THE BIOLOGY AND ECOLOGY OF *TUBER AESTIVUM* MYCORRHIZAE ESTABLISHMENT IN THE GREENHOUSE AND THE FIELD

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ABSTRACT

Truffles, of the ectomycorrhizal genus *Tuber*, are cultivated in plantations to offset declining wild production. Although methods for truffle plantation management have been published, methods for the production of truffle-colonized seedlings are rarely published. In a greenhouse study I tested the effect of lime type, inoculation technique, and truffle source on oak growth and mycorrhizal colonization. I found that the type of lime used to raise potting mix pH can affect the growth rate of root systems inoculated with Burgundy truffle (*Tuber aestivum*). I also report on the effects of two greenhouse seedling production systems on growth and colonization of oak seedlings. I found that book-type containers and a peat-based medium produced smaller yet better-colonized seedlings than seedlings produced in RPM® containers with ground bark-based RPM medium. Finally, I identified and monitored the ectomycorrhizal community on inoculated seedlings for three years and found that both *T. aestivum* colonization levels and native species richness increased in the field, indicating that native species, in the short term, did not displace *T. aestivum*.