

Spent Mushroom Compost as a Growing Media Substitute for Peat: A Sustainable and Accessible Alternative

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INTRO

- Peat is widely used as a growing medium for seedlings in agriculture.
- Peat is a non-renewable resource and important carbon sink.
- It is crucial to find sustainable alternatives to peat.

Spent Mushroom Compost (SMC):

- It is a by-product of the mushroom agriculture industry and would otherwise be considered a waste product.
- May provide a sustainable alternative to peat.

OBJECTIVES

- To determine if plants grown in the aged spent mushroom compost will have a similar or higher dry matter accumulation than the plants grown in the peat.
- To determine if the plants grown in the fresh spent mushroom compost will accumulate less overall dry matter than the plants grown in both the aged spent mushroom compost and the peat.
- To determine if the soil blocking seeding technique works as well as growing seedlings in black plastic trays.

METHODS

- Completely randomized split-plot design
- Five growing media:
 - Peat (control)
 - Spent Mushroom Compost
 - Aged (for one year)
 - Fresh
 - 1:1 blend of aged spent mushroom compost / peat
 - 1:1 blend of fresh spent mushroom compost / peat
- Crops:
 - Fennel (*Foeniculum vulgare*)
 - Lettuce (*Lactuca sativa*)
 - Onion (*Allium cepa*)

Aged Spent Mushroom Compost has the potential to partially replace peat as a growing medium for seedlings.



- Data collected 6 weeks after seeding:
 - Plant dry weight
 - Germination rate

RESULTS

- The seedlings grown in the peat and the seedlings grown in the 1:1 ratio of the aged mushroom compost / peat had similar performance.

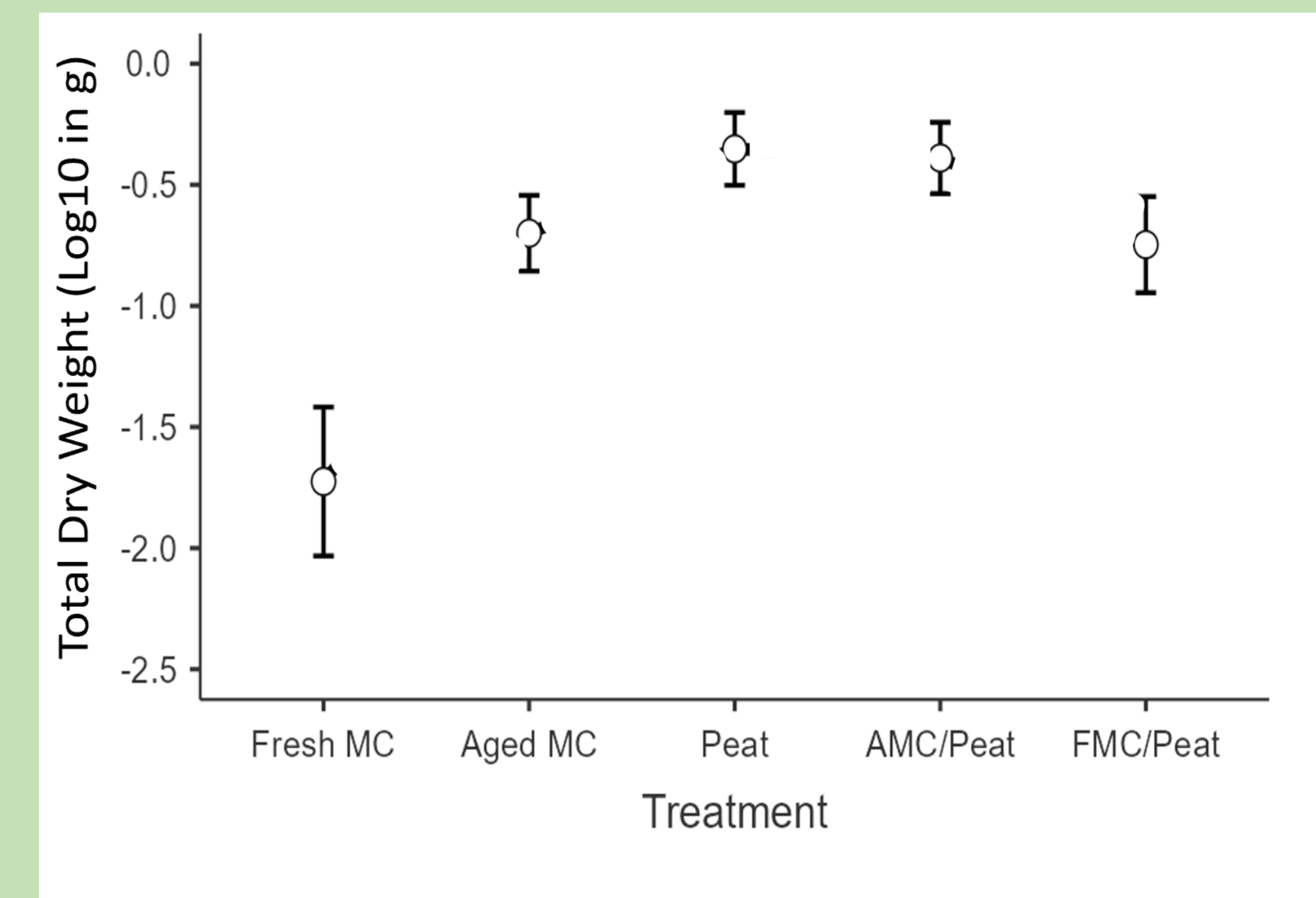


Figure 1. The total plant dry matter accumulation for each of the five treatments (fresh spent mushroom compost, aged spent mushroom compost, peat (control), fresh spent mushroom compost / peat, aged spent mushroom compost / peat) with standard error bars.

DISCUSSION & CONCLUSION

- Spent mushroom compost in combination with peat appears to be a viable alternative to a 100% peat growing medium for seedlings.

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