

# Growth Substrate Effect on Lion's Mane (*Hericium erinaceus*) Mushroom Yield

## INTRODUCTION

- Lion's Mane mushrooms are nutrient dense, an excellent alternative protein, low in calories, carbohydrates, sodium and are cholesterol-free
- This project was closely connected the UN Sustainability Development Goals:
  - i. Responsible consumption / production
  - ii. Climate action
  - iii. Life on land
  - iv. Good health/Zero-hunger
- Focus on the responsible use of finite resources like sphagnum peat moss, and proper management of spent materials such as coco coir, coffee grounds, and straw
- Current research was focusing on growing Lion's Mane on a grain-based substrate to determine if grain vs. other substrates listed would increase yield

## METHODS

- Design: Completely Randomized with three replicates and four growth substrates treatments (12 experimental units):
  - i. Control – oak & wheat bran
  - ii. Peat – oak, bran & peat
  - iii. Coffee – oak, bran & coffee grounds
  - iv. Coir – oak, bran & coconut coir
- Experimental Units: 12 oz Mason jars
- All substrates inoculated with Lion's Mane, *Hericium erinaceus*, liquid culture on July 24th, 2022
- Jars incubated in controlled environment (CONVIRON growth chambers)
  - i. Temperature: 19 °C
  - ii. Relative humidity: 85%
  - iii. Day length: 0:24 hr light : dark
- Data collection
  - i. Weekly observation and photographs
  - ii. Number of mushrooms, fresh weight, and dry weight recorded at final harvest on October 15, 2022 (83 days after inoculation)

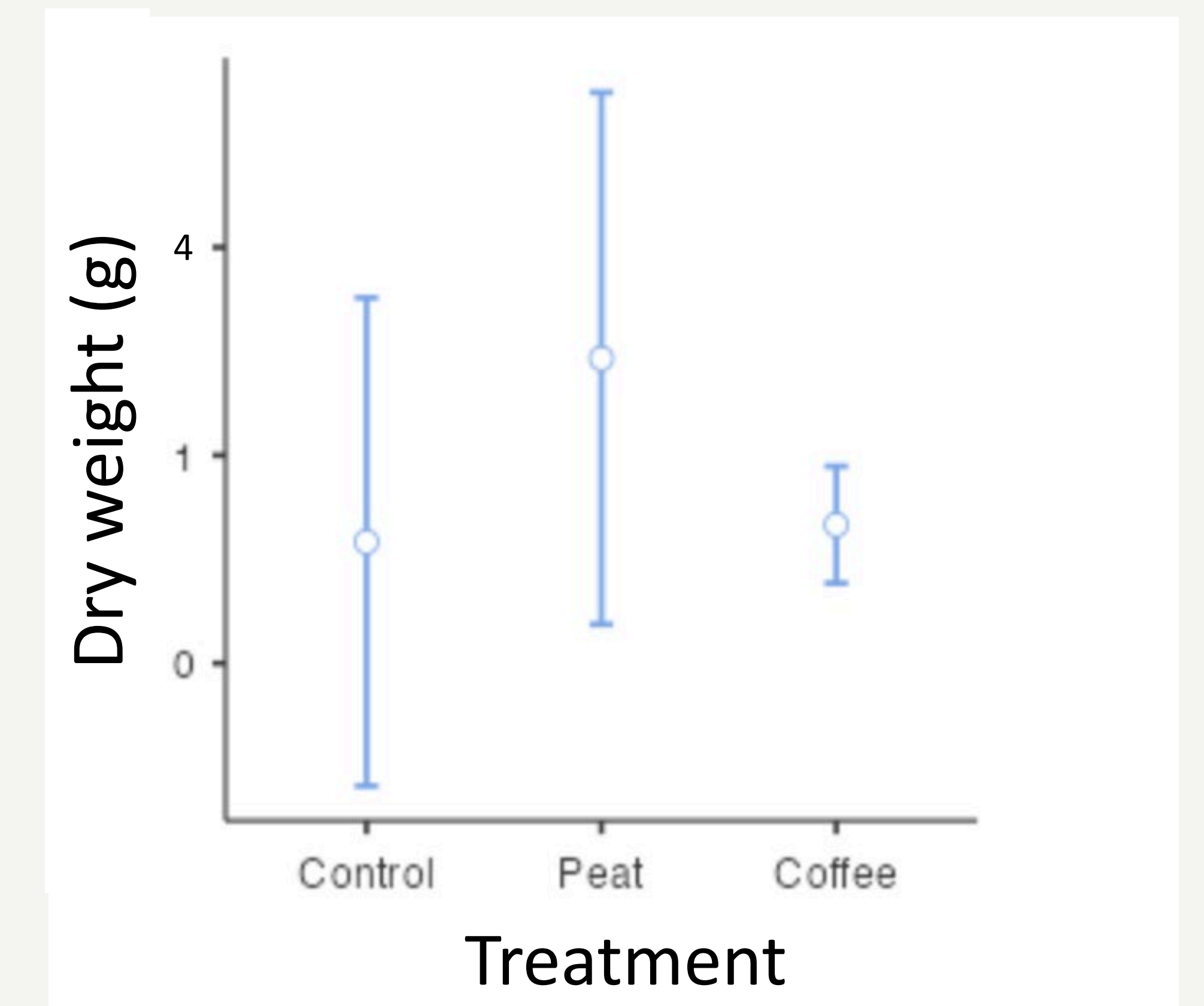
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# Growth Substrate Does Not Affect Yield of Lion's Mane, *Hericium erinaceus*, Mushrooms



## RESULTS



**Figure 1.** Dry weight of Lion's Mane mushroom by growth substrate. Error bars denote 95% confidence interval around mean of square root transformed values ( $n=3$ ) to satisfy assumptions of normality and homogeneity of variance. Note non-linear y-axis scale due to back transformation. No significant differences were detected between means.

## CONCLUSION

Mushroom Substrate (oak pellets, sphagnum peat moss, spent coffee grounds, and coco coir) did not have a significant effect on Lion's Mane, *Hericium erinaceus*, mushroom yield.



**Figure 2.** Mason Jars (12 oz) in Completely Randomized Design with 3 replicates and four growth substrates

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