

OR093*Carbohydrate availability correlates with yellow crazy ant abundance and trophic position***Lori Lach**, Benjamin D. Hoffmann, Melinda L. Moir

Recent studies have elucidated the importance of carbohydrates for colony growth of invasive ants. The yellow crazy ant (*Anoplolepis gracilipes*) has invaded many tropical islands as well as parts of mainland Australia and poses a threat to native invertebrates when it reaches high abundance. We hypothesized that if carbohydrates are driving high abundances of yellow crazy ant, yellow crazy ant abundance should be 1) positively correlated with carbohydrate availability in the environment, and 2) negatively correlated with yellow crazy ant trophic position. We tested our hypotheses with stable isotope analyses and field measurements of carbohydrate resources (tended honeydew producing insects, extrafloral and floral nectaries) in maquis vegetation in New Caledonia and savanna in northern Australia. Our data supported both hypotheses. In both locations, we found a positive correlation ($p < 0.05$) between the abundance of tended honeydew-producing insects and the abundance of yellow crazy ant at baits. In northern Australia where acacias with extrafloral nectaries are common, the number of extrafloral nectaries correlated positively ($p < 0.05$) with yellow crazy ant nest density, abundance of yellow crazy ants at baits, and card counts. Our second hypothesis was supported by a negative correlation ($p < 0.05$) between mean trophic position and the abundance of yellow crazy ants at baits in both locations. This is the first study to link carbohydrate availability, trophic position, and invasive ant abundance in field conditions, and it provides further evidence of the importance of carbohydrate availability in ant invasions. However, the potential for effects of the more predacious, less abundant populations of yellow crazy ants on invertebrates should not be ignored.