

Introduction

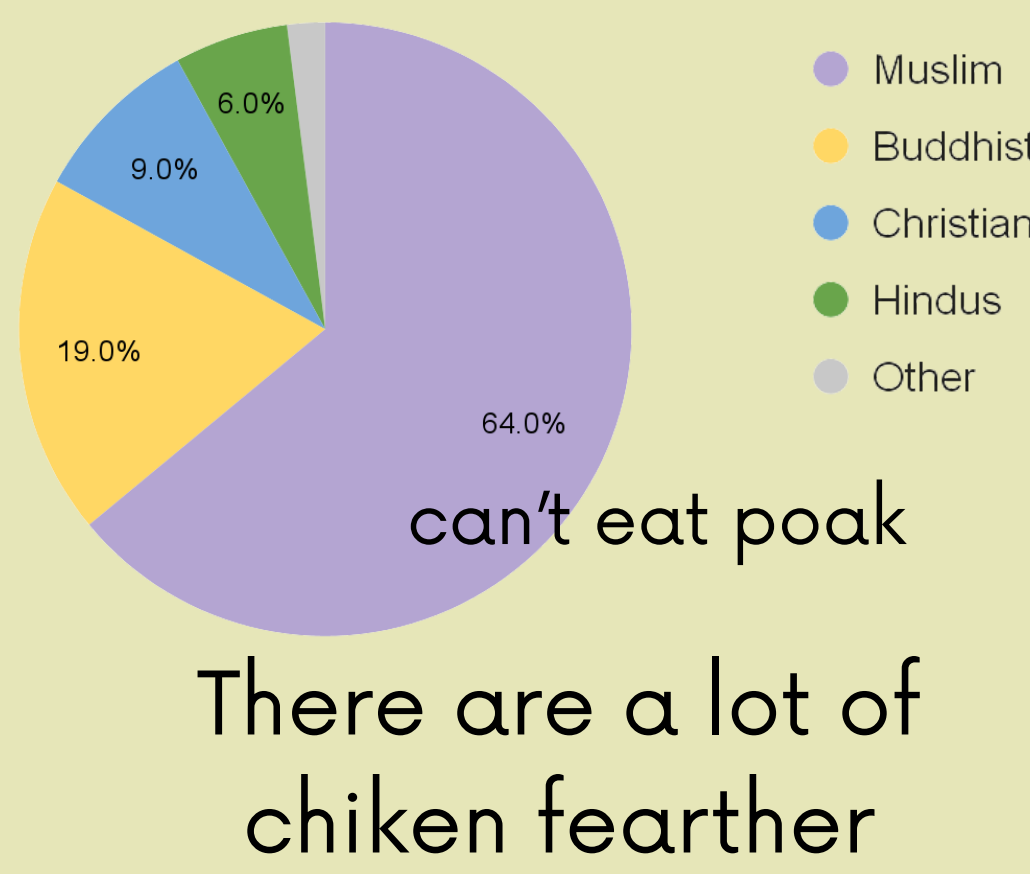
Feather waste

In Japan

Down comforters are the **No.1** bulky waste item in Tokyo

In Malaysia

Religious Composition of Malaysia's Population



Overusing chemical fertilizers

- Harmful to the environment and humans
- Often used to grow crops

Large quantities of mesocarp fiber

Empty Fruit Bunch



Coco Peat



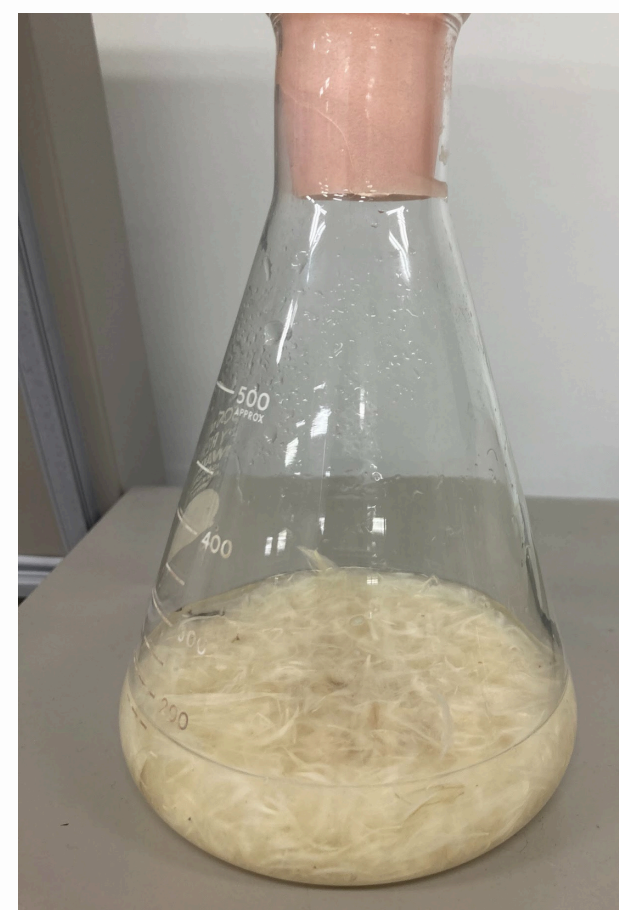
Objective

Producing organic fertilizer from feather waste that is as effective as chemical fertilizer, and using it to grow vegetables in coco peat.

