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Introduction

- Cucumber (*Cucumis sativus*) is a globally cultivated crop with strong sales in domestic and international markets.
- Cucumber has specific light and temperature needs.
- Black mulch is commonly used to raise soil temperature and reduce weed growth.
- Reflective mulch may enhance cucumber growth by reflecting light back to the plant.

Objectives

- This experiment aims to investigate the effect of reflective mulch, relative to black mulch, on the growth and yield of Chinese cucumber varieties.

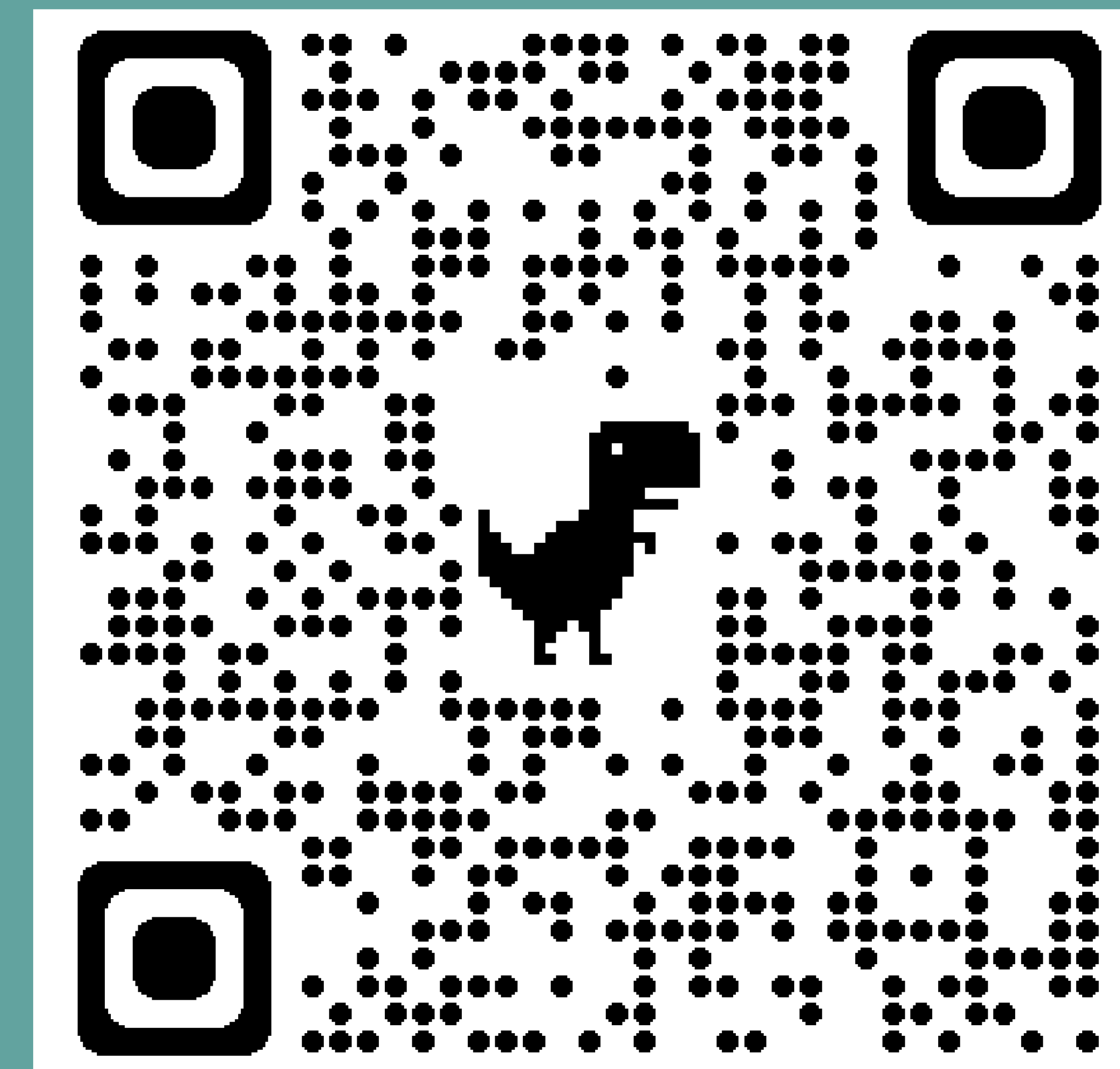
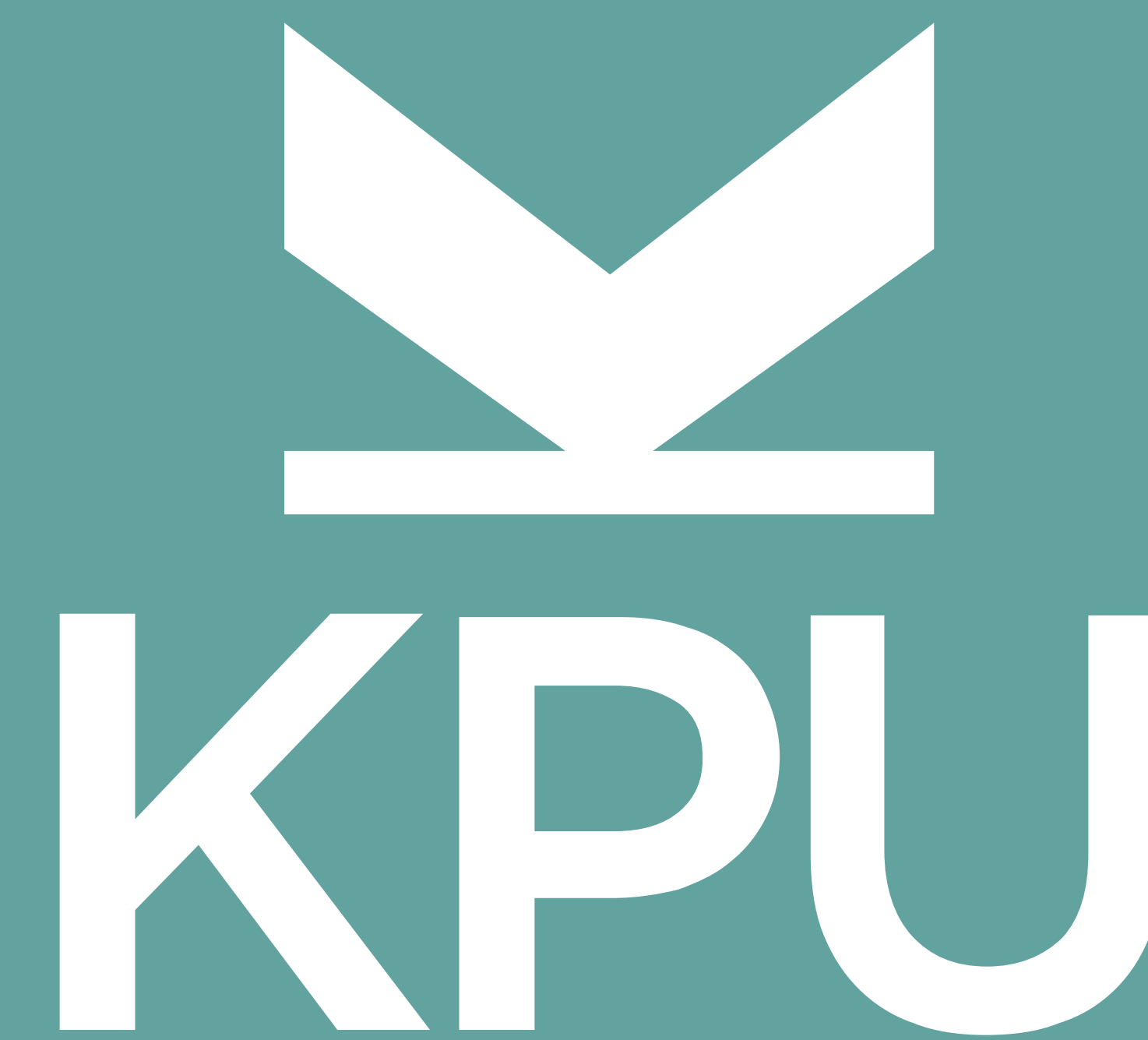
Methods

