

Temperature and Moisture Control of Horticultural Peat Decomposition

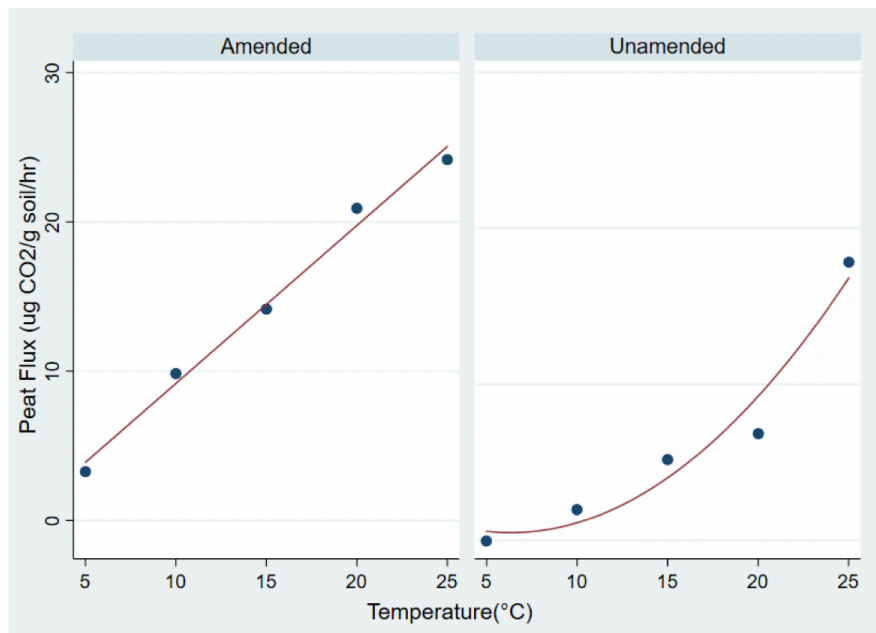
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2022

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Peatlands are dominant features of the Canadian landscape and are well-known for their widespread use as a growing media. For use in horticulture, peat is amended with additives to optimize the physical and biogeochemical properties for plant growth. This study investigated how the decomposition rates of horticulturally-amended peat varied with temperature and moisture conditions experienced when peat is used as a growing media. Under changing temperatures, the addition of lime to the horticultural soils decreased the rate of decomposition in amended soils and contributed a secondary carbon pool to the overall CO₂ flux. The effect of changing moisture did not reveal a clear optimal moisture condition for decomposition though showed significant differences between unamended and amended samples. From this, I suggest that it is incorrect to assume a standard temperature and moisture relationship across both natural and horticultural peat types.

Temperature variability plot of mean amended and unamended peat fluxes



(Designed by author, 2022)