

Interspecies coexistence in acorn-dwelling ants

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INTRODUCTION

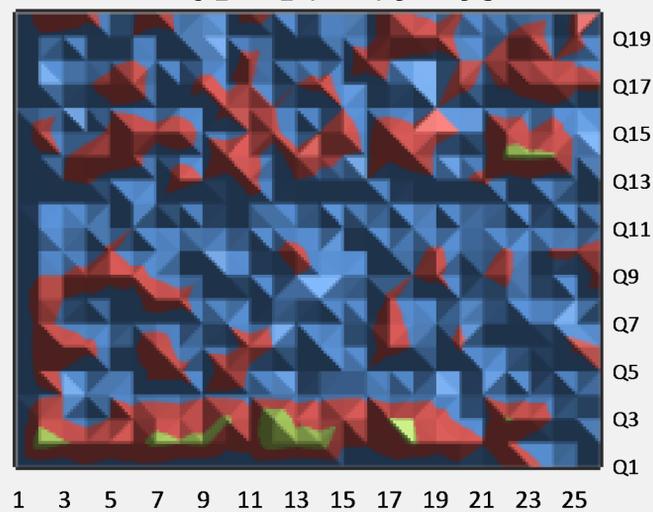
The overall goal of this research is to understand the extent to which trait-mediated mechanisms of community assembly shape the acorn-dwelling ant communities of Eastern Oak forests. Previous experiments have shown that *T. curvispinosus* prefers a dry acorn with a 1mm entrance hole width. The goal of these studies was to compare the habitat moisture and entrance hole preferences of *T. curvispinosus* to *T. longispinosus*, to see if differing preferences may facilitate coexistence.

FIELD SURVEY

A detailed sampling method was utilized to survey within Turkey Run Park (McLean, VA). Two transects were run with quadrats placed every other meter. Within each quadrat, 100 measurements of the leaf litter depth were taken, along with the location of each acorn in relation to others and the depth of each acorn within the leaf litter (Fig. 1 see below).

Quadrat Leaf Litter Depths (cm)

■ 0-2 ■ 2-4 ■ 4-6 ■ 6-8



FIELD EXPERIMENT

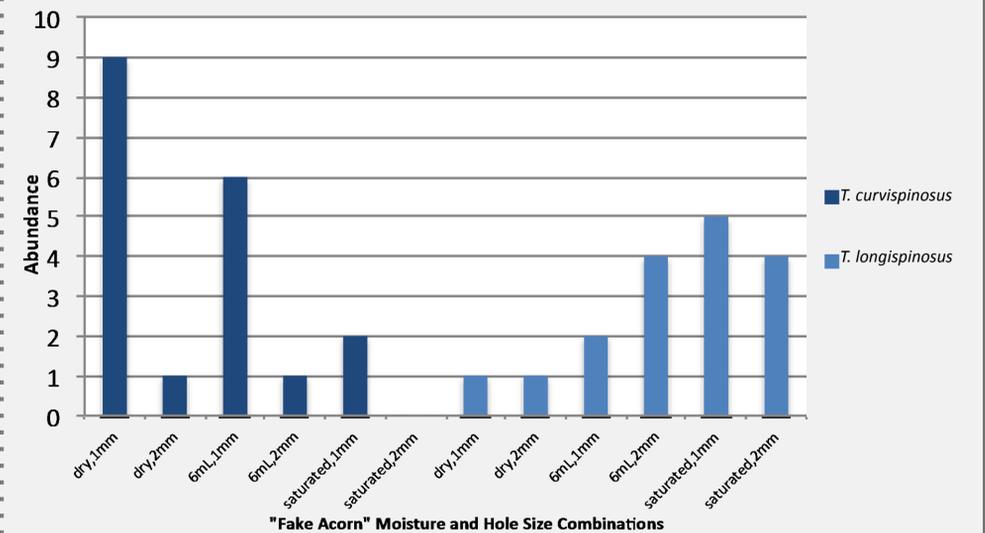
The field experiment was setup in the surveyed and cleared plots established by the field survey (previous section). 12 fake acorns were placed within each quadrat (4 each of 1mm, 2mm, and 3mm entrance hole widths). The acorns were placed in rows but the location of acorn entrance widths was randomized. A stratified random treatment of leaf litter was put on 10 quadrats (Figure 2) with the other 10 quadrats left bare (Figure 3). The experiment is scheduled to run for 3 months.



LAB EXPERIMENT

Each colony was put in an arena with six habitat options. *T. longispinosus* did not show a significant preference for any option (Chi-sq.=17, df=5, P=0.38). *T. curvispinosus* showed a significant preference for dry, 1mm entrance acorns (Chi-sq.=19, df=5, P=0.001)(Fig. 4 see below).

Preference for Moisture and Hole Size Combinations



FUTURE ANALYSES

Experiments combining the discovered preference for *T. longispinosus* & *T. curvispinosus* along with spatial aspects of preferences and competition.



ACKNOWLEDGEMENTS

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