

# Information Sheet

## Guidelines for treatment of Australian wildlife with sarcoptic mange

Project 1.4.4

### Summary mange treatment information sheet

<p><b>1. Diagnosis - confirmation of mite presence</b></p> <p><i>(for supporting content see p.7)</i></p>	<ul style="list-style-type: none"><li>• Prior to treatment, <b>confirmation of the diagnosis of sarcoptic mange should be attempted</b>, in combination with assessment of clinical signs.</li><li>• Only veterinarians or experienced personnel with required permits should take samples (e.g. skin scraping) for diagnosis.</li><li>• While definitive diagnosis can be more difficult in free-ranging wildlife, it is recommended as best practice.</li><li>• In the absence of formal diagnostics, someone with <b>expertise in the visual assessment of sarcoptic mange</b> should carry out pre-treatment assessment.</li></ul>
<p><b>2. Mange scoring</b></p> <p><i>(see p.7-10)</i></p>	<ul style="list-style-type: none"><li>• The decision around whether to treat or euthanise a mange-affected animal revolves around 1) mange severity 2) body condition/general health, and 3) capacity to treat appropriately.</li><li>• This is a <b>welfare decision</b> for each individual, assessing the costs and benefits. Severely affected animals are less likely to recover following treatment when compared to animals with mild to moderate mange.</li><li>• Those assessing wildlife body condition and health in the field require experience and knowledge of normal variation for the relevant species.</li><li>• At minimum, <b>mange severity</b> should be classified as: mild (less than 10% of body surface affected), moderate (more advanced lesions covering less than 50% of the body) or severe (greater than 50% of body surface affected by advanced lesions).</li><li>• Individuals should be given a species-appropriate <b>body condition</b> score, which for wombats can be 'very poor', 'poor', 'good' or 'very good'.</li><li>• In addition to clinical signs of mange and body condition, the <b>behaviour</b> of the animal should also be assessed as a reflection of its general health.</li><li>• <b>Effective treatment</b> is dependent on the availability of facilities and personnel to deliver a full course of the recommended treatment.</li></ul>
<p><b>3. Euthanasia</b></p> <p><i>(see p.11)</i></p>	<ul style="list-style-type: none"><li>• Deciding to treat wildlife affected by severe to late-stage mange involves careful consideration; it is <b>important not to prolong the suffering</b> of an animal in pain and an extremely poor state of health if recovery is unlikely.</li><li>• There may be other complicating factors (e.g., secondary infections, both internal and external) that are not visible and treatable in the field.</li><li>• If euthanasia is required, a species appropriate method must be used that produces a rapid loss of consciousness immediately followed by death.</li><li>• If a lactating female requires euthanasia there may be dependent young that need to be taken into care, and they may also require treatment.</li><li>• The presence of an animal that is severely affected by mange should prompt exploration into the extent of the problem locally.</li></ul> <p>As a guide, euthanasia is acceptable and should be considered (and ideally carried out by a veterinarian) if one or more of the following signs are present:</p> <ul style="list-style-type: none"><li>• The animal is extremely thin or emaciated</li><li>• Infected, foul-smelling wounds and/or flystrike</li><li>• Severe facial crusting leading to apparent blindness, difficulty breathing/eating</li><li>• 50% or more of the side of the animal is subject to hair loss and thick crusts.</li></ul>
<p><b>4. Regulatory requirements</b></p> <p><i>(see p. 11-12)</i></p>	<ul style="list-style-type: none"><li>• Using registered veterinary chemicals to treat wildlife with mange generally <b>falls under both state/territory and national legislation</b>.</li><li>• Treatment of a protected animal by a non-veterinarian is generally not allowed without government permission, especially on crown land.</li><li>• Landowner permission is always required to treat on private land, and in some jurisdictions landowners themselves must be members of licensed wildlife organisations in order to treat wildlife on their property.</li><li>• Any wildlife illness or injury that requires prescription medication (e.g. sedatives, antibiotics, pain relief) requires the involvement of a veterinarian.</li><li>• Use of veterinary chemicals such as Cydectin® or Bravecto® constitutes off-label use and requires veterinary prescription or an APVMA permit.</li><li>• Veterinarians may dispense medication for off-label use to treat wildlife under their direct supervision (NB. The degree of supervision is at the discretion of the veterinarian and may or may not involve the ability for non-vets to treat).</li></ul>



