Evaluating the Efficacy of Organic Management Methods on Japanese Stiltgrass (Microstegium vimineum)

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Japanese Stiltgrass (Microstegium Vimineum) is an invasive C4 annual grass that is currently depleting resources in deciduous forest ecosystems across eastern North America. The purpose of this study is to determine the most efficacious methods for managing stiltgrass and when in the growing season to apply them, thereby aiding land managers to combat the detrimental effects on North American ecosystems. The study took place at 5 different sites in New York State. The plots at each site were organized with 1 row for each of 4 months in the season (May to August) and 7 columns for the different methods: control, pulling, cutting, 3-5 sec. burn, 8-10 sec. burn, 13-15 sec. burn, crushing. Early August was discovered to be the optimal time for application of management as it is before stiltgrass seeding, resulting in the greatest elimination of stiltgrass. The most effective eradication method was found to be burning either for 10 or 15 seconds, although 3-5 sec. burn, cutting and pulling are effective but not to the same extent. However, considering time and resources, cutting may be a more realistically applicable method. Future research may include an investigation of how many consecutive seasons are required to fully eliminate stiltgrass, a cost analysis on which method is the most applicable on large scales, or an evaluation of the efficacy of organic herbicides and home remedies . This study can serve to inform land managers about the most efficacious methods and times for combating invasive stiltgrass and protecting native ecosystems.

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