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# Identifying colony fission processes in *Aphaenogaster senilis*: a genetic approach

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Colony fission strategies play a major role in determining ecological features of a species such as range expansion and population density. In species with limited dispersal, (i.e. wingless workers) such strategies may also cause local resource competition (LRC) among nearby colonies. At present, little effort has been performed in understanding LRC processes in wild populations and even less in determining the degree of relatedness among newly formed colonies and its effect in LRC. Towards this end, we isolated and characterized 8 species-specific microsatellite markers for the fission-performing ant *Aphaenogaster senilis* (Galarza et al. 2008). The experiment was carried out in 18x18m plots in the Doñana National Park, Spain. In the experimental plots all nests but one were removed, while the control plots remained unaltered. We then analysed allele-frequency variation among nests after 1, 2, 4, 6 and 12 months. A maximum of 3 alleles/locus/nest were observed suggesting monoandry as the main reproductive strategy for this ant species. The degree of relatedness among nests decreased as the geographic distance between them increased reaching complete isolation within a few km. Our results support the notion that limited dispersal and colony fission strategies can cause intra-specific LRC in *A. senilis* and this may be a common phenomenon in other ecologically similar species.

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