

"Do it with Dung"

FROM THE MOUNTAINS
TO THE MURRAY

NEWSLETTER

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Dung Beetle Farm-walks & Field Days

In early September, dung beetle farm-walks and workshops were held in Springhurst, Lucyvale and Milawa/Oxley. Over 80 people attended and had the opportunity to see dung beetle and earthworm activity in the field.



Farm-walk held at Springhurst 7/9/09

Dr Bernard Doube provided many insights into the lifecycles of both dung beetles and earthworms and how they work together to improve the physical, chemical and biological components of the soil (particularly the subsoil).



Earthworm soil casts in dung beetle tunnel.

Earthworm activity was found in dung beetle tunnels 45 – 60cm into the subsoil.

Without dung beetles, earthworm activity is generally restricted to the top 10-15 cm of the soil profile.

Earthworm cocoons found at the Milawa farm-walk. The cocoons house earthworm eggs.

Earthworms are a vital component in a healthy soil system. Dung beetles are linked to increases in earthworm size and abundance.



Phoretic mites & Hister beetles

An observant monitor from Meadow Ck sent in a *Bubas bison* beetle that had small creatures (1-2mm) attached to its underside. These are known as "phoretic" or "predatory" mites and are considered beneficial, as the mites feed on fly eggs and larvae. The mites hitch a ride with the beetle from one dung pad to another. In return, the mites ensure that more dung is available for beetles and less for flies. A win-win situation for all. The CSIRO had plans to introduce a range of phoretic mites species from Africa to assist with fly control, however these plans were not fully realised with the closing of the Dung Beetle Project.

Another very small beetle (1-2mm wide & 2-3mm long) found in a trap at the same property is likely to be a native *Hister* beetle that belong to the Histeridae family. Similar beetles were also found in the Corowa region. *Hister* beetles are a beneficial beetle as they prey on fly eggs and larvae. It is interesting to note that both mites and *Hister* beetles are becoming more abundant with the approaching increase in fly populations.



Example of Hister beetle

Colour: Black

Length: 2-3mm

Width: 1-2mm

These beetles feed on fly eggs and larvae

Image: Australia Faunal Directory

The CSIRO dung beetle project released a number of *Hister* species between 1968 and 1975. *Hister nomas* was released in Qld, NSW, Vic, Tas & WA. They have been recovered in NSW and Qld.



Hister nomas

Length: 7-9mm

Colour: Shiny black

Smooth body, found in dung, feeds on nematodes and fly larvae – Note size of pincers on head.

Image: CSIRO

Introduction of new dung beetle species

A significant step forward has been reached in the bid to import two new dung beetle species, *Bubas bubalus* and *Onthophagus vacca* into Australia. It is anticipated that these species will have the potential to increase dung burial and fly control in early Spring.

Importation documents prepared by CSIRO Division of Entomology have been submitted to the Department of Environment, Water, Heritage and the Arts and the Australian Quarantine and Inspection Service (DAFF). The proposal sets out the case for importation and procedures for the proposed introductions. Both bodies need to approve the application if it is to proceed to the next level. It is anticipated that this process may take up to 12 months. If approved, the next step involves sourcing funding for the project.

Importing new species is a lengthy process, but most importantly, the first steps to reaching the goal have been taken. Our congratulations extend to all of the people involved in the preparation and submission of the documentation.

Around the traps

Onthophagus australis (native)

Be on the look out for the native beetle *Onthophagus australis*. It has been found in small numbers at Benambra, Lucyvale, Kergunyah, Mitta, Oxley and has been found working in sheep dung in the Yackandandah area.

O. australis is a black beetle (7-12mm in length) with a metallic sheen. The males have upright horns and this species is slightly bigger than *O. taurus*. Both males and females have a very slight groove running down part the mid-section.



African black beetle (pest species)

Swarms of beetles have been observed at Lucyvale (around dusk) in late August and early September. On closer inspection, these were found to be the African black beetle (*Heteronychus arator*). This is the "roaming" stage when adults emerge from overwintering in the soil and are in search of a mate. Eggs are laid in the soil in spring and emerge as adults between December and early February. Damage to pastures is caused by the larvae, which cut off the grass roots below the soil surface. Severe infestations can cause the pasture to wilt and brown off. The beetles are 11-14mm in length, glossy black and have a stout body.



Summer beetles arriving early.

Whilst there are still a small number of *B. bison* beetles being trapped and signs of their activity in the paddock, it has been surprising to receive reports of summer beetles (*O. binodis*, *O. taurus* & *E. fulvus*) being trapped in the last couple of weeks.

Site 39: Lucyvale 9/9/09 trap results:

2	<i>B. bison</i>	2	<i>O. australis</i>
3	<i>E. fulvus</i>	2	<i>O. binodis</i>

Site 25: Bruarong 18/9/09 trap results:

1	<i>B. bison</i>	16	<i>O. australis</i>
1	<i>E. fulvus</i>	8	<i>O. taurus</i>

Site 82: Bruarong 19/9/09 trap results:

3	<i>E. fulvus</i>
14	<i>O. taurus</i>

Site 44: Mitta 14/9/09 trap results:

6	<i>E. fulvus</i>
26	<i>O. taurus</i>

Site 65: Oxley 18/9/09 trap results:

2	<i>B. bison</i>
49	<i>O. taurus</i>

Site 57: Tawonga 17/9/09 trap results:

5	<i>E. fulvus</i>
9	<i>O. taurus</i>

It is important to send in a sample of each species that you trap. *O. binodis*, *O. taurus* and *O. australis* can be tricky to tell apart. By verifying samples we can be confident of our results. If you require more monitoring slips, envelopes or matchboxes, please let Belinda know.

Upcoming monitoring weeks



Weeks commencing:

Sunday 11th October

Sunday 25th October

Monitoring weeks commence on the **second** and **fourth** Sunday of each month.

Reminder: Steering Committee Meeting

The next meeting will be on **Friday 16th October**, 10.00am – 11.30am (followed by lunch) North East CMA Office, Footmark Court Wodonga. Could you please RSVP to Belinda by 14/10/09



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