# Control method: Poisoning of foxes with FOXECUTE® para-aminopropiophenone (PAPP) baits

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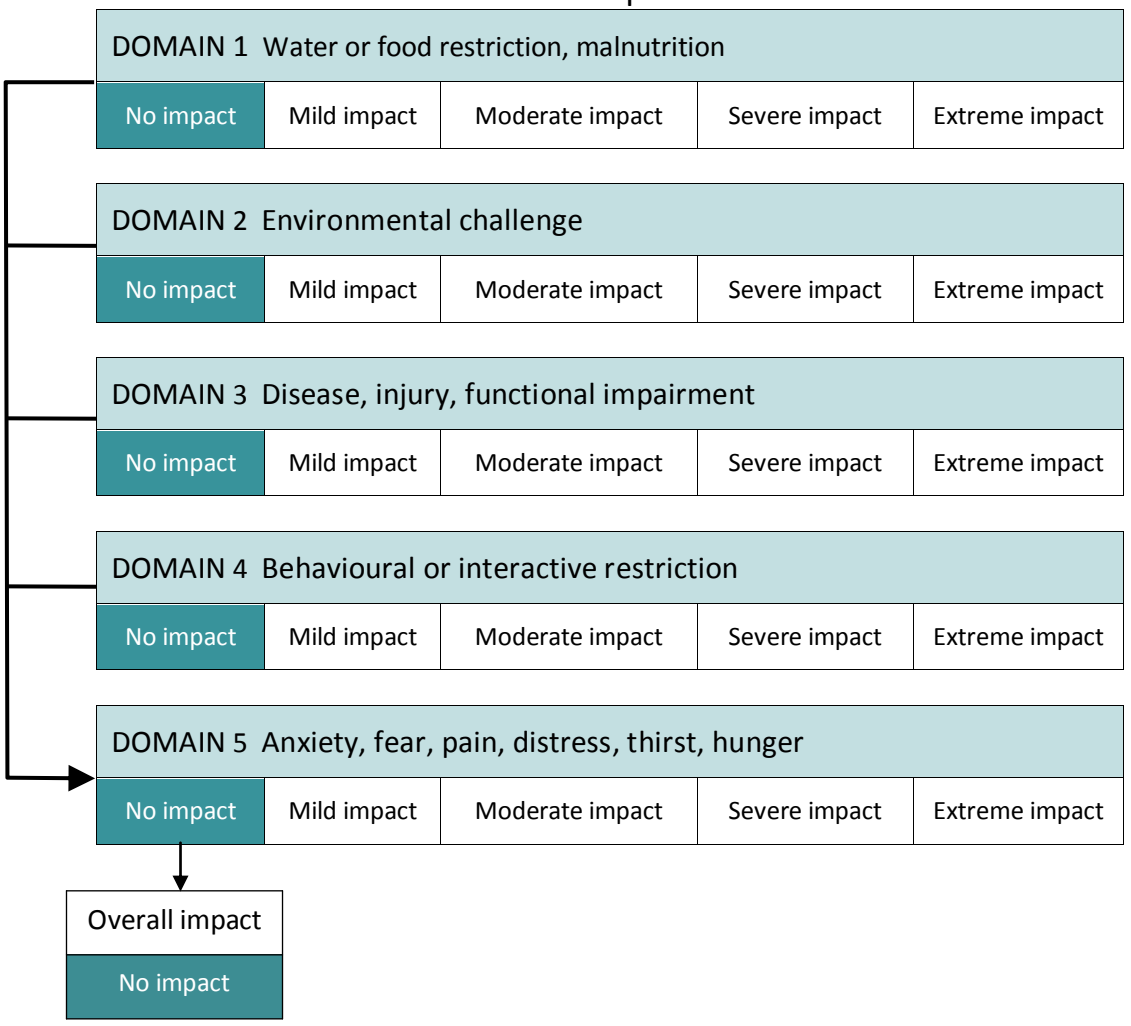
| Assumptions: | ▪ Best practice is followed in accordance with the standard operating procedure FOX007.<br>▪ With PAPP, insensibility only occurs just prior to death and the period from collapse to death can be variable. During the period from collapse to insensibility, when poisoned foxes are incapacitated, they are potentially vulnerable to a range of welfare impacts such as predation, injury, and environmental exposure, in addition to distress resulting from not being able to perform normal behaviours. The longer this period of vulnerability the more severe the welfare impact prior to death.<br>▪ Note that Part A of the assessment examines the 'impact on the animal prior to the action that causes death'. Part B then looks at the 'actual mode of death' and the 'extent and duration of suffering caused'. With ingestion of toxic baits there is often little or no impact in Part A and this part is not usually assessed. However, whilst conducting this assessment the panel acknowledge that there will sometimes be significant impacts in some or all of the five domains prior to the death of the animal and recommend that the model be modified in the future to allow for a more detailed and transparent scoring of toxic baits across the five domains in Part A. |

