**Does Community Composition Affect How Plants Respond to Mycorrhizal Networks**

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*Plants and arbuscular mycorrhizal (AM) fungi have been posited as having a mutualistic relationship where plants exchange sugars for nutrient acquisition services by the hyphal network produced by AM fungi. The magnitude of plant response to AM fungi can depend on factors such as the species interacting in this relationship and the surrounding environment where the interaction takes place, but these effects are not well understood. We tested whether plant response to interactions with AM fungal hyphal networks is affected by the presence of conspecific or heterospecific plant species. We expected that plants would respond more positively to AM fungal networks when grown with conspecific individuals in the community due to the cultivation of AM fungi that were more likely to benefit the plant species. Contrary to the prediction, we found plant response to AM networks was negatively affected by conspecifics relative to heterospecific plant species. These results suggest that AM networks incur negative plant responses in conspecific communities via intraspecific competition. Our findings support that AM networks are one of many factors that impact the distribution of plant species. Specifically, these networks will accelerate the depletion of niche nutrients in the soil, thereby promoting greater spatial separation among conspecifics.*