

A decorative border of various green plant silhouettes, including ferns, grasses, and flowering stems, frames the top and sides of the slide. The plants are rendered in a light green color against a white background.

# Plant Propagation Lab

Gardenia propagation by  
softwood cuttings



# Gardenia propagation by softwood cuttings



# Materials and Methods

Auxin treatment is compared to a nontreated control. Two auxin sources each with liquid and talc formulations were used. For some auxin source/formulation combinations more than one concentration was tested. See graph for treatment details.

Terminal cuttings of Gardenia with approximately 6 inches of stem length were used. Leaves were removed from the node nearest the base of the cutting.

Cuttings were rooted in perlite | vermiculite (50 | 50).

Each treatment was applied to 6 cuttings prior to sticking.



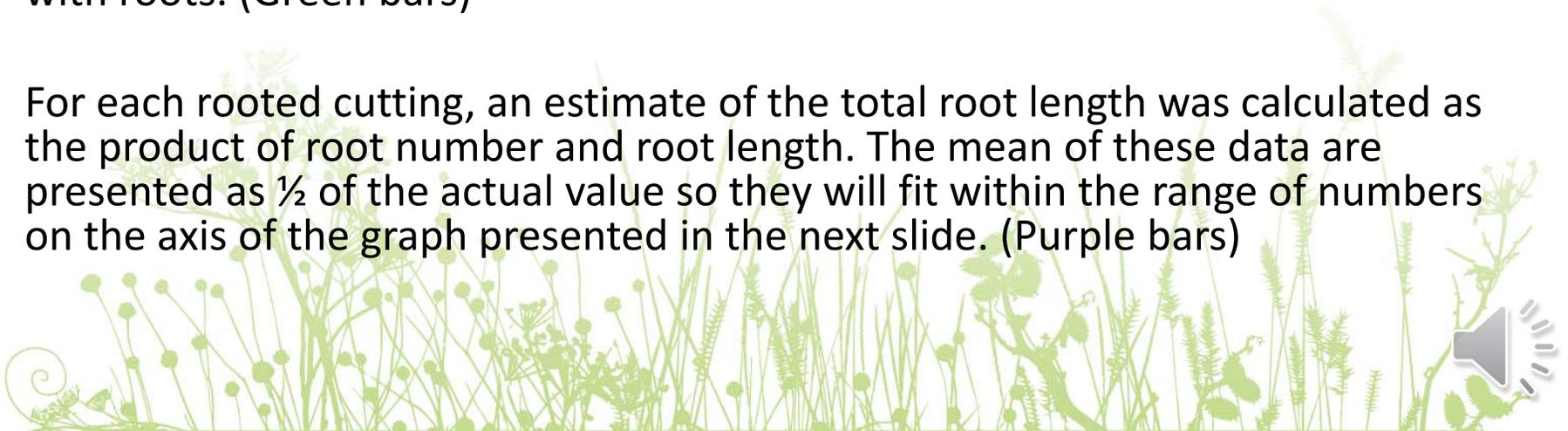
# Data collection and summary

The total number of cuttings with roots were counted for each treatment and used to calculate a rooting percentage. This mean was calculated based on the proportion of the 6 cuttings with roots. (Blue bars)

For each rooted cutting, the number of roots originating from the cutting were counted. These mean of these data was calculated based only on cuttings with roots. (Red bars)

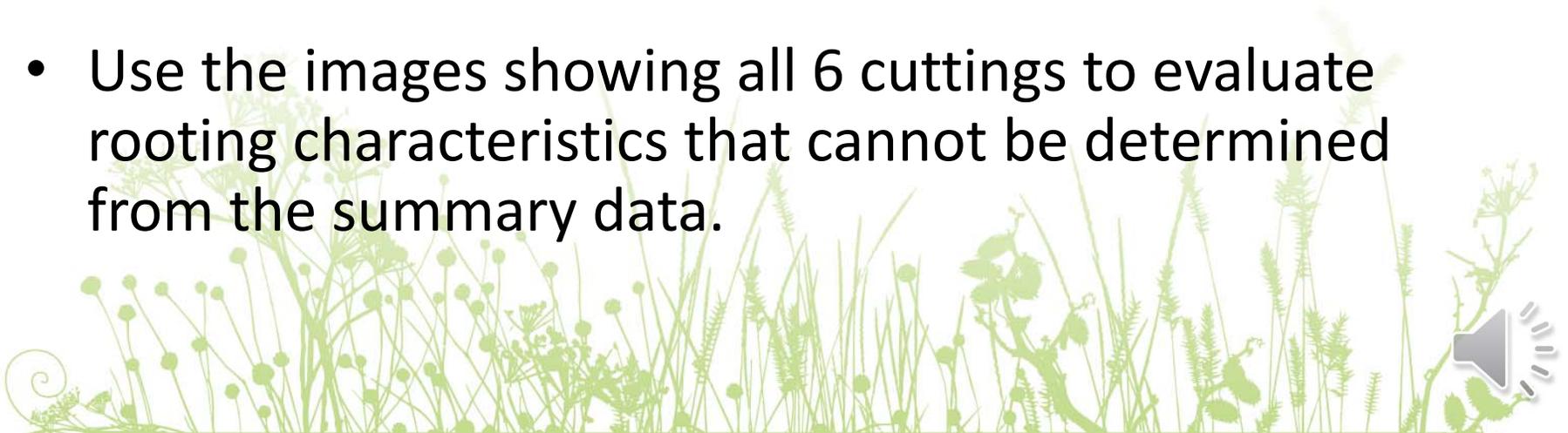
For each rooted cutting, the length of the longest root was measured to the nearest cm. These mean of these data was calculated based only on cuttings with roots. (Green bars)

