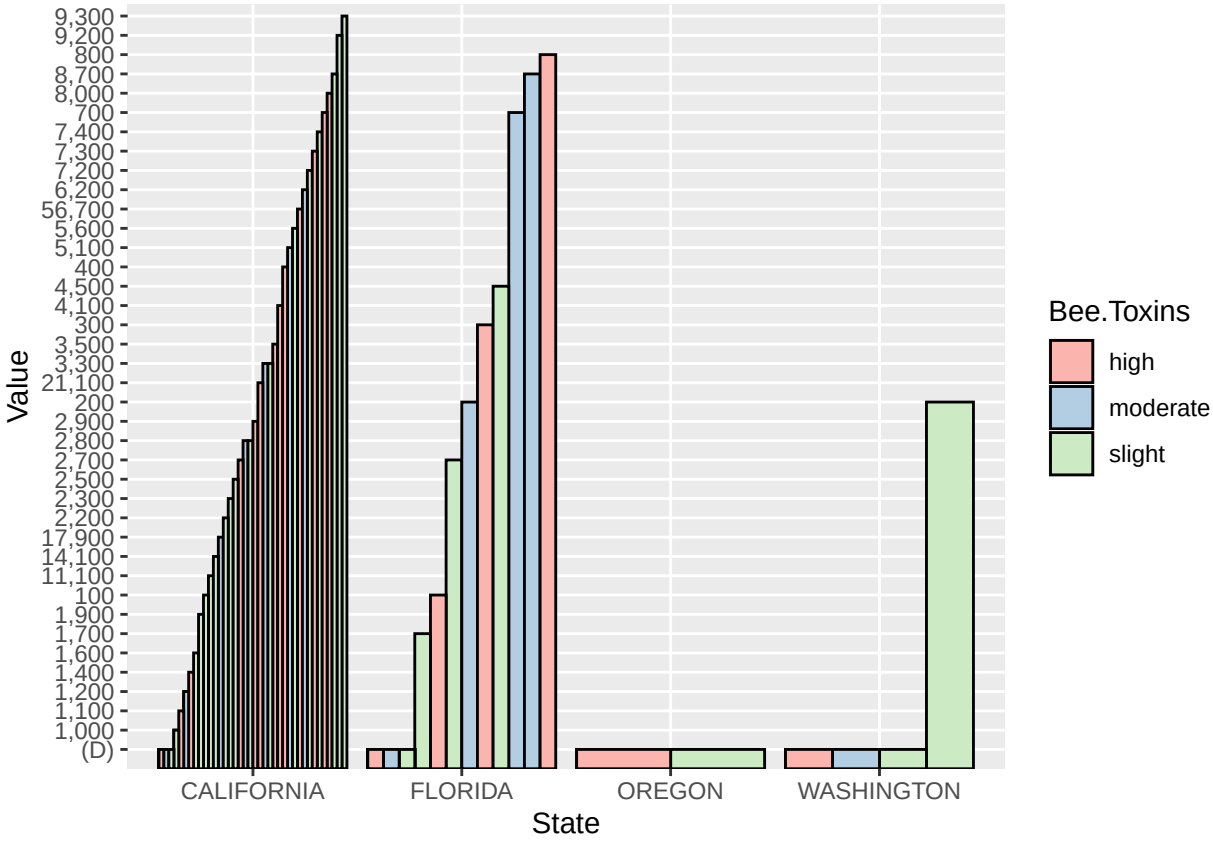
After wrangling data, we have the dataset from only 4 states, which are California, Florida, Oregon and Washington. And we filtered the whole dataset by measured in pounds. By counting the observation grouped by State, we have a map plot, which showed in the California, there are more observations. The question we want to figure out is that bee toxin levels in strawberry chemicals specially in California.