<p><b>5. Treatment</b></p> <p>(see p.13-15)</p>	<p><b>Acaricides</b></p> <ul style="list-style-type: none"> <li>• Some species or individuals may be amenable to treatment in an appropriate captive environment (e.g. possums, bandicoots, koalas). Wherever possible, mange-affected wombats should be treated in the wild, particularly adults.</li> <li>• In captive wildlife under veterinary supervision, <b>injectable ivermectin or moxidectin should be prescribed off-label at recommended livestock doses i.e., 0.2–0.4 mg/kg subcutaneously, weekly over 2-4 months</b> until negative skin scrapings are obtained.</li> <li>• For treatment of free-ranging wombats with mange, the 2020 APVMA minor-use permit approved treatment regimen is recommended i.e. 0.8 ml/kg bodyweight (<b>8 ml/10 kg</b>) <b>topical Cydectin®</b> (5 g/L moxidectin) to a <b>maximum of 20 ml/wombat, weekly for 15 weeks.</b></li> <li>• A one-off/<b>single dose of topical Bravecto® at dog dose rates (25 mg/kg bodyweight)</b> is likely to be effective against mild to moderate mange in Australian wildlife, following trials in a small number of wombats and anecdotal evidence of success when used in possums and koalas. Treatment of wildlife using this protocol is only possible under the direct supervision of a veterinary surgeon, as the product is not yet approved for off-label use via an APVMA permit.</li> <li>• Topical treatments need to be <b>delivered onto a non-scabby/crusted area of skin</b> (i.e. relatively normal skin).</li> </ul> <p><b>Supportive treatment</b></p> <ul style="list-style-type: none"> <li>• Supportive care is positively associated with the success of mange treatment in various wildlife species. In addition to the use of weekly acaricides, <b>removal of crusts, pain relief, fluid therapy, and antibiotics</b> (if secondary infections are present) are recommended for animals in care. <b>Topical sprays</b> (e.g. Cetrigen®) may provide some antibacterial action and assist with wound healing in free-ranging animals.</li> <li>• <b>Veterinary oversight is recommended and is required for prescription</b> of antibiotics and pain relief, and to determine appropriate fluid therapy rates.</li> <li>• For mange-affected wombats in care, in addition to medical treatment, particular attention should be paid to the thermal environment and nutrition.</li> <li>• Supplementary feed and water may sometimes be appropriate and helpful.</li> </ul>
<p><b>6. Free-ranging population treatment considerations</b></p> <p>(see p.15)</p>	<p>Delivery success of treatment is the greatest limitation to population-scale pathogen eradication. Population-level treatment of mange in wombats <b>requires treatment to be available at all burrows in the area (active and inactive)</b>; otherwise wombats will start to use previously inactive burrows and may avoid treatment because burrow flaps are a disincentive to entry.</p> <p>For successful population-level treatment in wombats, <b>regular monitoring of the treated burrows and affected wombats</b> is needed, and thorough treatment procedures should be followed and recorded.</p>
<p><b>7. Biosecurity</b></p> <p>(see p.16)</p>	<p><b>Zoonotic risk:</b> Direct contact with live and dead mange-affected wildlife has led to <b>mange infection in humans</b> in Australia. Dead animals with mange may pose a greater risk of transmission because the mites are seeking a new host.</p> <p>Infection risk can be minimised by personal hygiene practices (i.e. wearing gloves and protective clothing and washing hands), wearing permethrin impregnated clothing, and use of personal insect repellent.</p> <p><b>Transmission between animals:</b> It is also important to consider the possible transmission of mange between animals of the same and different species, and to animals from equipment used to handle mange-affected animals.</p>
<p><b>8. Data collection</b></p> <p>(see p. 17, 24, 25)</p>	<p>It is essential that <b>all treatment of wildlife using veterinary chemicals is recorded</b>. This may occur in a paper-based system, spreadsheet or database.</p> <p>The <b>minimum data requirements</b> for each case should be: location, species, age or age-class (juvenile/adult), sex, any individually identifying features, date of treatment, drug name and strength, dose and frequency of drug used (for wombats, number of burrow flaps deployed in treating an area rather than an individual), and outcome of treatment.</p>

See page 16 in treatment guidelines document