P119

Seed preferences of the tropical fire ant, Solenopsis geminata *in Taiwan*

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Solenopsis geminata was introduced into Taiwan many years ago, and is now widely distributed in Central and Southern Taiwan. Because of their granivorous habit (dyszoochory), *S. geminata* workers are observed to attempt harvesting seeds from numerous plant species. This study was conducted by excavating fire ant nests to find seeds harvested by fire ants. A total of 37 seed species in 12 plant families were collected from four counties (Taichung, Yunlin, Chiayi and Tainan) in Taiwan. *S. geminata* preferentially harvested herb seeds, especially the Poaceae including 16 species. Three species of seeds from tree and shrub were found in the nests. They are *Broussonetia papyrifera*, *Flueggea virosa* and *Solanum torvum*. A large quantity of the seeds collected in Taichung is *Panicum maximum*, collected in Yunlin are *Chamaesyce hirta*, *Eleusine indica* and *Paspalum conjugatum*, collected in Chiayi are *Pouzolzia zeylanica*, *Chamaesyce hirta* and *Dichanthium annulatum*, and collected in Tainan are *Amaranthus patulus, Dactyloctenium aegyptium* and *Digitaria sanguinalis*. We performed removal experiments to study preferences of *S. geminata* for seeds comprising ten species (seven grasses and three forbs) in Taichung and Chiayi counties. The results showed that grass seeds, such as *Dichanthium annulatum, Panicum maximum,* and *Paspalum orbiculare* were readily removed by fire ants. In contrast, fire ants appear to less prefer seeds from forbs, such as *Chamaesyce hirta*. Seed weight seemed to influence the ant's choices. Seeds above 0.56 mg were harvested preferentially, but 0.07-0.43 mg seeds were rarely retrieved. This study suggests that seed preferences of *S. geminata* may have impacts on the abundance and composition of the plant community, especially grasses in fields infested with *S. geminata* in Taiwan.