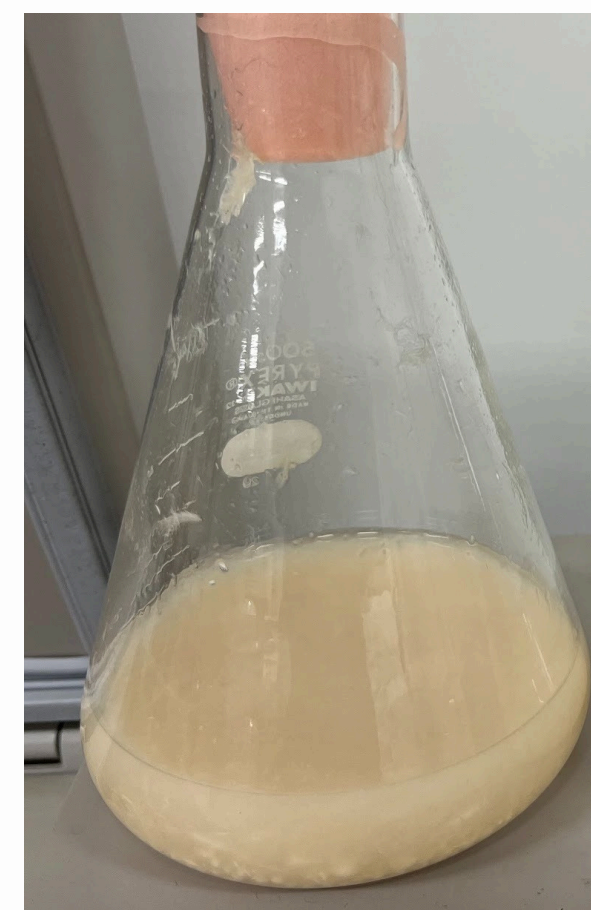
Experimental Method & Results ①

Feather fertilizer (FF) preparation

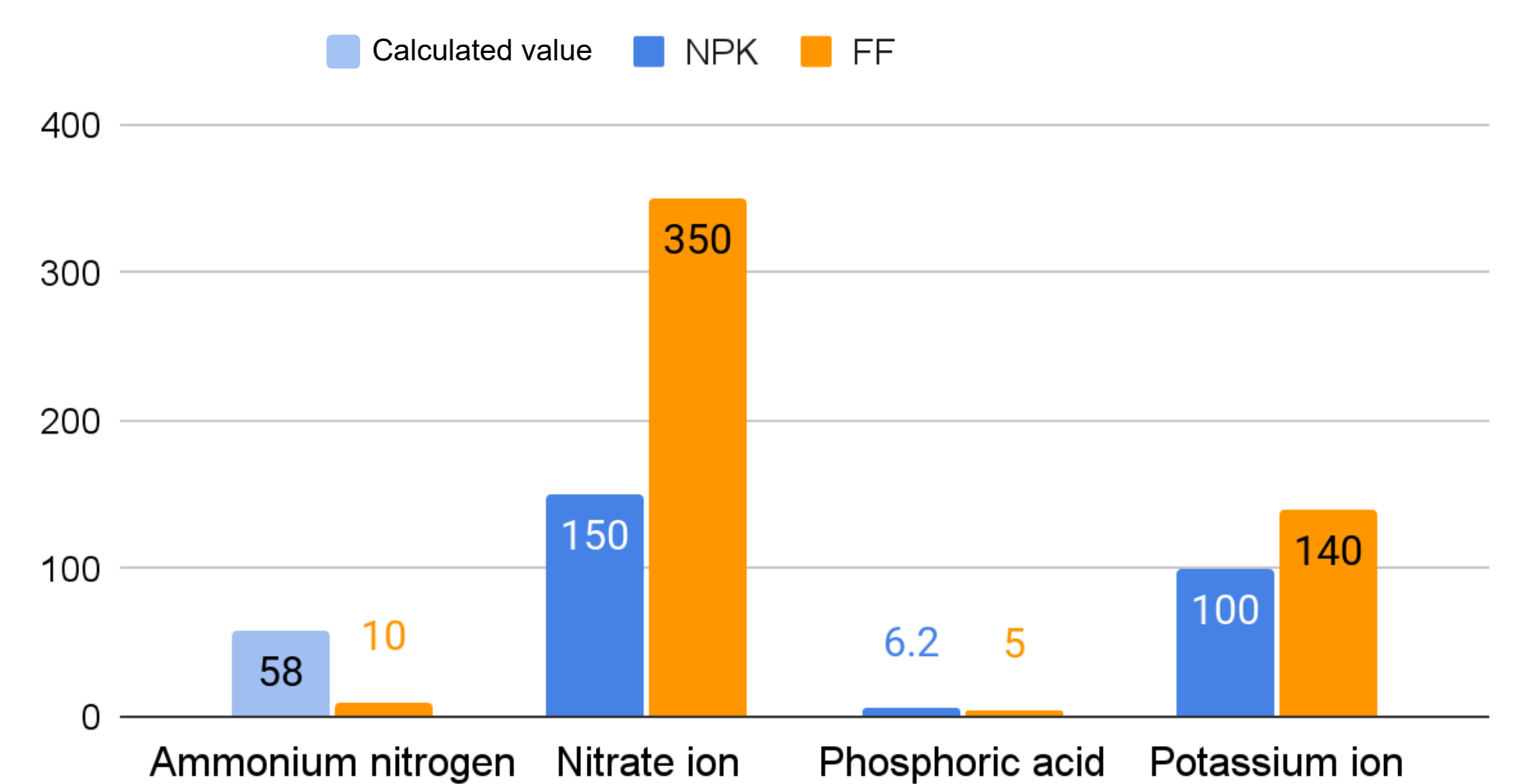
- feather
- salts
- bacteria
- water



Stir for 1~2 weeks



Nutrient content of fertilizer (mg/L)



