

# Mosquito management plan: Template and information guide

A planning and information tool to assist you with developing an integrated mosquito management plan to manage your risk of Japanese encephalitis. An integrated approach includes monitoring, environmental (non-chemical) and, depending on your production system, chemical controls.

The template seeks to guide best practice mosquito management and planning of all herd sizes and production systems.

This guide provides:

- Reasoning for implementing mosquito management activity, and
- A description of list of activities, documents or processes that could be followed to adequately meet the requirements for a mosquito management plan.

This list of activities, documents, and processes have been developed in collaboration with the pork industry, pig producers, and pig veterinary specialists.

This plan and actions form part of your biosecurity management plan and includes:



Monitoring for mosquito eggs,  
larva and adults



Responding: chemical controls



Management: non-chemical  
controls



People protection

If you notice unusual disease symptoms, abnormal behaviour, unexpected deaths or suspect an emergency animal disease in your pigs, immediately call your veterinarian, stock inspector or the **Emergency Animal Disease Watch Hotline** on **1800 675 888**.

EMERGENCY ANIMAL  
DISEASE WATCH HOTLINE  
**1800 675 888**

Do you	Y	N	N/A	Detail your management practices – What <b>DO YOU DO</b> or if not doing it, what <b>MIGHT YOU DO</b> ?
<b>Mosquito monitoring, management and control planning</b>				
<p><b>1</b> Monitor the presence and concentration of mosquitoes in and around piggery areas</p> <p><a href="#">Example template</a></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>I/we do this by:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Visually inspecting water bodies (including storage containers, effluent ponds, dams, pooled water, troughs, wallows, etc) for presence of wrigglers</li> <li><input type="checkbox"/> Visually inspecting pigs and facilities at dusk and dawn for resting adult mosquitoes (e.g. ceilings, walls, pig huts and shelters)</li> <li><input type="checkbox"/> Engaging a professional to assist monitoring</li> <li><input type="checkbox"/> Trapping</li> <li><input type="checkbox"/> Other – describe</li> </ul>
<p><b>2</b> Manage mosquitoes using non-chemical measures?</p> <p>Refer to <a href="#">Controlling mosquitoes around piggeries</a></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>I/we do non-chemical vector control by:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Removing anything in the open that is filled with water or has the potential to hold water</li> <li><input type="checkbox"/> Filling potholes or other areas around the piggery that collect water</li> <li><input type="checkbox"/> Ensuring gutters, downpipes, and drains around buildings are free of debris and trimming overhanging branches</li> <li><input type="checkbox"/> Ensuring effluent drainage is free flowing, flushed regularly and does not pool</li> <li><input type="checkbox"/> Ensuring all tanks, wells or other large water containers are sealed, or screened with 1mm mesh</li> <li><input type="checkbox"/> Reducing vegetation around the piggery</li> <li><input type="checkbox"/> Other – describe</li> </ul>

Do you	Y	N	N/A	Detail your management practices – What <b>DO YOU DO</b> or if not doing it, what <b>MIGHT YOU DO?</b>
<p><b>3</b> Control mosquitoes using chemical control (when and where required)?</p> <p>Refer to <a href="#">Controlling mosquitoes around piggeries</a></p> <p><a href="#">Example records template</a></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>When using chemical controls for mosquitoes I/we:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Only apply chemicals that are registered for use on pigs - to pigs, pig feed, surfaces that pigs may contact</li> <li><input type="checkbox"/> Only use chemicals approved for use against mosquitoes and strictly follow the directions for use on the label</li> <li><input type="checkbox"/> Ensure chemical use for mosquito control is conducted by people authorised to use chemicals</li> <li><input type="checkbox"/> Apply chemical control to water sources, the outside of sheds and buildings, effluent ponds, staff facilities and pigs</li> <li><input type="checkbox"/> Restrict chemical use only to areas required to be treated</li> <li><input type="checkbox"/> Keep records of all pest control activities</li> <li><input type="checkbox"/> Other – describe</li> </ul> <p>I/we:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Apply chemicals to kill mosquito larvae (larvicide)</li> </ul> <p>The larvicide I/we (or our pest controller) use is:</p> <p>I/we apply it to the following areas:</p> <p>The frequency that I/we apply larvicide/s is:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Apply residual chemical(s) to kill adult mosquitoes (adulticide)</li> </ul> <p>The residual adulticide(s) I/we (or our pest controller) use is:</p> <p>I/we apply adulticide(s) to the following areas:</p> <p>The frequency that I apply these chemical/s is:</p>

Do you	Y	N	N/A	Detail your management practices – What <b>DO YOU DO</b> or if not doing it, what <b>MIGHT YOU DO</b> ?
<p><b>3</b> Control mosquitoes using chemical control (when and where required)?</p> <p>Refer to <a href="#">Controlling mosquitoes around piggeries</a></p> <p><a href="#">Example records template</a></p>				<p><input type="checkbox"/> Fog with a chemical to kill adult mosquitoes</p> <p>The chemical I/we (or our pest controller) fog with is:</p> <p>I/we fog in the following areas:</p> <p>The frequency that I/we fog these areas is:</p> <p><input type="checkbox"/> Apply chemicals directly to pigs</p> <p>The chemical/s I/we apply directly to pigs are:</p> <p>The frequency that I/we apply these chemical/s is:</p>
<p><b>4</b> Ensure farm workers, family members and property residents are aware of the availability of Japanese encephalitis virus (JEV) vaccine, symptoms of Japanese encephalitis and how they can protect themselves from infection.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>I/we do this by:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Informing all workers, family members, property residents and regular contractors about the symptoms of JE in humans</li> <li><input type="checkbox"/> Directing workers, family members and property residents to information and clinics for JE vaccination</li> <li><input type="checkbox"/> Providing or encouraging the use of appropriate clothing and repellent use by workers, family members, property residents and regular contractors to protect themselves against mosquitoes (e.g., long-sleeved, loose fitting clothing, insect repellent)</li> <li><input type="checkbox"/> Other – describe</li> </ul>

