

Alternative methods for killing laboratory animals - for careful consideration in structurally departing from the prescribed methods

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In July 2016, the NCad (Netherlands National Committee for the protection of animals used for scientific purposes) presented its advisory report on 'Alternative methods for killing laboratory animals' to the Dutch Minister of Agriculture, Martijn van Dam. The NCad was requested to advise on methods for killing laboratory animals that are considered to be at least as humane as the methods set out in European Directive 2010/63/EU. And to offer guidance to the Netherlands Food and Consumer Product Safety Authority (NVWA) in assessing such alternative methods of killing by providing elements that must comprise a scientific justification.

The Directive provides two possibilities for deviating from the prescribed methods of killing: 1) The purpose of the procedure cannot be achieved by the use of a method of killing set out in the Directive. The Central Authority for Scientific Procedures on Animals (CCD) can, on the basis of a

scientific justification submitted by the applicant, decide to grant a project licence for a project in which a different method of killing is proposed than those set out in the Directive. The acceptance of such 'divergent' methods of killing is limited to the specific research project for which the licence is granted. 2) The other method of killing is considered to be at least as humane as the appropriate methods set out in the Directive. On behalf of the Minister, the NVWA can, on the basis of a scientific justification submitted by the applicant, grant the establishment licensee an exemption or dispensation for a *structural* (i.e. outside-the-project) use of the alternative method of killing.

While the advisory report by the NCad focuses on the second option, it may also offer guidance for the CCD, as, if a researcher opts for a divergent method of killing for scientific reasons, the CCD will review whether that method is also acceptable from an animal welfare perspective.

For the purpose of assessing whether an alternative method of killing is at least as humane with regard to the individual animal as the current legally permitted methods, the NCad advises using the following elements: 1) *speed of loss of consciousness*; 2) *degree of pain, suffering and distress associated with (the entire experience relating to) the killing*. If it is intended to be used for groups of animals, the method of killing should be assessed on the basis of the individual animal within that group with the highest expected degree of pain, suffering and distress.

The NCad recommends performing the assessment of the alternative method of killing in the following way. The applicant for an exemption or dispensation submits to the NVWA, on the basis of a Synthesis of Evidence evaluation, data (also from the literature) demonstrating that with regard to the two elements stated above, the method is at least as humane as the current prescribed methods. This analysis should be based on relevant (or as relevant as possible) measurable parameters for and clinical observations (such as regarding behaviour) of the animals to which the application relates. Experts can compare those data with the available data for the prescribed methods of killing. If there are no data in the literature or a Synthesis of Evidence evaluation provides insufficient clarification for an assessment of the request for an exemption or dispensation, exploratory animal studies should be carried out in consultation with the NVWA (and after a project licence has been granted by the CCD), to add the missing data on the parameters relevant to welfare. The study (including 'negative' results) is required to be published in an open access, peer-reviewed scientific journal, in accordance with the ARRIVE Guidelines. If the NVWA assesses favourably the data in the literature and a possible exploratory study, the NVWA can grant a dispensation for a defined period. The dispensation is granted subject to the condition that the applicant must first arrange for a scaled-up field trial to be conducted to ascertain the functionality of the alternative method of killing under the conditions that apply in practice (validate). As soon as the alternative method has been demonstrated to be at least as humane as the appropriate methods set out in the Directive, the NVWA should issue a generally applicable exemption for it.

The NCad recommends making centrally available the conditions for dispensation applied by the NVWA and data on the exemptions granted for alternative methods of killing. Knowledge sharing between the NVWA and CCD must be promoted, as well as between Animal Welfare Bodies (IvDs). And licensees should be aware of their obligation to have professionally competent employees.

Reference

<https://english.ncadierproevenbeleid.nl/advice/documents/reports/16/9/15/ncad-opinion-on-alternative-killing-methods-for-laboratory-animals>