Map of Distribution of Data



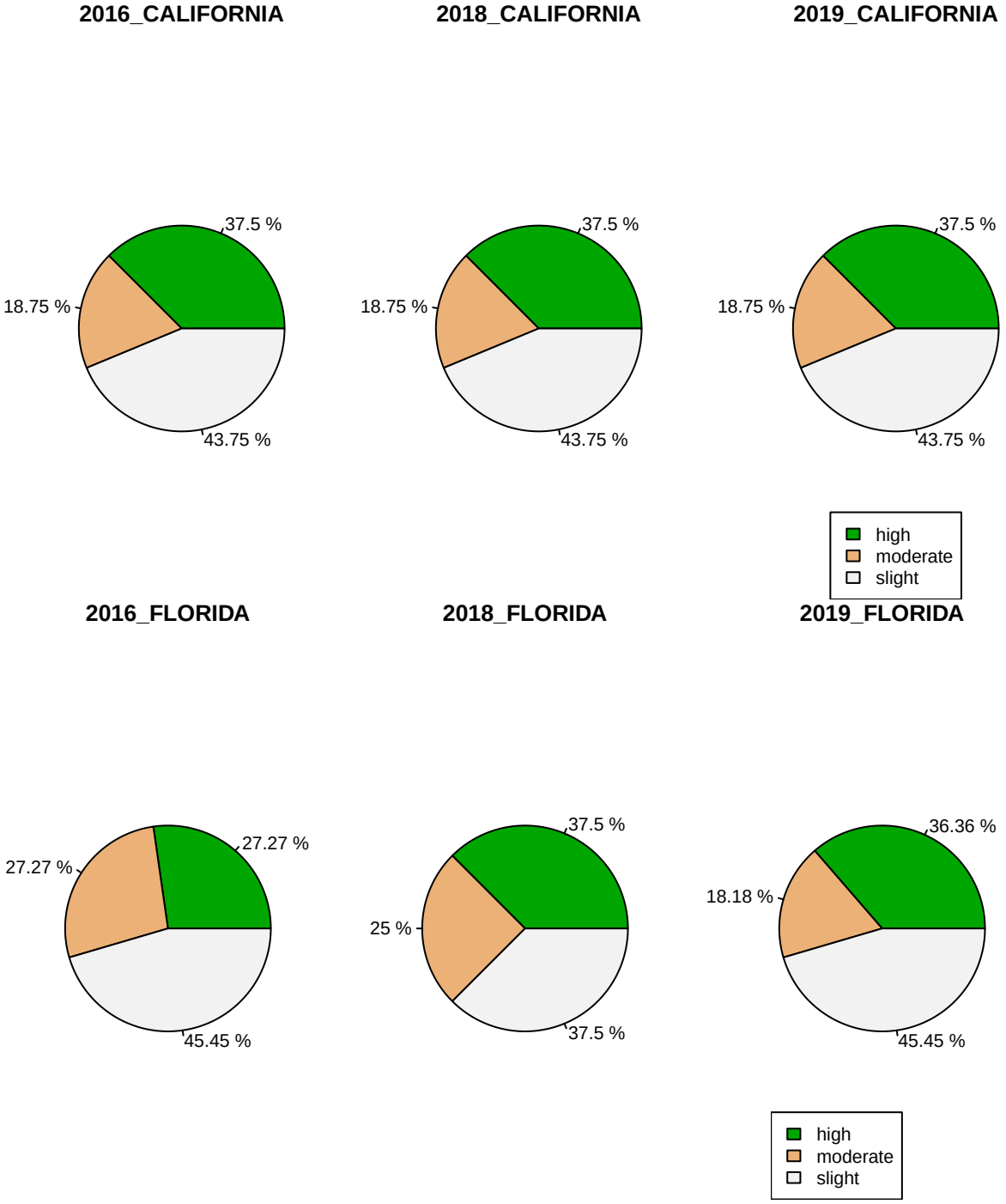
Exploratory data analysis

First, we created a barplot grouped by state shows the value of bee toxin levels, with years combined. We can see that we have most data observations in California.

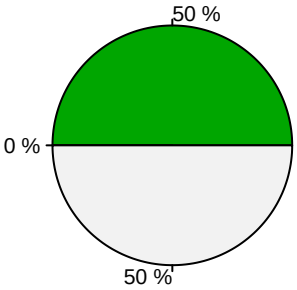


Pie Plots

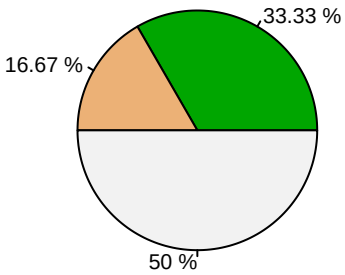
The pie plots show in different years and states the percentage of chemicals with different levels of bee toxins. it shows the variance of bee toxin.