Experimental Method & Results ②

FF evaluation using spinach

Day 0
plated seeds

Day 7
most have sprouted

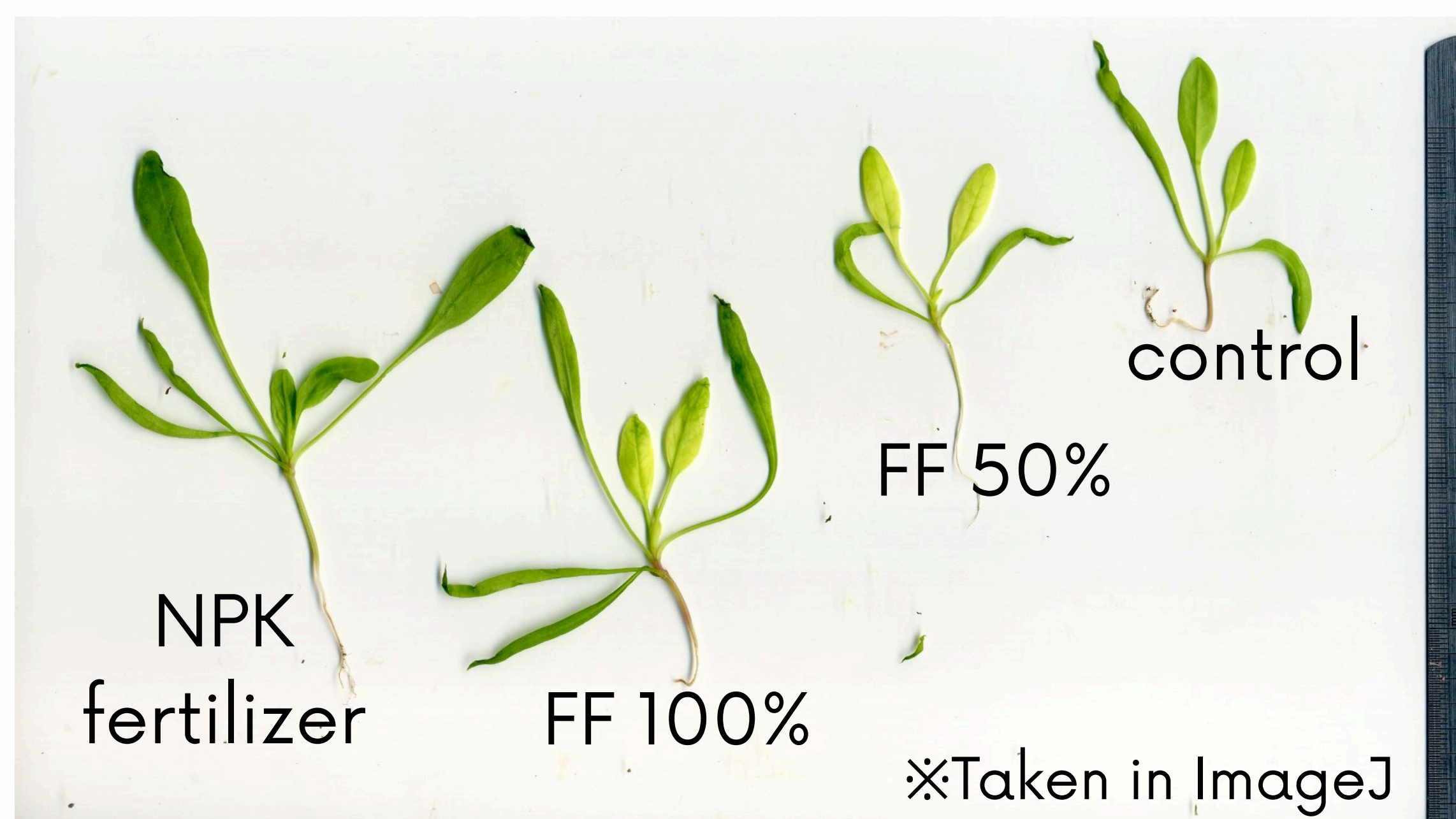