- Experimental Location: KPU Farm on Richmond's Garden City Lands.
- Experimental Design: Completely Randomized Split-Plot Design with 10 replicates.
- Factors and Treatments: Main Factor: Mulch Type (Reflective vs. Black).
- Sub-Factor: Cucumber Variety (cv. 'Suyo Long' and 'Tasty Green').
- Transplants: Cucumber seeds were sown in containers following standard protocols and grown in a controlled environment (dome greenhouse) to reduce weather-related variability.
- Transplanted 4-6 weeks after germination, when plants reach appropriate size.
- Measured Variables:
 - Plant height and width
 - Timing of fruit ripening
 - Cucumber weight and length
- Statistical Analysis: Mixed model with harvest date, mulch type, and cucumber variety as fixed factors; main plot and subplot as random



Cucumber Response to Black and Silver Mulches

Black mulch favours 'Tasty Green' cucumber; reflective favours persistent yield.



Results

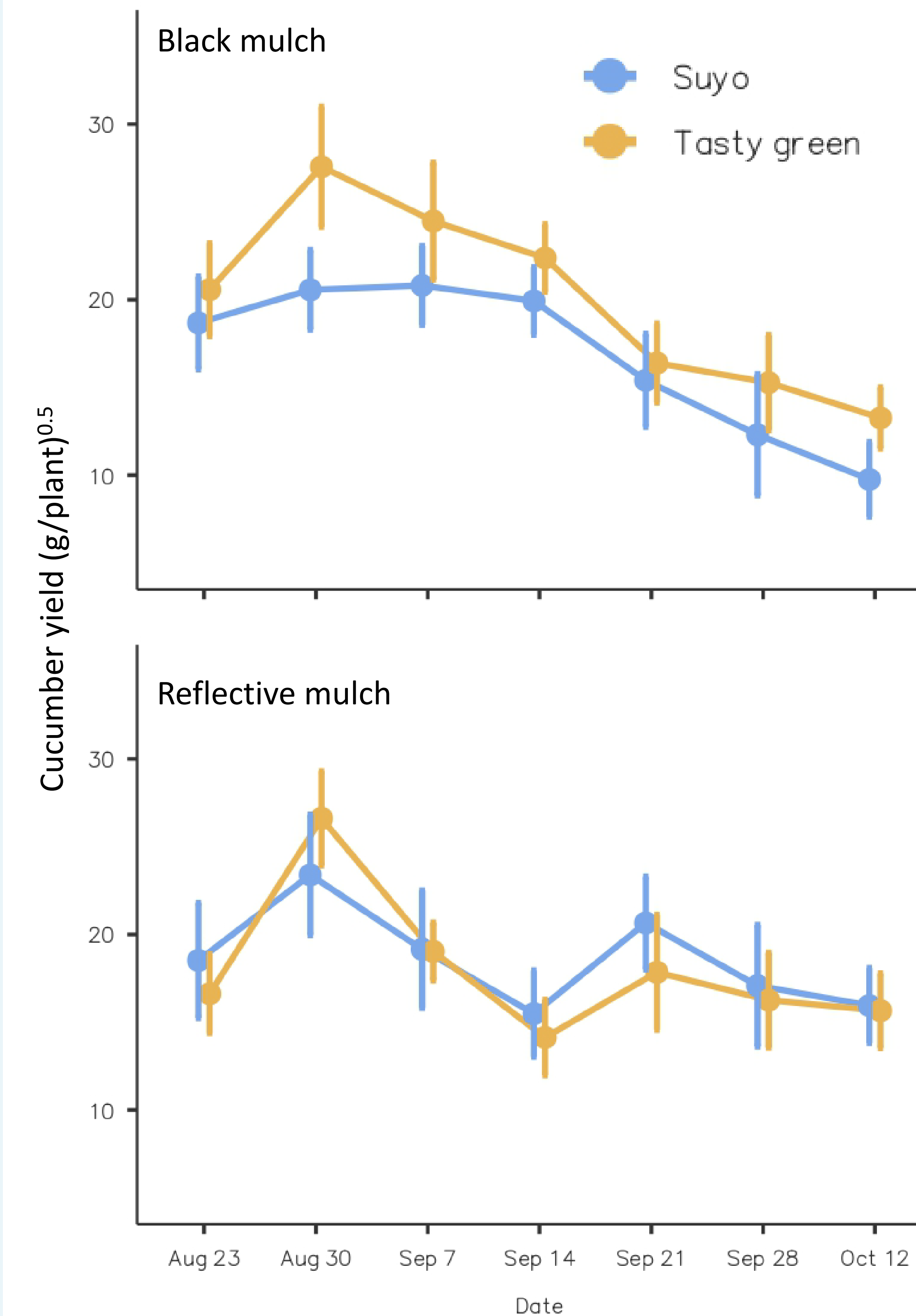


Figure 1. Yield of 'Tasty Green' and 'Suyo Long' cucumbers grown in black and reflective mulches. The interaction between date and mulch was significant; other interactions were not ($\alpha = 0.05$). Data were transformed by square root to satisfy statistical assumptions. Error bars denote standard error of the mean ($n = 10$).

Conclusion

- 'Tasty Green' tended to perform better in black plastic mulch than 'Suyo Long', but this difference was not observed in reflective mulch.
- Cucumber yield declined more rapidly in black plastic mulch than reflective mulch, which sustained cucumber yield later into the growing season.

Acknowledgements

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