## PART A: assessment of overall welfare impact




| SCORE FOR PART A: | **1** |
|---|---|

Summary of evidence:

| | |
|---|---|
| Domain 1 | No impact in this domain. |
| Domain 2 | No impact in this domain. |
| Domain 3 | No impact in this domain. |
| Domain 4 | No impact in this domain. |
| Domain 5 | No impact in this domain. |

## PART B: assessment of mode of death

| Time to insensibility (minus any lag time) | | | | |
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| Very rapid | Minutes | Hours | Days | Weeks |
| **Level of suffering (after application of the method that causes death but before insensibility)** | | | | |
| No suffering | Mild suffering | Moderate suffering | Severe suffering | Extreme suffering |

| SCORE FOR PART B: | **C-D** |
|---|---|

Summary of evidence:

Duration –

After a fox has ingested a bait containing PAPP there is a lag period before signs of toxicosis such as lethargy, ataxia (uncoordinated movement and difficulty maintaining balance), and salivation are observed[1,2]. As the toxicoses progresses, foxes become unresponsive and cannot move voluntarily, but—as observed in wild dogs[3] and feral cats[4]—they are likely to still show signs of awareness and only become unconscious just prior to death.

The duration of the lag phase, duration and severity of symptoms and time to death can be variable. In a pen study of 10 foxes that ingested 400mg PAPP baits, the average time from bait consumption until signs of poisoning was 40 minutes (range 26 – 62 minutes). Average duration of symptoms was 57 minutes (range 8 to 157 minutes) and average time to death was 97 minutes (range 35-187 minutes)[2].

Suffering –

The lag period is likely to be associated with minimal suffering, however after the onset of clinical signs when foxes cannot coordinate body movements it is likely that they will experience some distress, confusion and anxiety as they cannot perform normal behaviours (e.g. standing, moving, feeding, drinking, defensive and escape behaviours). Lethargy and weakness are also potential sources of distress.

In addition—during the later phase of toxicosis when foxes are unable to move but are still conscious—if they were not able to seek appropriate shelter prior to becoming incapacitated, they are at increased risk of predation (e.g. from crows, other predators), aggression (e.g. from wild dogs, other foxes) and environmental exposure, which could lead to further distress and suffering.

## Summary

| CONTROL METHOD: | **Poisoning of foxes with FOXECUTE® para-aminopropiophenone (PAPP) baits** |
|---|---|
| OVERALL HUMANENESS SCORE: | **1C-D** |

Comments

In human cases of methaemoglobinaemia, 'chocolate brown' blood and clinical cyanosis are seen at methaemoglobin concentrations of 15 to 20%, but there are usually no symptoms at this stage. When concentrations fall between 20 and 45%, dyspnoea, fatigue, lethargy, dizziness, headache and occasionally syncope (fainting) occur. At concentrations between 45 and 55% there is a reduction in the level of consciousness and with concentrations of 55 to 70%, oxygen-carrying capacity is reduced sufficiently to cause major hypoxic symptoms. Circulatory failure, cardiac arrhythmias, seizures and coma may then be seen. With greater than 70% methaemoglobin, there is a high incidence of mortality[5].

# Bibliography


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2. Animal Control Technologies (Australia) Pty Ltd (2012). Submission to the Australian Pesticides and Veterinary Medicines Authority for Registration of FOXECUTE® Fox Bait: Part 8 Efficacy & Safety. (ACTA: Melbourne, Victoria)
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4. O'Donoghue M, Johnston M, Algar D, Buckmaster T & Quinn J. (2016). Encapsulated para-aminopropiophenone (PAPP) for the humane management of feral cats (*Felis catus*) in Australia. Unpublished raw data
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