Day 16
applied fertilizers

Day 35
observe the effects

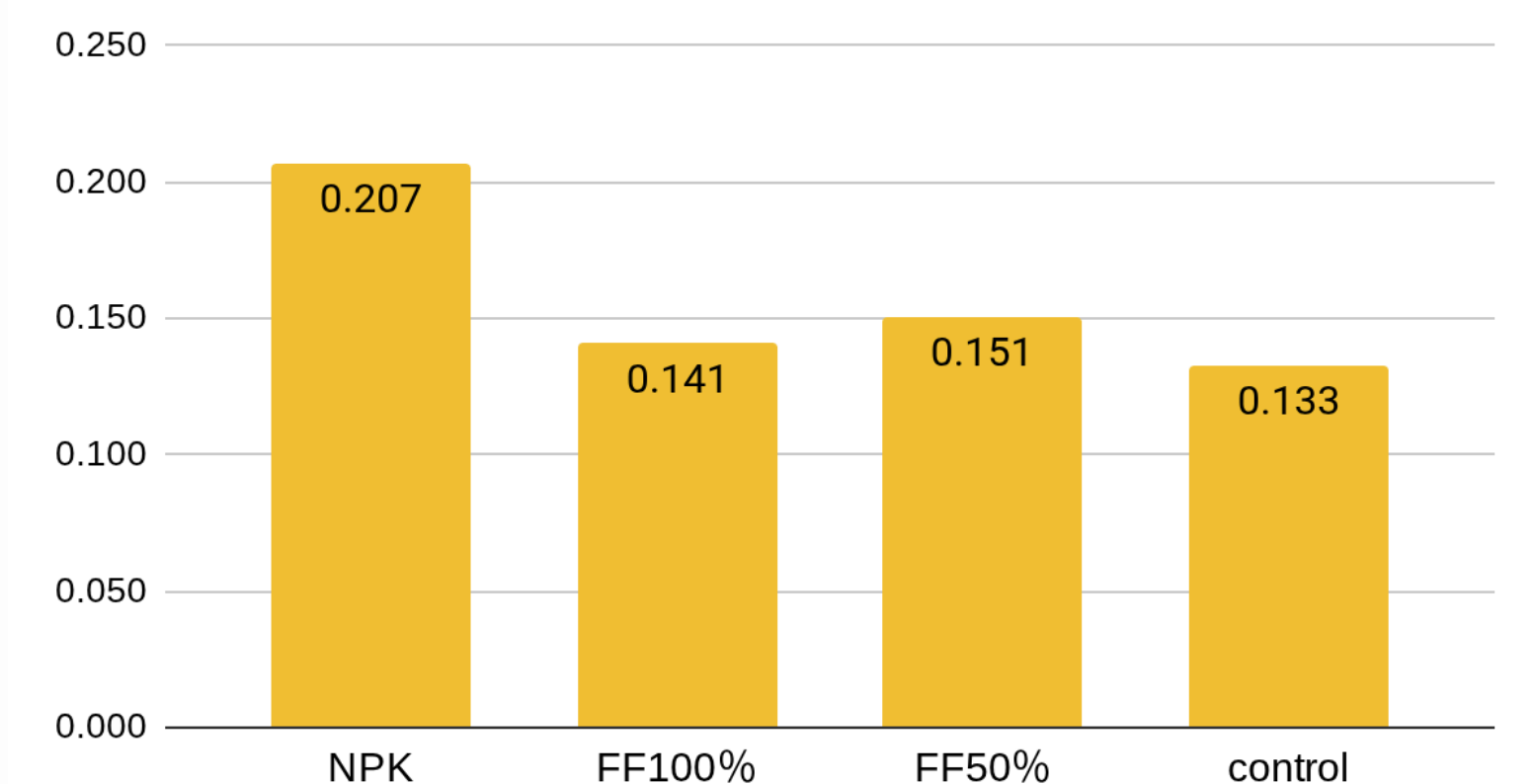
We compared:



