Field evaluation of the immunocontraceptive vaccine GonaConTM in free-living mammal populations

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There is increasing demand for benign approaches to the resolution of conflicts between human interests and wildlife. One potential non-lethal approach is fertility control, although effective tools have only recently begun to emerge. A major technology breakthrough has thus been the development of single-dose injectable immunocontraceptive vaccines that inhibit the fertility of individual animals for several years. This has culminated in the GonaConTM vaccine being registered in the USA for use on white-tailed deer (*Odocoileus virginianus*). Here we describe the further evaluation of this vaccine in free-living populations of three other mammal species, wild boar (*Sus scrofa*), European badger (*Meles meles*) and feral goats (*Capra hircus*). These studies used remote monitoring techniques, including GPS collars, behavioural and physiological measures to quantify the impacts of single-dose vaccination on individuals and population consequences. The vaccine was effective in reducing the fertility of females of all three species. Furthermore, no negative welfare consequences were observed and no measurable effects found with respect to ranging or social behaviour. An 89% reduction in female feral goat fertility was maintained for at least two years post-vaccination and fertility control has now been incorporated into the long-term management plan for this population. This is the first active use of fertility control in the management plan for any mammal population in Europe. We anticipate that this example will be repeated with increasing frequency, across a range of potential target species, as opportunities for this emerging technology are realised, particularly to complement rather than necessarily replace more traditional wildlife management.