Radish Microgreens Performed Best with Compost Substrate

Growing Media & Fertilizer Effects on Radish Microgreens

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INTRODUCTION

- Microgreens consist of a central stem, cotyledon, and the first pair of true leaves.
- Microgreens are used as nutritional supplements and for visual, flavour and texture enhancement of food.
- Growing media are soilless substrates for plants
- Growing media provide environmental consistency and hold water and nutrients while reducing microbial populations.
- Some growers use fertilizer for microgreen production; others do not.

OBJECTIVE

- Determine how fertilizer and media affect the growth of radish microgreens

MATERIALS & METHODS

- Completely Randomized factorial design
  - 2 factors (growing medium and fertilizer)
  - 6 treatments combinations
  - 3 replicates
- Growing medium factor levels
  - Steel Mesh (On the Grow, TX)
  - Coconut Coir (Hydro Farm, Sri Lanka)
  - Compost (Spent mushroom manure, Canadian Tire)
- Fertilizer factor levels
  - Fish Fertilizer (2-3-0) with tap water
  - Tap water only (Control)
- Experiment conducted in a climate controlled room (Institute for Sustainable Horticulture Lab, KPU Langley Campus)
- **Day 1:** Seeded. Weights placed on top tray.
- **Day 4:** 24-hour blackout for plant elongation
- **Day 9**: Harvested
- **Day 16:** Dried and weighed

RESULTS

- No significant effect of fertilizer ($p = 0.24$)
- Growing medium had a significant effect on radish growth ($p < 0.001$) (Figure 1).
  - Highest growth in compost
  - Lowest growth in steel mesh
  - Intermediate growth in coconut coir

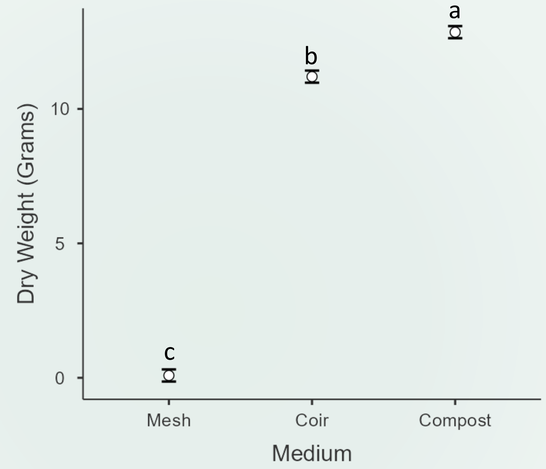

Figure 1. *Dry weight of radish microgreens by growing medium (n = 6). Error bars denote standard error. Means labelled with the same letter do not differ significantly (Tukey test, α = 0.05).*

- No significant interaction between growing medium and fertilizer ($p = 0.41$)
  - No evidence that fertilizer influences the effect of growing media
  - No evidence that growing medium influences the effect of fertilizer

DISCUSSION & CONCLUSION

- For the rate of application used, 9 day old radish not old enough to need fertilizer.
- Trays in the mesh studies were not heavy enough to reach the reservoirs of water in the tray below which likely resulted in them drying out and dying.
- Don't need fertilizer to grow 9 day only radish microgreens
- Compost was the best growing medium followed by coco coir. Mesh performed very poorly.

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