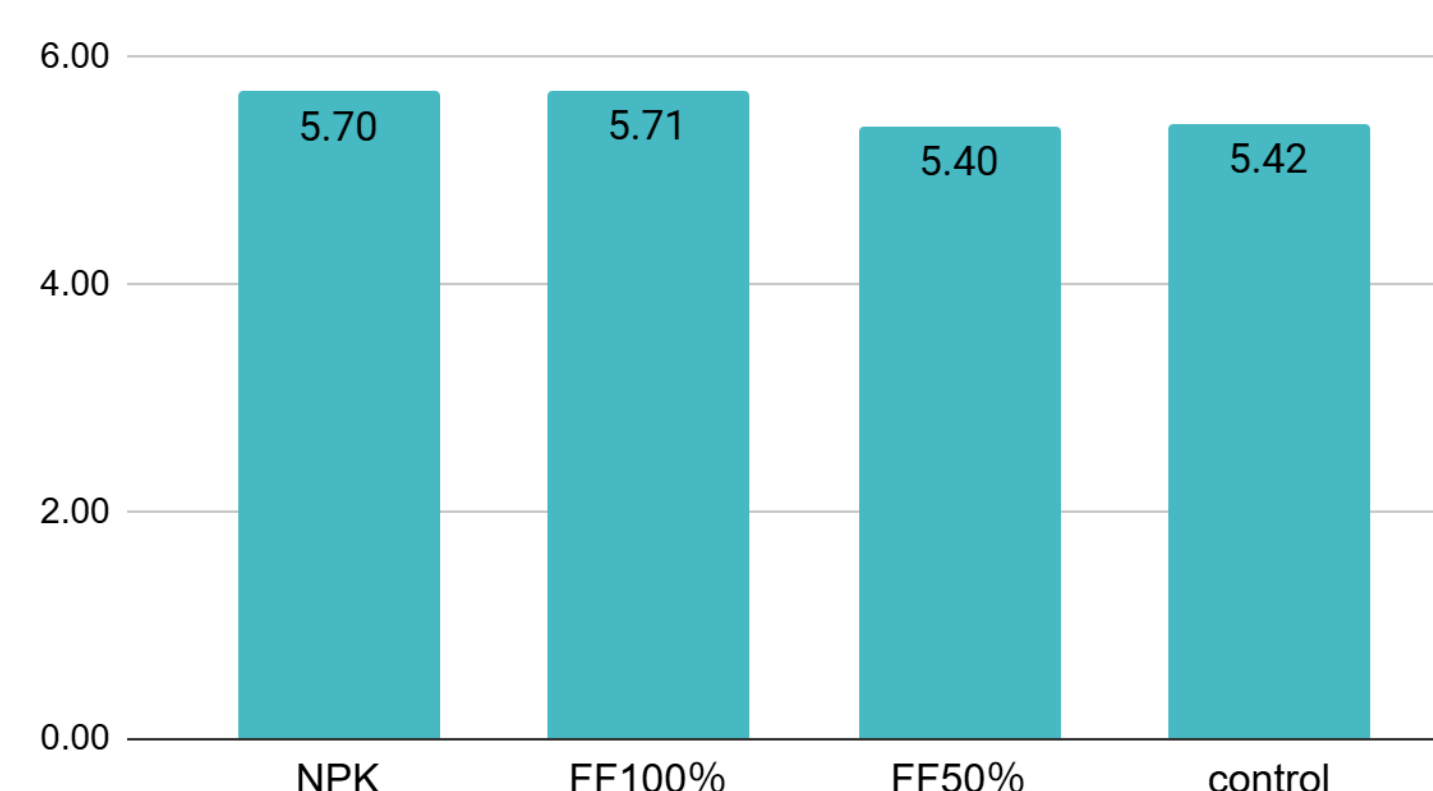
×10



