New tools and methods

A new way to test live trapping: actual efficiency and animal welfare under the magnifier

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DOI: 10.20315/evmc.2025.076

Wild boar (*Sus scrofa*) is arguably one of the most problematic species globally. The growth in numbers, coupled with the impact on natural ecosystems, agriculture and human activities, has prompted the implementation of intensive population control measures. Reducing wild boar numbers has become even more pressing as African swine fever spreads. This has resulted in an increased demand for intervention strategies to effectively address population reduction while ensuring efficiency and alignment with evolving animal welfare concerns. Therefore, we initiated a study which aims to evaluate and compare efficiency and animal welfare in three different trapping systems: modular trap, stationary trap, and net trap. The study has been carried out in the Presidential Estate of Castelporziano (Rome, Italy), a 6,000 ha large fenced area characterized by a Mediterranean environment and large biodiversity. The experimental design entailed the partitioning of the area into 3 subzones, which served as replications of the experiment. In each subzone, 4 units of each trap model were randomly deployed, for a total of 36 trapping sites throughout the 3 replications. A total of 50 successful trapping events were achieved between August and September 2024, resulting in a total capture of 154 wild boar (recaptures included). Following their capture, wild boar were marked, weighed, checked for the presence of injuries, and then released.

We used 3 camera traps to monitor each trap and determine the number of wild boar attracted, the composition of groups, and animal behaviour. Subsequently, the efficiency of each trap was determined by calculating the ratio of wild boar captured to the total number of wild boar present in the area. This ratio represents the actual trap's ability to successfully capture all animals that visited it during the conditioning phase. To investigate the variations in animal welfare among the 3 trap types, we conducted a comparative analysis of the impact of the trapping event on wild boar. We documented and assessed injuries and classified them into 11 classes according to severity.

The net trap exhibited a higher relative efficiency (0.90) than for the stationary trap (0.45) and modular trap (0.35), which is likely attributable to the distinctive operational characteristics and configuration of this trapping system. The incidence of damage was recorded in 41.3% of the animals trapped in stationary traps, 78.3% in the modular traps, and 0.0% in the net traps, respectively. The preliminary results indicate that the use of net traps represents an efficient and humane approach to the management of wild boar populations. Nevertheless, further data is required to reinforce this hypothesis and establish a functional protocol to enhance the efficacy of live trapping.