2016_OREGON

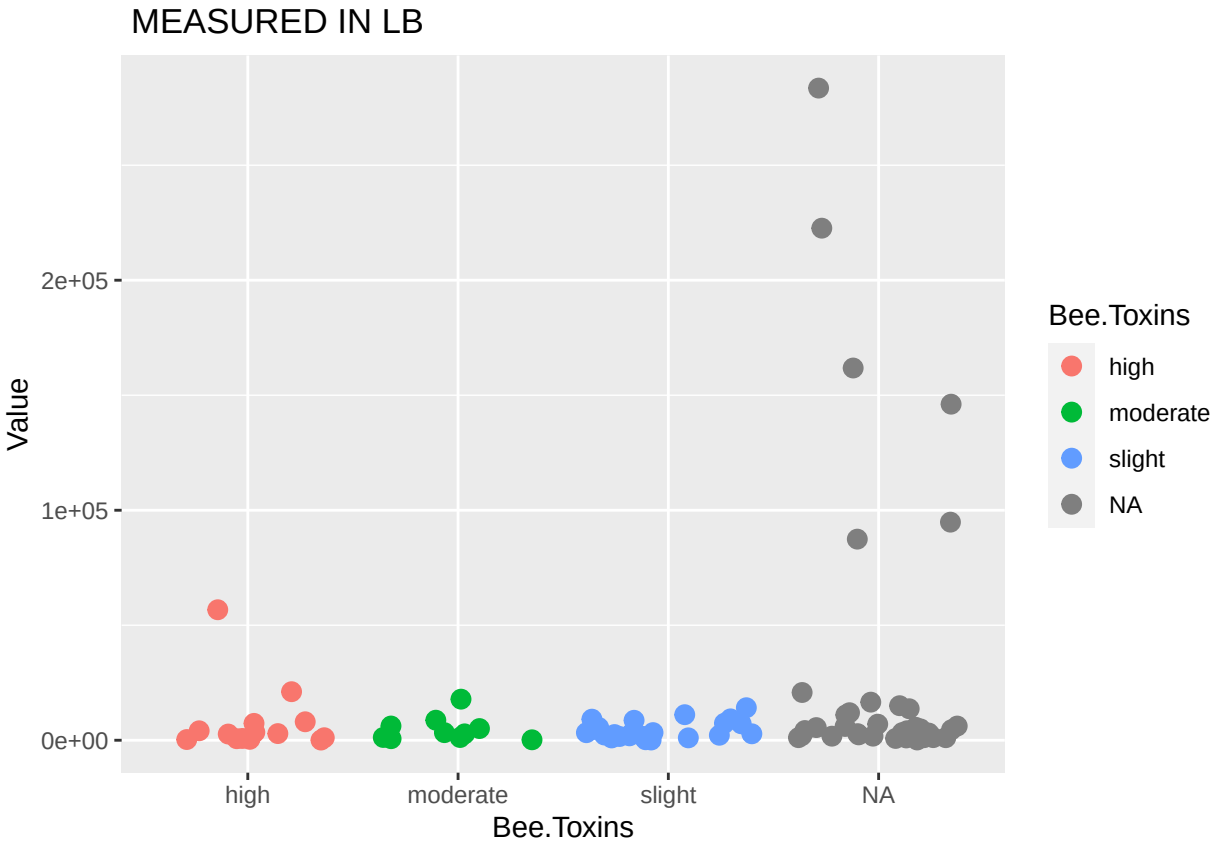


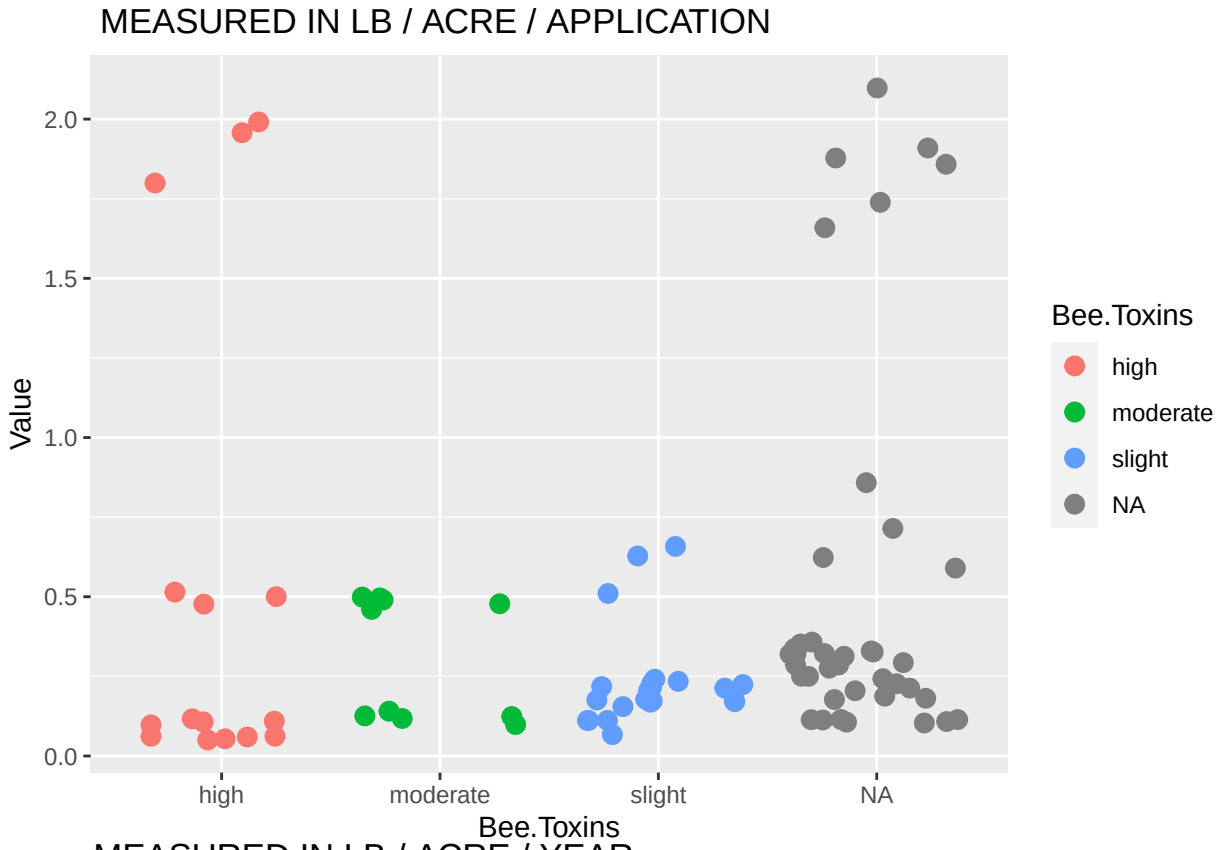
2016_WASHINGTON

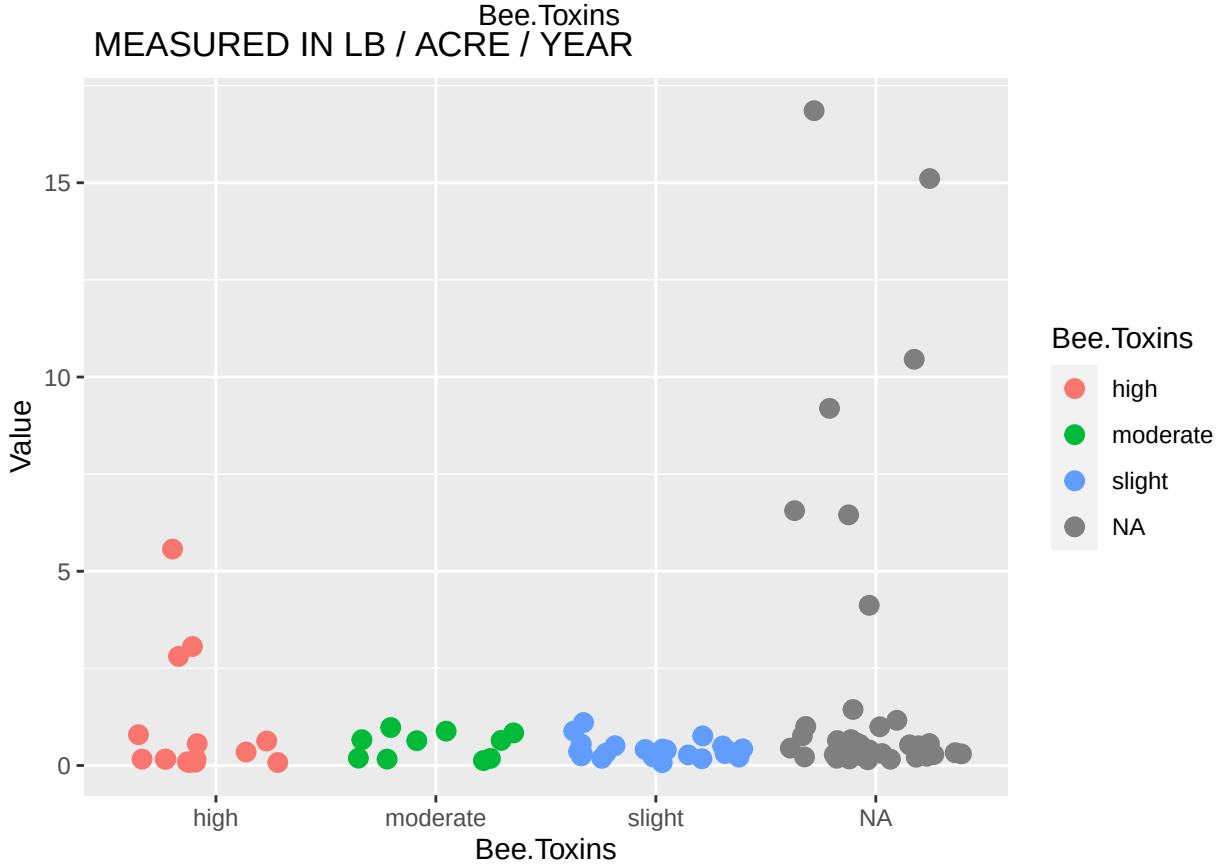


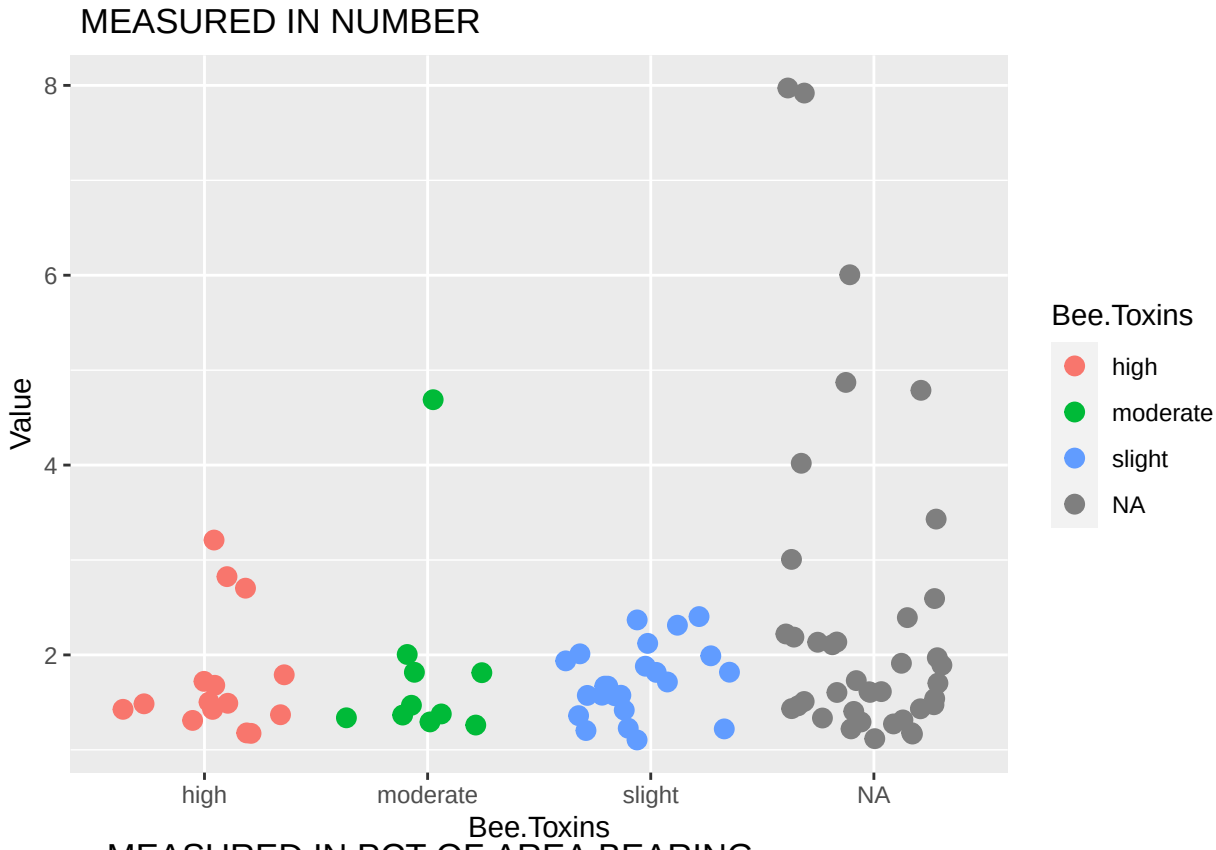
