

FOR INFORMATION

NAMP Technical Committee Annual Meeting 2025

Agenda Item 4.10

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REFERENCE ENTOMOLOGY

RECOMMENDATION

1. That the NAMP Technical Committee NOTE:

- a) Commencement of a project to develop a key to help to identify males of all species present in Australia
- b) Finalising manual for identification of female *Culicoides* from Australia

BACKGROUND

2. The functions of the NAMP reference entomology program are:

- 1. Confirm identification of *Culicoides* specimens collected by NAMP;
- 2. Build and maintain a reference collection of Australian and important exotic species of *Culicoides* DNA barcodes and both slide-mounted and ethanol preserved specimens to assist with identification of specimens collected by NAMP;
- 3. Provision of mounted specimens of *Culicoides* species to NAMP entomologists on request;
- 4. Assisting in the preparation of identification aids for *Culicoides* species;
- 5. Provide advice and reports to stakeholders and clients (particularly producers, exporters, and AG-DAFF) as required;
- 6. Monitor NAMP entomology operations to ensure that they are effective and efficient in meeting the program objectives and report to the program manager;
- 7. Advise the program manager of national and international entomology issues which may affect the future focus of the NAMP;
- 8. Coordinate and propose to the NAMP Technical Committee, technical development of the NAMP entomology capacity as required;
- 9. Contribute to the maintenance of the NAMP Business and Operational Plans including ensuring that an adequate budget is proposed for agreed reference entomology activities;
- 10. Organise slide mounting of *Culicoides* specimens;
- 11. Monitor succession training for the role of Reference Entomologist;
- 12. Facilitate the publication of technical entomology material for the NAMP as agreed by the NAMP Technical Committee.

The NAMP reference entomology budget is used to pay for the mounting of specimens onto slides (function 10) which is required to facilitate the identification of specimens (function 1), build a reference collection (function 2), provide specimens to other entomologists (function 3), identify changes in risk posed by exotic species (function 7) and used in the production of identification aids (function 4). Where required, for example the detection of species not previously reported from Australia, confirmation of identifications is provided by DNA analysis conducted by NSW DPI (function 1) relies on data from the DNA library (function 2). A system to pay for this service is now available and part of the Reference Entomology budget will be used to support this function.

DISCUSSION

3.

- a. Detections: No detections of exotic species were made this year.

- b. Identification service: Relatively few specimens were received for identification this year, however several photographs were received.
- c. Key: A NAMP-funded project to produce an identification key for female specimens of all species of *Culicoides* reported from Australia was completed last year and is now being converted into a manual. The key is constantly being updated as the NAMP entomology team continue to test it with their specimens and it is envisaged that periodic updates to the manual will be made to reflect that changes. The first draft of the manual is nearing completion.
- d. NAMP Info: Work that began with Daniela López from AHA to validate entomology data on NAMPinfo has not advanced much in the last 12 months.
- e. A project to develop an identification key to male specimens of all species of *Culicoides* present in Australia has commenced. Specimens required for this project have been accumulated although others are still needed as not all species are currently represented.
- f. A DAFF-funded project investigated the potential of *Culicoides* to act as vectors of Lumpy Skin disease in Thailand. The project identified several species as carriers of the virus and ranked species as potential vectors of bovid diseases. The final report from this project is currently waiting clearance from the Thailand government for more widespread distribution

FINANCIAL IMPLICATIONS

- 4. The retirement of the Reference Entomologist from full time employment has led to Reference Entomology services provided now being charged to the Reference Entomology budget. The development of the identification key has significantly reduced reliance of NAMP Entomologists on Reference Entomology services for confirmation of routine specimens, although building a reference library of DNA barcodes continues to be a priority.

CONSULTATION/COMMUNICATION

- 5.
 - a. Copies of the identification keys have been distributed to all NAMP entomologists for testing. An early flurry of suggested improvements has slowed suggesting that the keys are approaching user-friendliness.
 - b. Conversion of the keys into a manual has required extensive checking that the converted document has not lost any of its functionality. This review process is continuing.

NEXT STEPS/ACTIONS

- 6.