

# Factors influencing the presence of rodents in olive agrosystems in southern Tunisia using occupancy models

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## 1 ABSTRACT

The identification of the factors associated with patch occupancy is particularly important to understand how animal species are distributed. This study investigated the habitat variables affecting the distribution of rodents in olive agrosystems and their relative impact. Thirty (30) stations for trapping rodents were identified. At each station, an area of one-hectare surface was selected and 20 snap traps were used between early November 2015 and February 2016 in olive agrosystems. The objective of this process was to collect presence/absence data and to identify major species that occupied such a landscape. Regarding site covariates potentially affecting rodent detection, Clay%, Silt %, Sand %, calcium carbonate%, Organic matter and distance from urban area were measured. A total of 68 individuals belonging to two species, namely *Psammomys obesus* (The fat sand rat) and *Meriones libycus* (The Libyan jird) were caught. Using a likelihood-based approach, it was found that rodents avoided loamy soils with high CaCO<sub>3</sub> rate and preferred landscapes with important distance from the urban area. These findings may be useful by state and farmers for planning decisions to preserve agriculture.

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