Scatter Plots

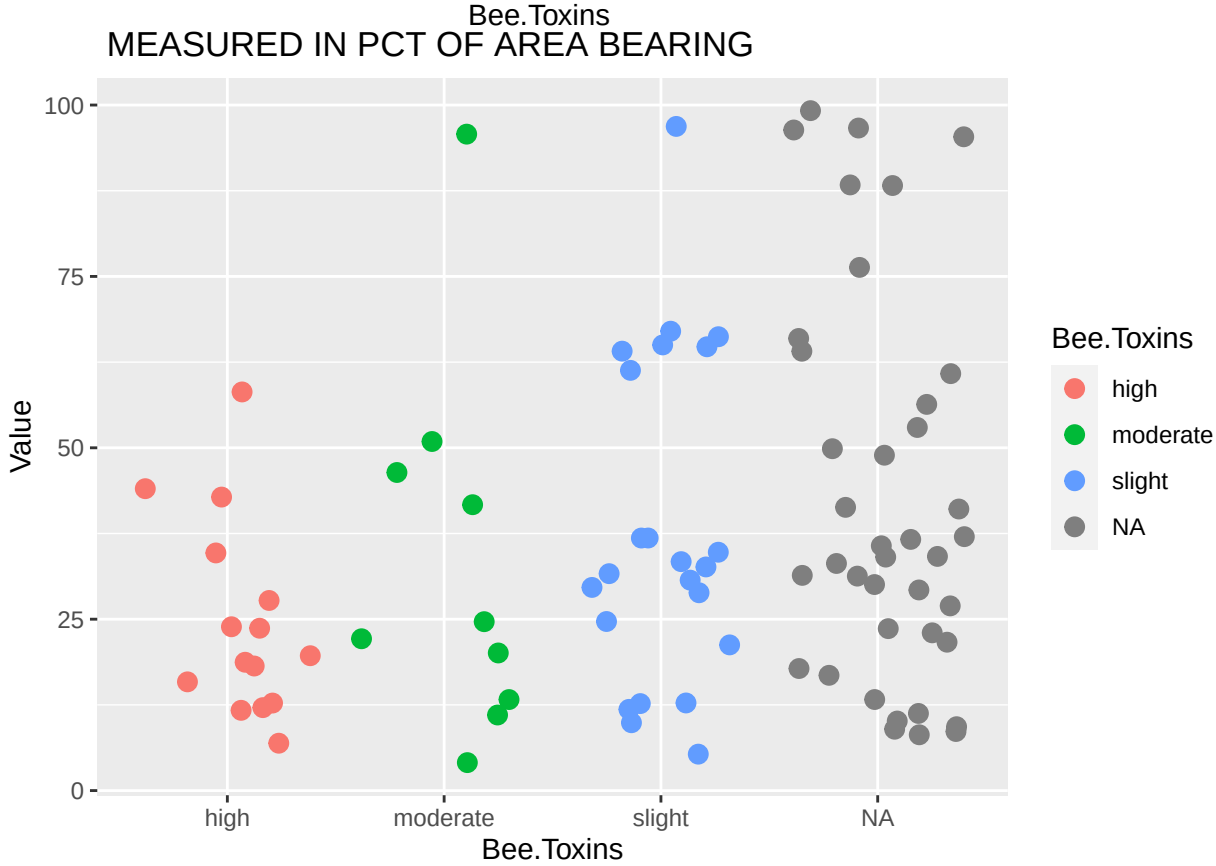
First, we have5 scatter plots show the splits among the measurement groups, which are measured in LB, measured in LB/ACRE/APPLICATION, measured in LB/ACRE/YEAR,measured in NUMBER and measured in PCT of AREA BEARING. After we decided to focus on the measured in LB and bee toxins, we have 4 scatter plots that stratify state against bee toxin level.