**My top 3 mosquito management priorities to work on are:**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

**Next plan review date:** \_\_\_\_\_

Plans should be reviewed at least every 12 months

**Optional: Veterinary authorisation**

Veterinarian name, state and registration number: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

**Do you**

The following three (3) measures relate to mosquito management.

In early 2022, Japanese encephalitis, a mosquito-borne viral disease that affects pigs, was detected in Queensland, New South Wales, Victoria and South Australia. Japanese encephalitis (JE) is a zoonotic disease that affects both pigs and people. Ongoing management of mosquitoes in and around piggery areas is important in reducing impact to production and human health (staff, farm visitors, families and farm residents).

<p><b>1</b> Monitor the presence and concentration of mosquitoes in and around piggery areas</p>	<p>Explain how you monitor mosquito presence on your farm. This may include the following examples:</p> <ul style="list-style-type: none"> <li>• Visual assessments of water bodies</li> <li>• Engaging a professional</li> <li>• Implementing mosquito traps</li> </ul> <p><i>Refer to the Pest animal, insect and rodent monitoring and control record template</i></p>
<p><b>2</b> Manage mosquitoes using non-chemical measures?</p>	<p>Refer to the Farm Biosecurity's webpage on <a href="#">Controlling mosquitoes around piggeries</a> for:</p> <ul style="list-style-type: none"> <li>• Guide on <a href="#">Integrated mosquito management principles in piggeries</a></li> <li>• Factsheet on <a href="#">Controlling mosquitoes around piggeries</a></li> </ul> <p>Explain how you manage mosquitoes using non-chemical controls on your farm</p> <ul style="list-style-type: none"> <li>• Reduce mosquito breeding on your property by:             <ul style="list-style-type: none"> <li>◦ Removing anything in the open that is filled with water or has the potential to hold water</li> <li>◦ Filling potholes or other areas around the piggery that collect water</li> <li>◦ Ensure troughs are regularly cleaned by removing stale water, scrubbing with a stiff-bristled brush, and refilling with fresh water</li> <li>◦ Ensuring gutters, downpipes, and drains around buildings are free of debris that creates pooling water, and trimming overhanging branches</li> <li>◦ Ensuring effluent drainage is free flowing, flushed regularly and does not pool</li> <li>◦ Ensuring all tanks, wells or other large water containers are sealed, or screened with 1mm mesh</li> </ul> </li> <li>• Reducing vegetation around the piggery will minimise areas where adult mosquitoes can rest</li> <li>• Ensure all windows and doors on staff facilities are covered by well-maintained mosquito proof screens (where appropriate)</li> </ul>
<p><b>3</b> Control mosquitoes using chemical control (when and where required)?</p> <p><a href="#">Example records template</a></p>	<p>Refer to the Farm Biosecurity's webpage on <a href="#">Controlling mosquitoes around piggeries</a> for:</p> <ul style="list-style-type: none"> <li>• Guide on <a href="#">Integrated mosquito management principles in piggeries</a></li> <li>• Factsheet on <a href="#">Controlling mosquitoes around piggeries</a></li> </ul> <p>Explain how you manage mosquitoes using chemical controls on your farm.</p> <p>NOTE:</p> <ul style="list-style-type: none"> <li>• Chemical residues in pork are a trade and food quality risk</li> <li>• Only apply chemicals that are registered for use on pigs to pigs, pig feed, surfaces pigs may contact, or in a way that might result in chemical drifting onto pigs</li> <li>• Only use chemicals approved for use against mosquitoes and strictly follow the directions for use on the label</li> <li>• Chemical use for mosquito control should be conducted by people authorised to use chemicals in accordance with state/territory training and licensing requirements. Preferably use a licensed pest control operator.</li> <li>• Seek professional advice if you are unsure about how to use a chemical</li> <li>• Approved chemical control can be applied to water sources, effluent ponds, the outside of sheds and buildings, staff facilities and pigs</li> <li>• Restrict chemical use to areas required to be treated</li> <li>• Keep records of all pest control activities</li> <li>• Be aware that misuse of chemicals can create environmental risks to bees, wildlife and aquatic life</li> </ul>

**Some diseases, such as JE can be transferred from mosquitoes to pigs and back to mosquitoes and from mosquitoes to people.**

**4** Ensure farm workers, family members and property residents are aware of the availability of Japanese encephalitis virus (JEV) vaccine, symptoms of Japanese encephalitis and how they can protect themselves from infection.



To mitigate the risk of you, your staff or property residents or regular contractors being exposed to the Japanese encephalitis virus, consider having a farm policy that:

- informs staff about the risks and signs of JEV in both people and pigs
- recommend JEV vaccination, including how to arrange vaccinations
- outlines the appropriate clothing and repellent use to protect against mosquito bites, and
- provides insect repellent.