

FOR INFORMATION

NAMP Technical Committee Annual Meeting 2023

Agenda Item 4.10

Last updated: 7 August 2023

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REFERENCE ENTOMLOGY**RECOMMENDATION**

1. That the NAMP Technical Committee NOTE:

- a) Completion of a project to develop a key to help to identify females of all species present in Australia
- b) Issues surrounding naming and recording of species in the NAMP Info database have been resolved

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. Outsource 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: Two detections of *C. nudipalpis* were made this year. These were both made at Cobourg Peninsula in July and August with only low numbers (2 specimens and 1 specimen respectively) reported. An intensive survey of the peninsula was made in June by NAQS to try and map the distribution of this species. One of these specimens contained the remnants of a blood meal from a pig, representing the first hard evidence of the host range of this species. No other exotic species were detected in NAMP activities this year.
- b. Identification service: A total of 249 specimens from 34 collections were received for identification from Qld and the southern states. Mounting of these specimens onto slides and submission for DNA barcoding continues and the reference collection is slowly becoming more comprehensive.
- c. Key: A NAMP-funded project to produce an identification key for female specimens of all species of *Culicoides* reported from Australia was completed.
- d. NAMP Info: Issues surrounding the list of species names available on NAMP info have been discussed and a finalized list has been provided to Elias.

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.

CONSULTATION/COMMUNICATION

5.
 - a. The key development project included a workshop involving all end users of the key which was hosted by NSW DPI at Orange and funded by AHA-NAMP. The workshop ran from 30 Jan – 3 Feb with 19 participants from the Federal, Victorian, NSW, Qld and NT governments. The workshop introduced a draft version of the key to users who were provided with specimens and asked to run these specimens through the key and to report any problems they encountered. This resulted in 75 suggested improvements, all of which have been incorporated into the final key and species fact sheets. Many thanks to all participants for their input to make the keys suit their needs and to Birgit and her team for the mammoth organizing effort required, to Anna Genge, Luke Watson and Leanne Nelson for providing reference specimens, to David Gopurenko and Ros Mirrin for running the DNA barcoding workshop and to Bronwyn and Emily for logistical support and the tedious task of recording all of the suggested improvements. The finalized keys have been distributed for further testing and a version will shortly be made available on the AHA website.
 - b. Changes to the list of species on NAMP Info were circulated to the NAMP entomologists for comments prior to incorporation into the database

NEXT STEPS/ACTIONS

6.
 - a. Completion of the key for females of all species recorded from Australia is a significant milestone for the NAMP program. The logical next step would be to develop a similar key for male specimens.
 - b. The migration of the database onto AUS Pest Check will require input over the coming months.