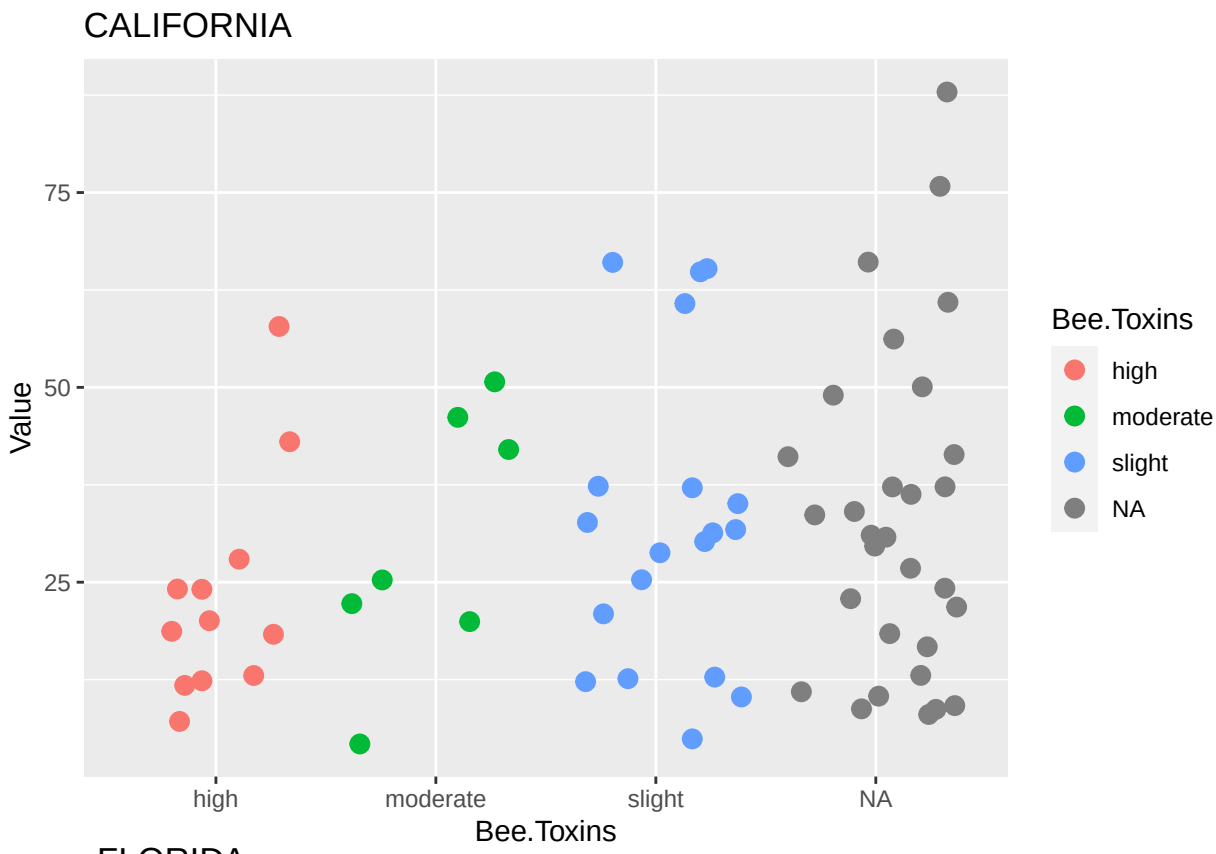


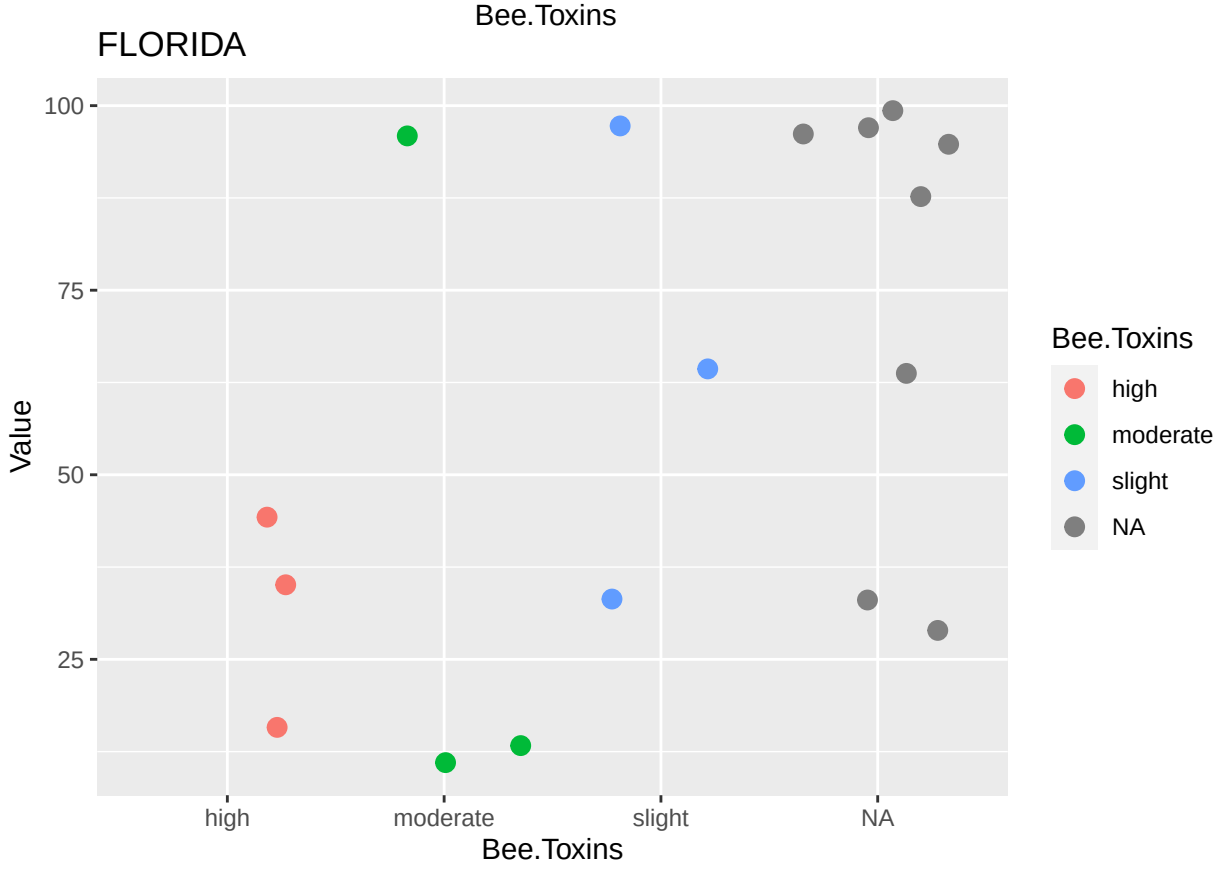

MEASURED IN LB / ACRE / APPLICATION
Value
2.0
1.5
1.0
0.5
0.0
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA

