Pre-baiting enhances trappability and reduces trap-shyness in live-trapping of European ground squirrels (*Spermophilus citellus*)

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Abstract

Live trapping is the principal method used for monitoring and translocating the endangered European ground squirrels (*Spermophilus citellus*). We have found that colonies vary markedly in trap-shyness, particularly where prior human presence has been limited. This reduces trapping efficiency and undermines the comparability of capture data across sites. We tested whether pre-baiting — scattering bait items over a site before trapping begins — reduces initial avoidance of baited traps and increases trapping success. A field experiment was conducted in three consecutive steps on matched plots with equal ground squirrel density and trap number:

a/ trapping success was compared between pre-baited and untreated control plots;

b/ capture rates were compared between baited and empty traps within a pre-baited area, and

c/ capture preferences were compared between plots pre-baited with carrot versus apple.

We have found that a/ pre-baiting doubled the trapping success compared to untreated controls, and b/ animals were significantly more likely to enter traps baited with the pre-familiarised food than empty ones. When offered a choice in c/ between carrot- and apple-baited traps, ground squirrels consistently favoured the trap baited with the food type used during the pre-baiting session, with either bait type proving equally effective. Thus, pre-baiting substantially improves live-trapping efficiency in European ground squirrels by reducing trap-shyness and increasing the probability of trap entry, regardless of the bait type. This low-cost methodological refinement can shorten fieldwork duration, reduce animal disturbance, and improve the comparability of trapping data among populations differing in baseline shyness.

Keywords

Spermophilus citellus, pre-baiting, trap-shyness, live-trapping, trapability, conservation monitoring