

FOR DISCUSSION/COMMENT

SWFSPP Annual Meeting 2022

Agenda Item 4.2

Last updated: 20 September 2022

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TARGETTED MYIASIS INSPECTIONS**RECOMMENDATION**

1. That the SWFSPP Steering Committee:
 - a. **NOTE** the concerns raised about aspects of targeted myiasis inspections
 - b. **COMMENT** on the discussion questions
 - c. **PROVIDE DIRECTION** for ongoing surveillance in regards to myiasis inspections

BACKGROUND

1. An action item from the last SWFSPP steering committee meeting in 2021 was for AHA and jurisdictional coordinators to *investigate alternatives to the current active myiasis inspections and reporting*.
2. Active myiasis inspections for SWF are undertaken across the north opportunistically on mobs of cattle in export depots, saleyards and during cattle tick inspection and treatments. Some NAMP herds are also inspected for wounds and myiasis on a regular basis. In addition, myiasis inspections are also undertaken during health inspections and surveys of companion animals and wildlife.
3. Two factors that influence the sensitivity of inspections for detecting myiasis are the wounding rate and the probability of exposure to SWF if present.
4. Sample size estimates in the current work instruction were based on a wounding rate of 11%. This rate was observed in a study in Indonesia in a similar environment and a separate study in Australia using survey data from extension officers in NSW, Qld and SA reported a similar average wounding rate estimate for cattle under extensive conditions. However, field data from animal inspections undertaken in the SWFSPP indicate a significantly lower wounding rate. For instance, a WA report to the SWFSPP meeting in 2021 found the wounding rate was around 0.2% from almost 80,000 inspections over a 6-year period, a 57x difference. If a significantly lower wounding rate is used for sampling calculations, the number of animals required to examine in order to get high levels of confidence in detecting myiasis, if present, is much higher.
5. In the study population, the probability of large mobs of inspected cattle in yards being exposed to SWF, if present is also not equal. Clustering is an issue and usually managed by increasing the number sampled. Some inspections are undertaken on animals that have been moved from lower risk areas prior to aggregation. Cattle that have wounds are also likely to be removed from consignments of stock for slaughter, sale or export.
6. It is possible that the low observed wounding rate and associated myiasis rate may be an underestimate. We may not be looking at enough wounds or at the animals most likely to have wounds and at times of increased wounding such as around marking.

7. However, increasing the number of these targeted inspections to counter the low average wounding rate and any biases in the population being sampled would significantly increase jurisdictional costs.
8. Despite the low sensitivity of myiasis inspections as currently undertaken, when all surveillance activities of the program are considered together (both active and passive) the level of confidence in freedom from SWF appears to be quite high but does require formal verification. It is possible that reducing or even ceasing some targeted surveillance activities for aggregated cattle mobs may have little overall impact on the sensitivity of the surveillance system for the Screw Worm Fly program.

DISCUSSION

9. QUESTIONS FOR CONSIDERATION BY THE COMMITTEE

- a) Is targeted myiasis inspections of cattle as currently undertaken delivering useful surveillance data to underpin our current country status for SWF and our ability to provide early warning of SWF incursions?
- b) Do the benefits justify the costs? Most targeted myiasis inspections are undertaken while cattle are undergoing other inspections or treatments but there is still some additional cost associated with the activity and the required reporting.
- c) Do targeted myiasis inspections contribute any ancillary benefits (e.g., welfare, traceability, disease detection etc.) that enhances our reputation with export markets?
- d) Should any SWF surveillance activities be varied and if so, what are alternatives and what costs and benefits are they likely to bring to the program?
- e) Would a system sensitivity analysis of all surveillance components of the SWFSPP assist the committee in determining if the program has the optimal combination of surveillance components, and any potential changes required?

10. FINANCIAL IMPLICATIONS

If a system sensitivity analysis is considered to be worthwhile, this will need to be properly scoped and funded.

11. CONSULTATION/COMMUNICATION

Initial discussion has been held with individual program stakeholders.

12. NEXT STEPS/ACTIONS

If the committee determines a change in the surveillance components is required, this recommendation will be put forward by AHA to Animal Health Committee for endorsement.