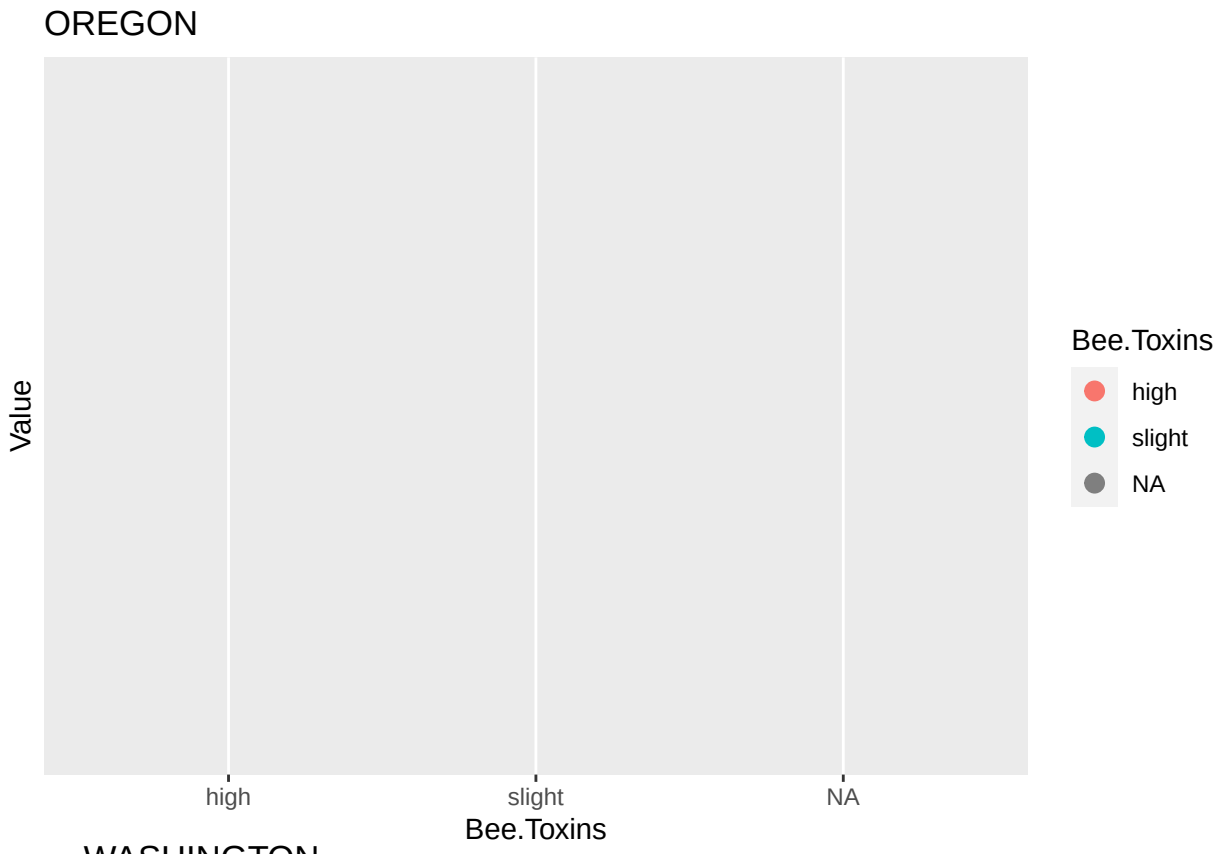

MEASURED IN LB / ACRE / YEAR
Value
15
10
5
0
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA

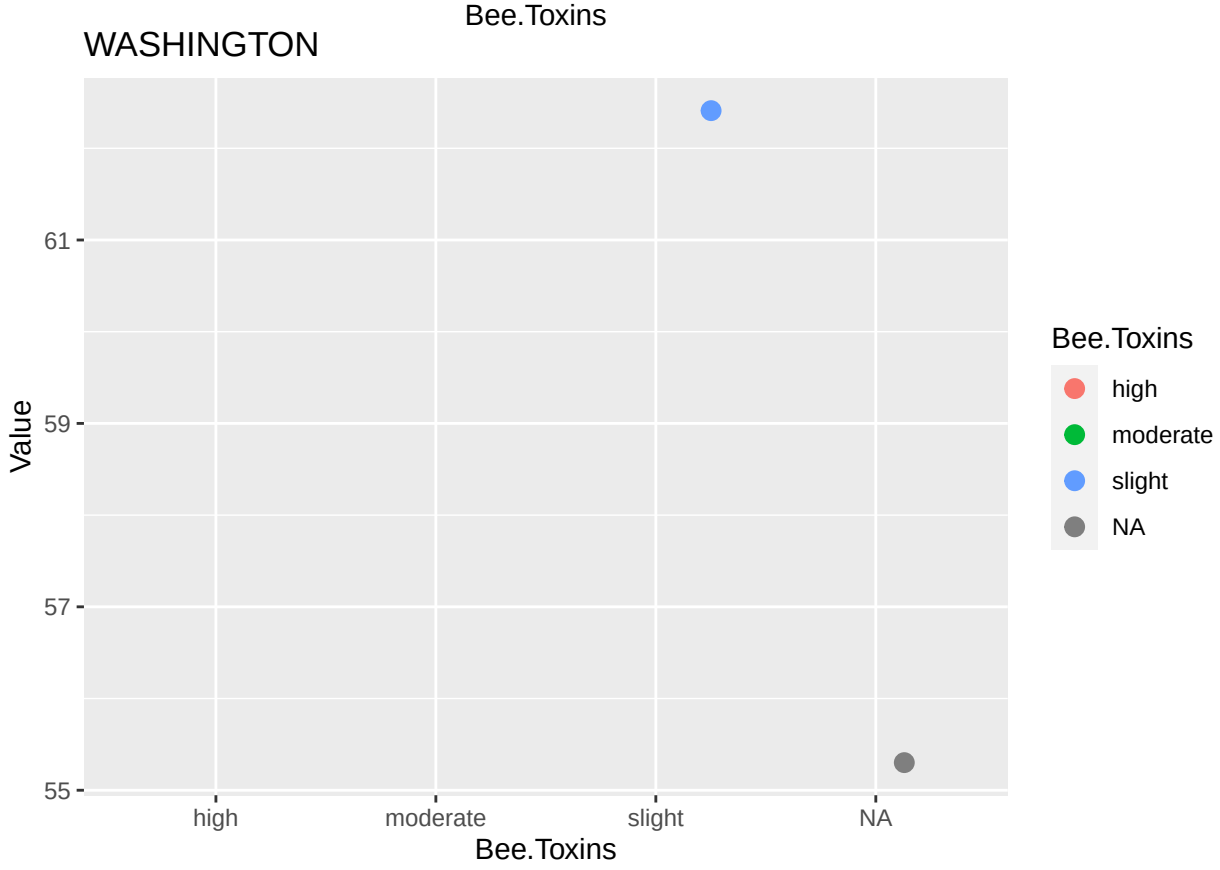

MEASURED IN NUMBER
Value
8
6
4
2
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA


