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Carbon dioxide sensing in the social context: leaf-cutting ants prefer elevated CO₂ levels to tend their brood

Daniela Römer, Martin Bollazzi, Flavio Roces

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Title: Carbon dioxide sensing in the social context: leaf-cutting ants prefer elevated CO₂ levels to tend their brood

Authors: Daniela Römer^{a,b*}, Martin Bollazzi^b and Flavio Roces^a

Affiliations:

^a Department of Behavioral Physiology and Sociobiology, Biocenter, Am Hubland, University of Würzburg, 97074, Würzburg, Germany, email: roces@biozentrum.uni-wuerzburg.de

^b Unidad de Entomología, Departamento de Protección Vegetal, Facultad de Agronomía, Avda. Eugenio Garzon 780, Universidad de la República, 12900 Montevideo, Uruguay, email: bollazzi@fagro.edu.uy

***Corresponding author:**

Daniela Römer

Email: Daniela.Roemer@uni-wuerzburg.de

Tel. +49 931 3180832

Address: Department of Behavioral Physiology and Sociobiology, Biocenter, Am Hubland, 97074 Würzburg, Germany

Abstract

Social insects show temperature and humidity preferences inside their nests to successfully rear brood. In underground nests, ants also encounter rising CO₂ concentrations with increasing depth. It is an open question whether they use CO₂ as a cue to decide where to place and tend the brood. Leaf-cutting ants do show CO₂ preferences for the culturing of their symbiotic fungus. We evaluated their CO₂ choices for brood placement in laboratory experiments. Workers of *Acromyrmex lundii* in the process of relocating brood were offered a binary choice consisting of two interconnected chambers with different CO₂ concentrations. Values ranged from

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