A cover crop alters the trophic positions of generalist predators in the litter of a banana agroecosystem

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Generalist predators can play an important role in agroecosystems by controlling herbivores via top-down effects. As cover crops are increasingly used in agroecosystems, the effects of this resource on generalist predator diet need to be evaluated. We studied the effect of adding a cover crop, Brachiaria decumbens, on food web structure in a banana agroecosystem by analysing stable isotopic variation in C and N for Cosmopolites sordidus, a major banana pest, and its potential predators (spiders, ants, centipedes, and earwigs). Addition of the new resource did not alter the trophic niche of the banana pest C. sordidus, indicating the absence of a direct bottom-up effect of B. decumbens on C. sordidus populations. In contrast, addition of the cover crop altered the trophic position (as indicated by $\delta^{13}C$ signature) of the generalist predators. As a new resource that supports a more diverse community of insect herbivores, the cover crop provided alternative resources for the generalist predators. The failure of the cover crop to increase the $\delta^{15}N$ signature is inconsistent with the hypothesis that the cover crop would increase intraguild predation. By providing alternative prey, the addition of a new resource in agroecosystems has the potential to increase populations of generalist predators and therefore pest control.