MEASURED IN PCT OF AREA BEARING
Value
100
75
50
25
0
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA


CALIFORNIA
75
50
25
Value
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA


FLORIDA
100
75
50
25
Value
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA


OREGON
Value
high
slight
NA
Bee.Toxins
Bee.Toxins
high
slight
NA


WASHINGTON
Value
61
59
57
55
high
moderate
slight
NA
Bee.Toxins
Bee.Toxins
high
moderate
slight
NA

Bee Safe Program

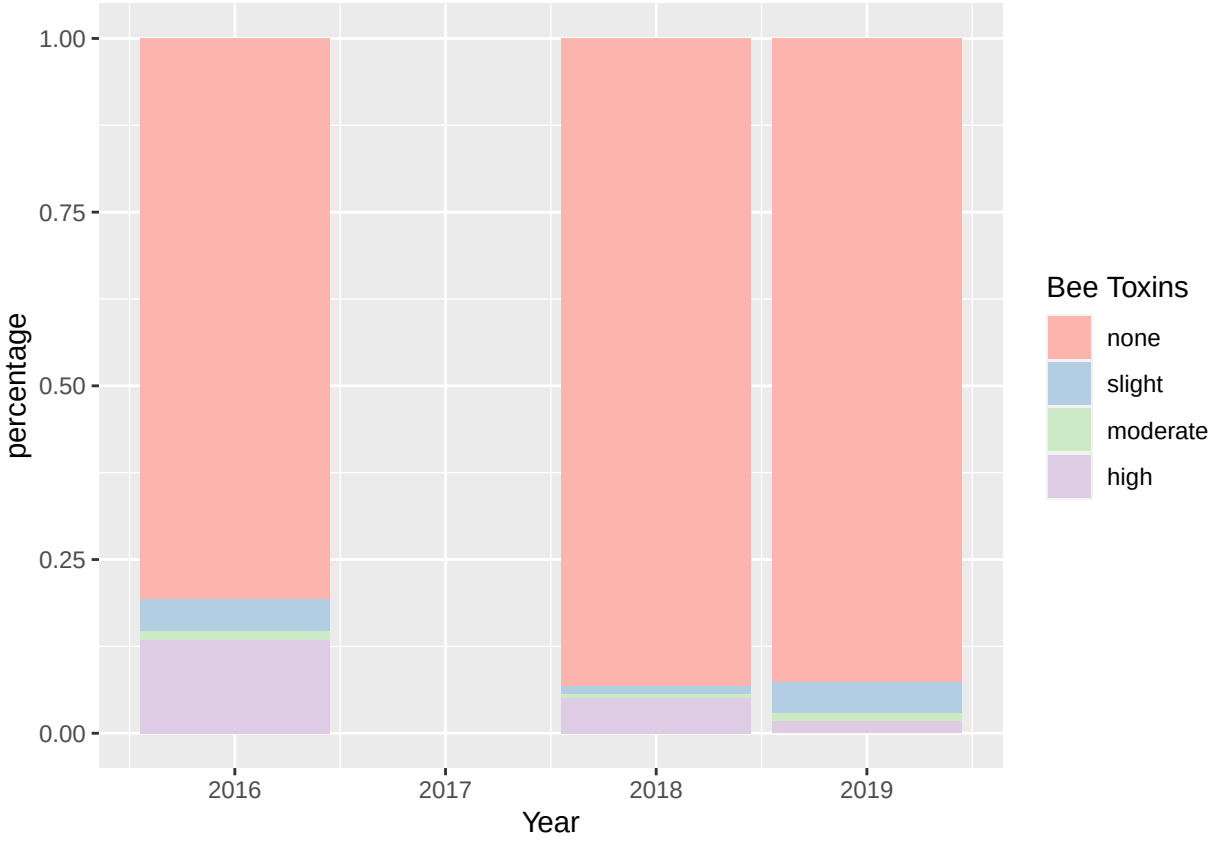
In the mean time, we found out an article about the California State law named Bee safe program, which related to bees and pesticides. https://lao.ca.gov/Publications/Report/3793

This State law requires that begin in 2018-2019, any person intending to apply any pesticide labeled "toxic to bees" to a blossoming plant to ask the local CAC, or designee, whether there are registered beekeepers with colonies located within a one-mile radius of the application site. The CAC provides the pesticide applicator with the contact information of registered beekeepers who wish to be notified in the affected areas.

We would like to know that whether the State Law made the strawberry farmers think that there is a lot of work to worry and they decided use less toxicity pesticides or in the other way.

Stacked Barplot

The stacked barplot shows percentage of use in terms of bee toxins based on the level over all 3 years.



Conclusion

Since we focus on the Bee Safe Program in California, based on th purple bar, we do can see that the percentage of the pesticide's usage which included high bee toxins is decreasing. Therefore, we roughly draw a conclusion that the Bee Safe Program indeed In the future, we should analyze more related data sets and give a more accurate conclusion.