

Appendix S1

Indirect control of decomposition by an invertebrate predator

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Ant suppression

Chemical treatments

Following Parr *et al.* (2016), for each round of suppression treatment, two types of poison baits were applied: Maxforce®, a commercial ant bait (active ingredients: Hydramethylnon 10 g/kg), and a custom bait which was created by soaking Whiskas® dry cat food in water containing imidacloprid (100 ppm, Premise®), then mixing with jelly (gelatin and sugar) made with a water solution containing imidacloprid (50 ppm). Three kilograms of Maxforce® and 6 kg of the cat-food-jelly bait were applied to each treatment plot. Two different types of poison bait were used because different ant species have different dietary preferences. The baiting technique had no detrimental non-target effects on ground or soil-dwelling invertebrates (Figure S1) and left no residual poison (imidacloprid and hydramethylnon) in soil, grass or tree leaves (*Terminalia sericea*, Figure S2). Both insecticides used have low toxicity to terrestrial vertebrates and plants (Bayer Environmental Science 2017a; Bayer Environmental Science 2017b). Additionally, the size and composition of the baits are designed to be specific and highly appealing to foraging ants. Baits were applied during the day when smaller vertebrates are less active. Furthermore, the quantities of insecticides in the poison baits applied to the suppression plots were below the LD50s of vertebrates, so even if a vertebrate ate all of the baits applied to a plot there would be no lethal effects.

Bayer Environmental Science (2017a) Maxforce® Ant Bait Granules Material Safety Data Sheet BES/SA0064.

Bayer Environmental Science (2017b) Premise® 200SC Material Safety Data Sheet BES/SA0076.

Parr, C., Eggleton, P., Davies, A., Evans, T. & Holdsworth, S. (2016) Suppression of savanna ants alters invertebrate composition and influences key ecosystem processes. *Ecology*, **97**, 1611-1617.