

*Effects of light intensity on
epiphytes' density*

Introduction

Investigating the relationship between light intensity and density of epiphytes.

Epiphytes are defined as plants growing on the other plants non-parasitically.

Fungi, algae, lichens, liverworts, mosses, ferns and flowering plants are examples.

Method of investigation

Use grid paper to measure the density of mosses and lichens and use light meter to measure different light intensity.

Variables need to be controlled

Same species of trees, temperature, relative humidity

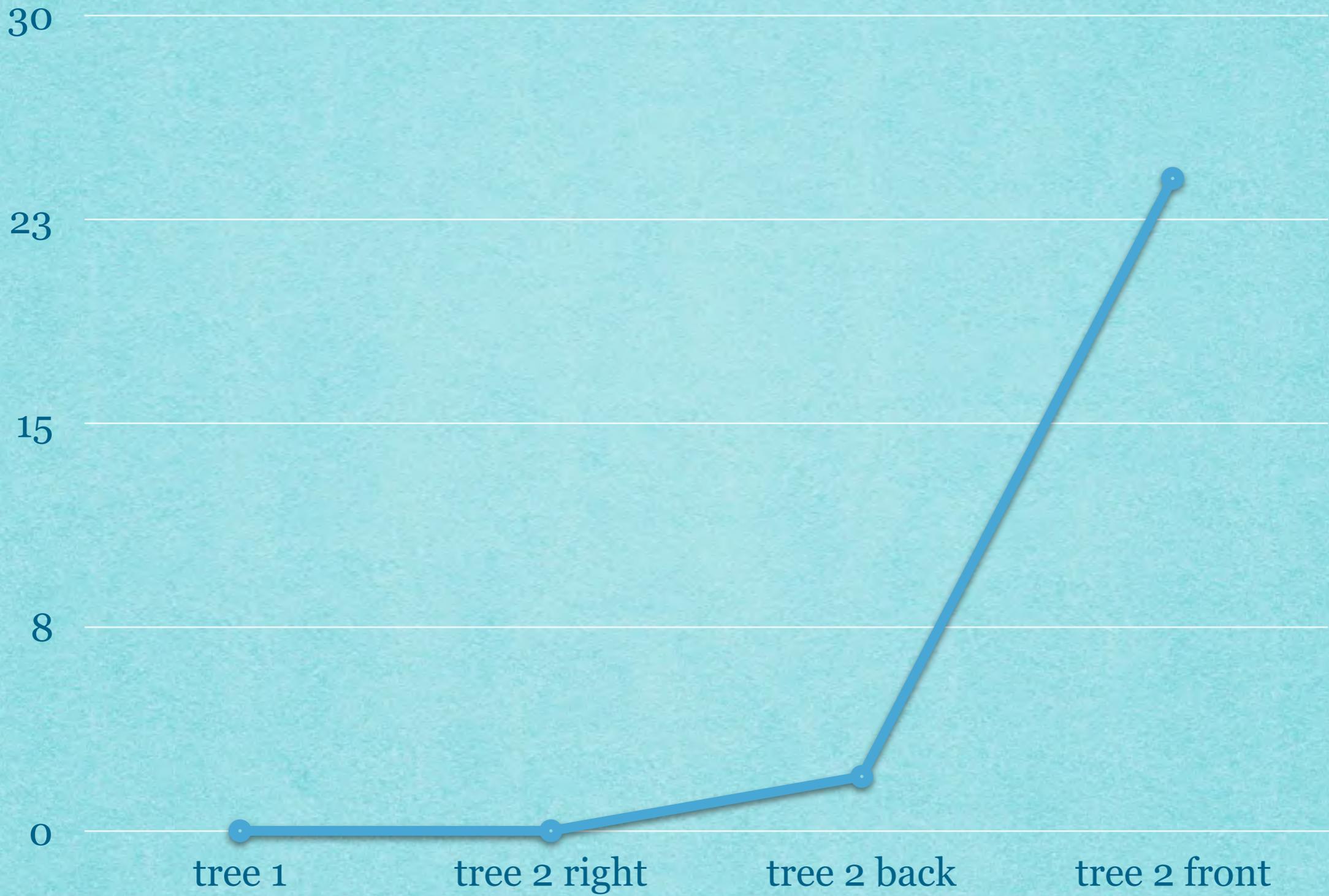
Dependent variable

The density of mosses and lichen

Mosses

	tree 1 (sweet gum)	tree 2 right (sweet gum)	tree 2 back (sweet gum)	
Light intensity (lux)	351	698	20600	99000
Temperature (C)	14.8	17.7	17.1	17.6
wind speed (m/s)	0.4	0	0	0
relative humidity	52%	49%	45%	46%
% area covered	0	0	2	24

Relationship between light intensity and density of mosses



Possible reasons

Mosses are green plants. Most of them contain chlorophyll. They carry out photosynthesis under light conditions. They have higher rate of photosynthesis under high light intensity. this is more favourable for survival of mosses. Therefore they can grow more rapidly.

The % area covered may be affected by other limiting factors such as temperature, humidity and wind speed.



Lichens

	tree 1	tree 2	tree 3	
Light intensity (lux)	35000	1113	1160	991
Temperature (C)	17.5	14.2	14.1	14.8
wind speed (m/s)	0	0.4	0.9	0.4
relative humidity	47%	48%	49%	52%
% area covered	0	28	29.5	0

Relationship between light intensity and density of lichens



Possible reasons

Lichens grow more rapidly under high light intensity. However, lichens cannot grow properly in extreme environmental conditions (very high or low light intensity)

The % area covered may be affected by other limiting factors such as temperature, humidity and wind speed.



▶ Possible errors

- ▶ Insufficient time to collect a significant number of data
- ▶ Sample size is not large enough

Improvements

- ▶ Have a better time management .
- ▶ Collect more data of the tree samples.