Limited influence of experimentally induced predation risk on granivory in a tropical forest

ABSTRACT

Seed predation by rodents can strongly influence plant recruitment and establishment. The extent to which predation risk indirectly alters plant survival in tropical forests via impacts on granivory is unclear, making it difficult to assess the cascading impacts of widespread predator loss on tree recruitment and species composition. Experimental field studies that manipulate predation risk can help address these knowledge gaps and reveal whether antipredator responses among small mammals influence plant survival. We used camera traps and seed predation experiments to test the effects of perceived predation risk (via predator urine gel) on foraging behaviour of and seed removal by murid rodents in an unlogged and unhunched rainforest in Malaysian Borneo. We also explored the influence of seed traits (e.g., seed size) on removal by granivores and assessed whether granivore preferences for particular species were affected by predator urine. Murid visits to seed plots were positively related to overall seed removal but were not affected by predator scent. Granivory was the lowest for the largest seeded (>6 g) plant in our study but was not influenced by predation risk. Predator urine significantly affected removal of one seed taxon (Dimoocarpus, ~0.8 g), suggesting that removal by granivores may be affected by predation risk for some seed species but not others. This could have implications for plant species composition but may not affect the overall level of granivory.