

BEHAVIOR OF *Acromyrmex crassispinus* IN TRAIL BIFURCATIONS AND INFLUENCE OF ANT FLOW ON ERROR RATE OF NESTBOUND LADEN WORKERS

M.A. NICKELE¹, M.R. PIE¹ & W. REIS FILHO²

¹Laboratório de Dinâmica Evolutiva e Sistemas Complexos, Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, PR, Brasil, email: nickele.mariane@gmail.com.

²Epagri/Embrapa Florestas, Colombo, PR, Brasil.

Ants are faced with a succession of bifurcations along their foraging trails. Given that there is no directionality in pheromone trails, each bifurcation is potentially an opportunity for error in the trajectory of workers to the nest, which could entail in considerable inefficiencies in the transportation of food to the colony. The behavior of leaf-cutting ants of the genus *Acromyrmex* in trail bifurcations is still largely unexplored. Thus, this study aimed to assess the behavior of *Acromyrmex crassispinus* workers in trail bifurcations and to investigate if differences in trail traffic influence in the number of errors of workers that return to the nest with load. Four colonies of *A. crassispinus* were monitored in Curitiba, state of Paraná, Brazil. One bifurcation of each colony was recorded on video during 5 minutes, totaling 20 videos for each colony. We counted the number of workers leaving and returning (with or without load) in each video, and the number of ants returning with load that committed errors. The trajectories of all workers of one video with low and another with high ant flow were followed for each colony, for a total 1335 analyzed worker paths. The error rate of workers returning with load decreased with increasing worker flow. Most workers walked in the central part of the foraging trails and these ants occupied a larger area of the foraging trail and bifurcation when the ant flow was high. The walking speed of *A. crassispinus* is influenced by the ant flow, load, temperature and relative humidity. These results provide a better understanding of *A. crassispinus* traffic organization and their foraging strategies. (CAPES)