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An assessment of animal welfare impacts in wild Norway rat (Rattus norvegicus) management

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Abstract

*Norway rats (*Rattus norvegicus*) are considered one of the most significant vertebrate pests globally, because of their impacts on human and animal health. There are legal and moral obligations to minimise the impacts of wildlife management on animal welfare, yet there are few data on the relative welfare impacts of rat trapping and baiting methods used in the UK with which to inform management decisions. Two stakeholder workshops were facilitated to assess the relative welfare impacts of six lethal rat management methods using a welfare assessment model. Fifteen stakeholders including experts in wildlife management, rodent management, rodent biology, animal welfare science, and veterinary science and medicine, participated. The greatest welfare impacts were associated with three baiting methods, anticoagulants, cholecalciferol and non-toxic cellulose baits (severe to extreme impact for days), and with capture on a glue trap (extreme for hours) with concussive killing (mild to moderate for seconds to minutes); these methods should be considered last resorts from a welfare perspective. Lower impacts were associated with cage trapping (moderate to severe for hours) with concussive killing (moderate for minutes). The impact of snap trapping was highly variable (no impact to extreme for seconds to minutes). Snap traps should be regulated and tested to identify those that cause rapid unconsciousness; such traps might represent the most welfare-friendly option assessed for killing rats. Our results can be used to integrate consideration of rat welfare alongside other factors, including cost, efficacy, safety, non-target animal welfare and public acceptability when selecting management methods. We also highlight ways of reducing welfare impacts and areas where more data are needed.*

Keywords: *animal welfare, commensal rodent, Norway rat, pest control, United Kingdom, wildlife management*