**Abiotic factors, not mycorrhizal associations, are strong predictors of growth and abundance of the invasive grass *Microstegium vimineum***

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*Microstegium vimineum*, known as Japanese stiltgrass,is an invasive annual grass which creates monocultures in native forest areas, outcompetes native understory species, decreases diversity, and prevents the regeneration of native trees. Development of more successful management strategies for this species depends on understanding the factors contributing to its competitive success. Invasive plants often form novel associations with soil organisms, and in other systems arbuscular mycorrhizal fungi (AMF) has been shown to facilitate establishment and spread of these plants. *Microstegium* is also known to form associations with AMF, but research has yet to demonstrate whether this association has a role in *Microstegium* invasion and dominance over native vegetation. We conducted a field survey in invaded and uninvaded habitats across six sites near Louisville, KY to evaluate the importance of AMF in *Microstegium* invasion relative to abiotic factors known to be important to success of this species (e.g., light and soil nutrients). We found no difference in AMF extraradical hyphal abundance between invaded and uninvaded habitats, nor in AMF root colonization in *Microstegium* across abiotic gradients, indicating little role for AMF in *Microstegium* spread. However, our results did show a relationship between AMF root colonization and *Microstegium* morphological traits, with an association to specific leaf area. This indicates that *Microstegium* may derive some benefit from the association with AMF, which could partly explain its competitive dominance in invaded sites.