

### ABSTRACT

Blodgett, James T. Ecology of Armillaria Species in New York Forests. Typed and bound thesis, 69 pages, 9 tables, 8 figures, 1990.

Armillaria mellea sensu lato, once considered a highly variable species, is now considered a complex of species. A statewide survey was conducted to identify the Armillaria species and determine their distributions, site relationships, host/substrate relationships, and apparent pathogenicity in New York. Ecological variables can be used to distinguish among the species, although there is some overlap. Six species have been isolated from forests throughout New York. A. calyescens was the most frequently found species. It had a wide host/substrate range, being found mainly on hardwoods in northern hardwood stands high in Acer saccharum. It was commonly found causing butt rot and was associated with a high frequency of rhizomorphs in the soil. A. gallica was the second most common species. It also had a wide host/substrate range, but was found mainly on hardwoods. It was found mainly in upland oak stands, stands high in Quercus species, low in organic matter, and with a low hydrogen ion concentration (high pH). A. gallica was the only species showing a relation to drainage class, being found more often than expected by chance on dry sites. It was commonly found causing butt rot and at sites with a moderate amount of rhizomorphs in the soil. A. ostoyae was the third most common species. It had a narrow host/substrate range and was the only species found mainly on conifers. A. ostoyae principally occurred in the Adirondack region in spruce-fir stands and stands high in organic matter. It was frequently found at sites with a low amount of rhizomorphs in the soil. A. sinapina, the fourth most common species, was also found primarily in the Adirondack region. It showed no host/substrate or forest type relationships but was found at sites high in Betula alleghaniensis and high in organic matter. A. gemina was a rare species, distributed throughout the state. It was found mainly on hardwoods in hardwood stands, and sites high in Fagus grandifolia. A. mellea sensu stricto was the least common species, found only once in Central New York on an unidentified stump.

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