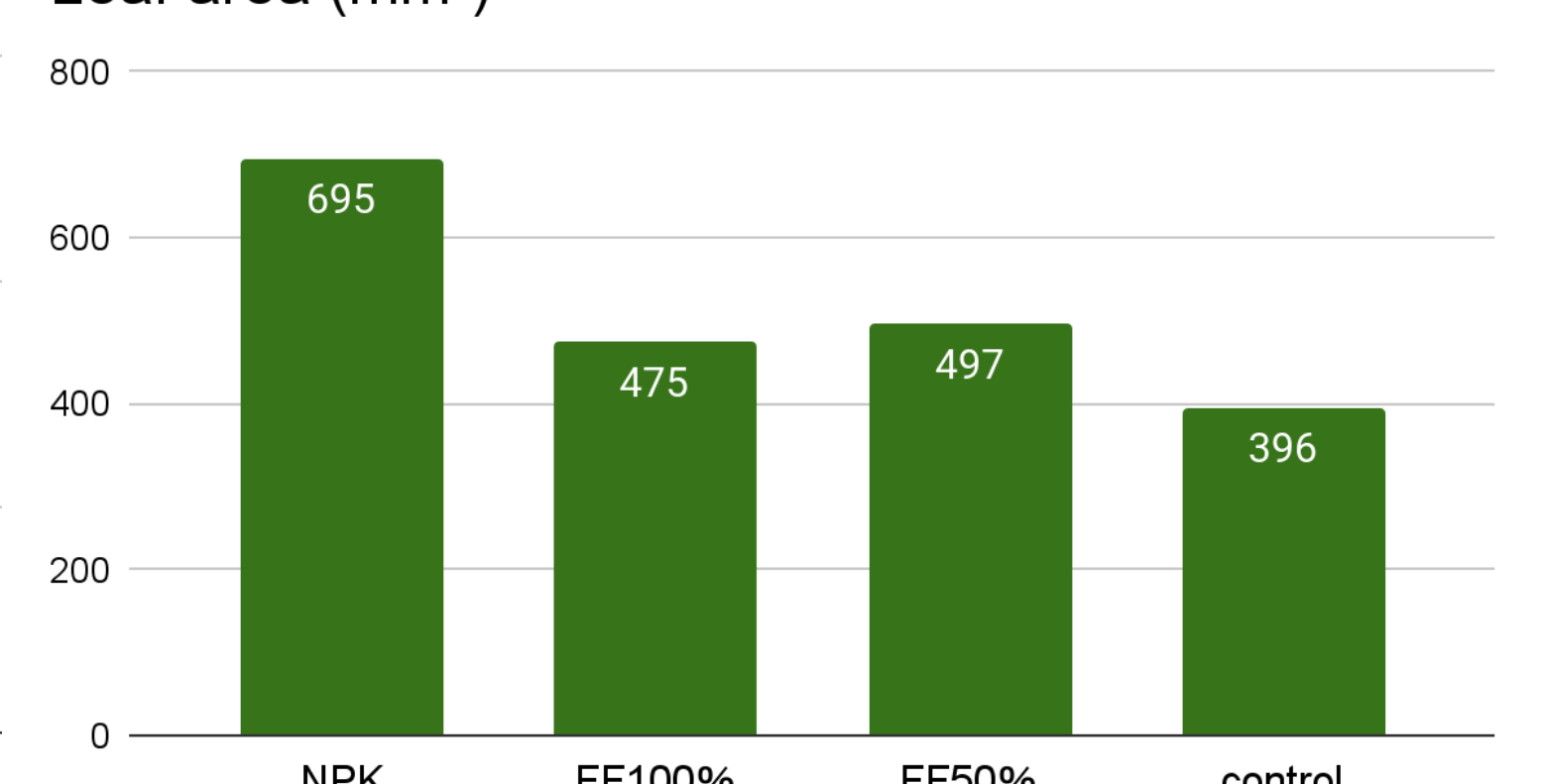
Total weight (g)