For each rooted cutting, an estimate of the total root length was calculated as the product of root number and root length. The mean of these data are presented as  $\frac{1}{2}$  of the actual value so they will fit within the range of numbers on the axis of the graph presented in the next slide. (Purple bars)

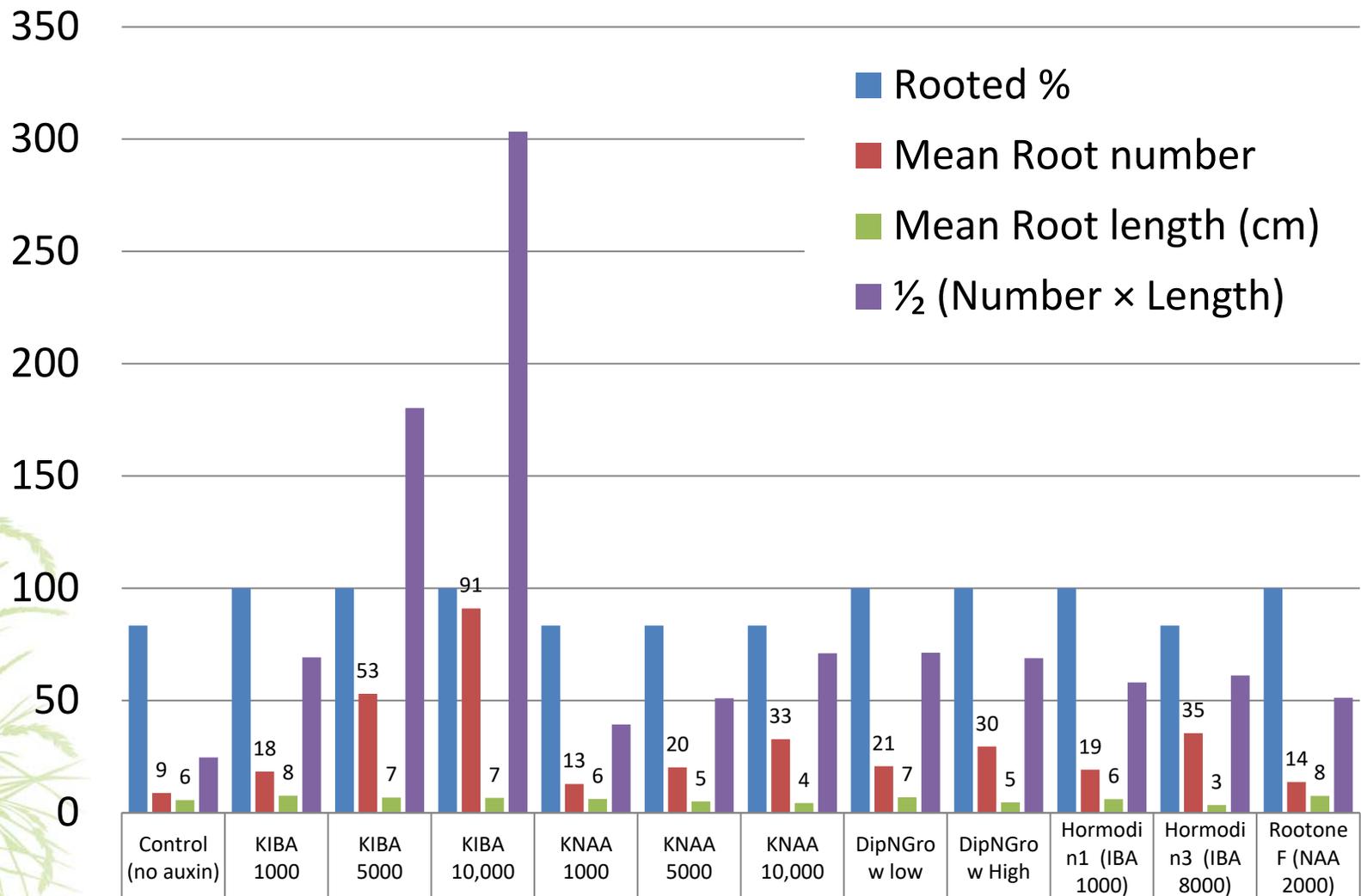


# Synthesis of data

- Review the treatment structure and consider the relationships of the treatment regarding auxin sources, concentrations, and formulations.
- Use the bar graph to evaluate the effects of the treatments on each of the types of data collected.
- Use the images showing all 6 cuttings to evaluate rooting characteristics that cannot be determined from the summary data.



## Propagation of Gardenia with various rooting hormones



■ Rooted %	83	100	100	100	83	83	83	100	100	100	83	100
■ Mean Root number	9	18	53	91	13	20	33	21	30	19	35	14
■ Mean Root length (cm)	6	8	7	7	6	5	4	7	5	6	3	8
■ $\frac{1}{2}$ (Number $\times$ Length)	25	69	180	303	39	51	71	71	69	58	61	51



IBA (ppm)  
0



1,000



5,000



10,000



NAA (ppm)

0

1,000

5,000

10,000



No auxin



IBA  
1,000



Hormodin  
1



Hormodin  
3



Rootone



# Lab Report

Consult your lab instructor for lab report requirements.

As you consider the synthesis of the data consider the treatment structure and the questions you can ask. For example,

Was there a difference in rooting response between similar concentrations of different auxin sources?

Was there a difference in rooting response between similar concentrations of different formulations of the same auxin source?

Are there root quality characteristics that can be observed in the images of the rooted cuttings that may not be reflected in the data collected?

This presentation is also available in a printable format so you may review the individual slides as you prepare your lab report.