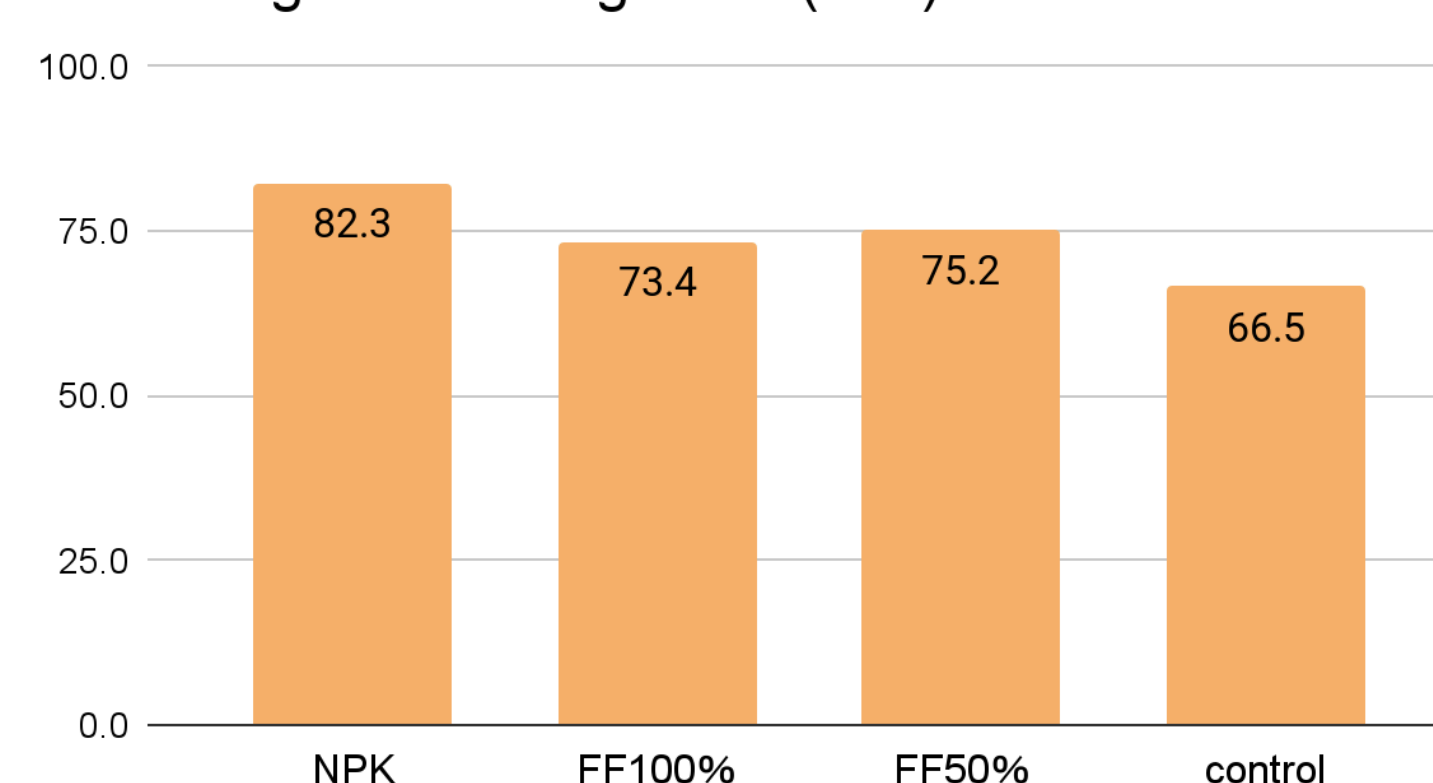
Number of leaves



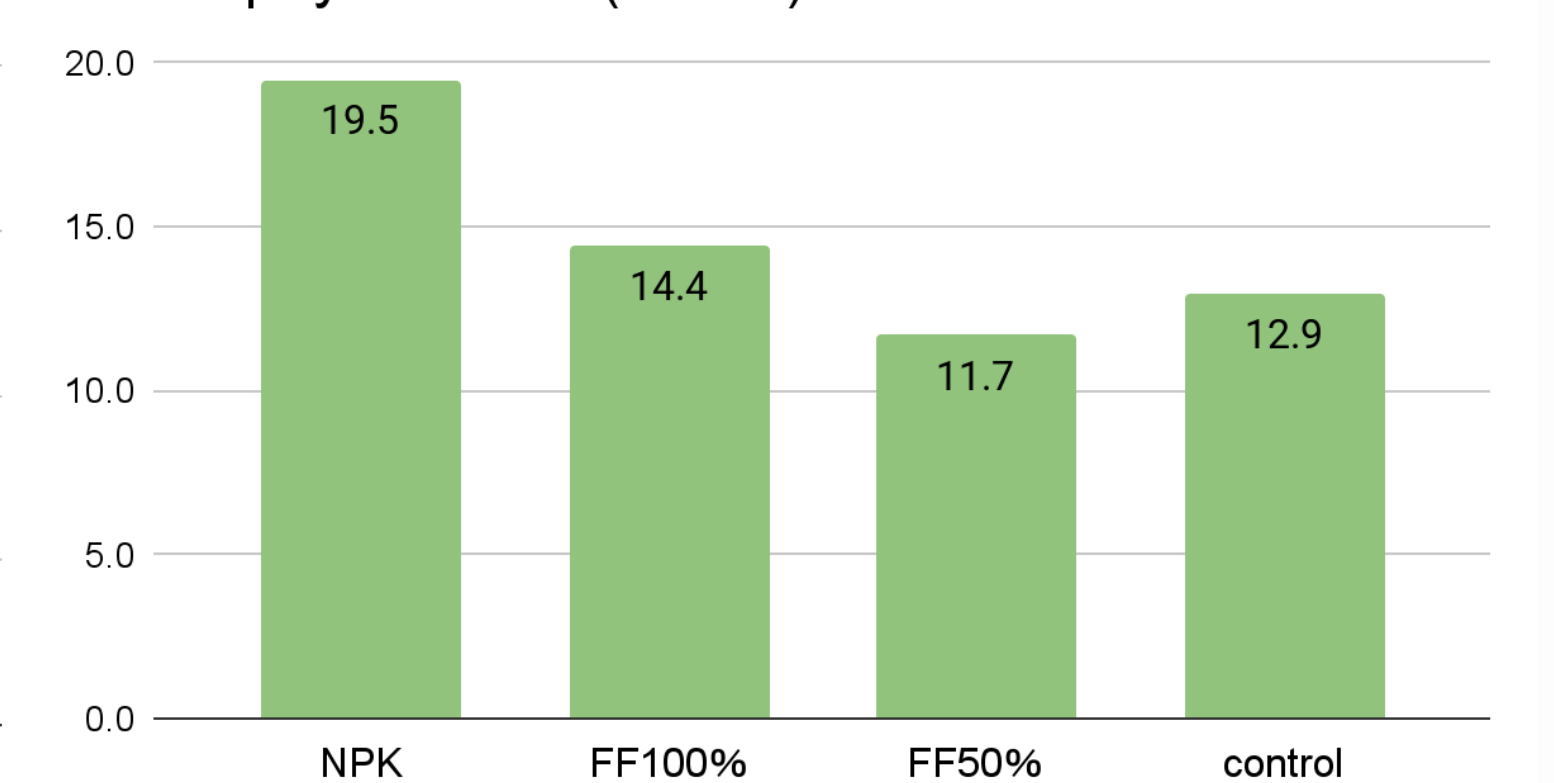
Leaf area (mm²)



Total length excluding roots (mm)



Chlorophyll content (SPAD)



Consideration

1. The bacteria increased abnormally
2. The poor balance of nutrients in feather fertilizer

Conclusion

A lot of nitrate ions was obtained from feather waste. FF is not as balanced as NPK fertiliser. Plants were grown using eco-friendly coco peat.

References

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- <https://www.jseb.jp/wordpress/wp-content/uploads/09-01-003.pdf> (2025.12.18)
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Acknowledgments

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