Slug Management Project - September Update

GRDC Funded Project

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Introduction

Thank you for your help in collecting the data for the GRDC funded National Slug Management project. The purpose of this document is to share slug population monitoring data that is being collected for this project. If you have any questions, please feel free to contact Dr. Kate Muirhead (lead researcher - SARDI), Dr. Thomas Heddle (University of Adelaide), Dr. Kym Perry (University of Adelaide) or Dr. David Logan (University of Adelaide).

This document plots slug population counts and weights for the common agricultural slug species collected at monthly intervals from numerous sites (n ~ 30) across nine regions of Australia. Please feel free to share this within your grower group.

Results to Date

A total of 4717 slugs have been collected under slug mats across all sites (Table 1). Slugs have been captured in some locations, however the numbers have varied considerably among regions. Given the dry start in parts of Australia, it is not surprising that low slug numbers have been captured in some regions.

Table 1: Mean slugs captured per mat as a total across the sampling period to date, and the total slug abundance per organisation

Organisation	Mean	Total
Birchip CG	2.28	1866
Combined Ag Serv.	0.14	62
Elders Albury	0.13	60
MA Nash	2.24	2263
Nutrien Cummins	0.73	176
Riverine Plains	0.52	259
SARDI	0.03	31

Monthly change in slug population

In Southwest VIC, Wimmera VIC and WA slugs peaked in June and July (VIC Southwest, VIC Wimmera and WA), while slug numbers peaked in Riverina Albury NSW, Eyre Peninsula SA and Southeast and Mid North SA) in late July or August. We look forward to seeing how the slug population changes across the year and throughout the life of the project.

The Australian threshold for the Grey field slug is 1 slug per mat. Many of our sites are currently below this. If you wish to read the threshold paper written by Nash et al.(2007), please feel free to ask us as we have a PDF version available for distribution.

The figures below show the slug numbers for each species by regions. The y-axis for mean count is different per region, depending on slug number found within the region. Solid lines represent adult slugs and juveniles are represented by dotted lines.

Black Keeled Slug

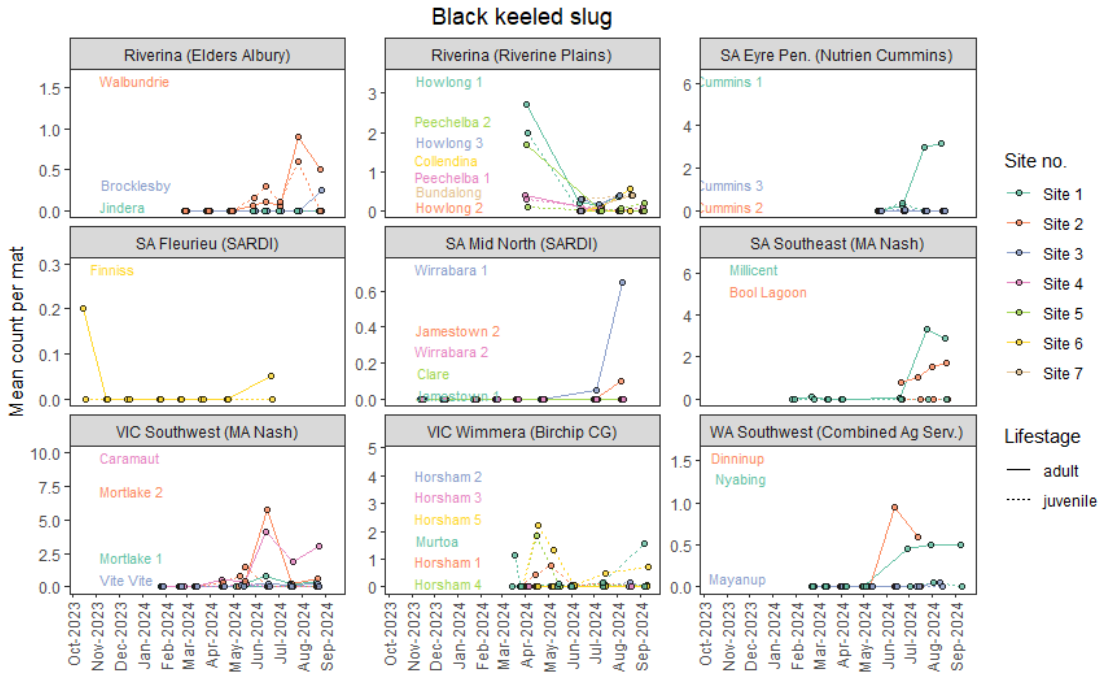

Figure 1: Average Black keeled slug population under mats across all sites.

A total of 1309 black keeled slugs have been caught across all sites. Black keeled slug numbers (Figure 1) have increased across all sites (Figure 1). Subsequent decreases were recorded in VIC SW, Riverina Albury NSW and WA after the peaks.

Grey Field Slug

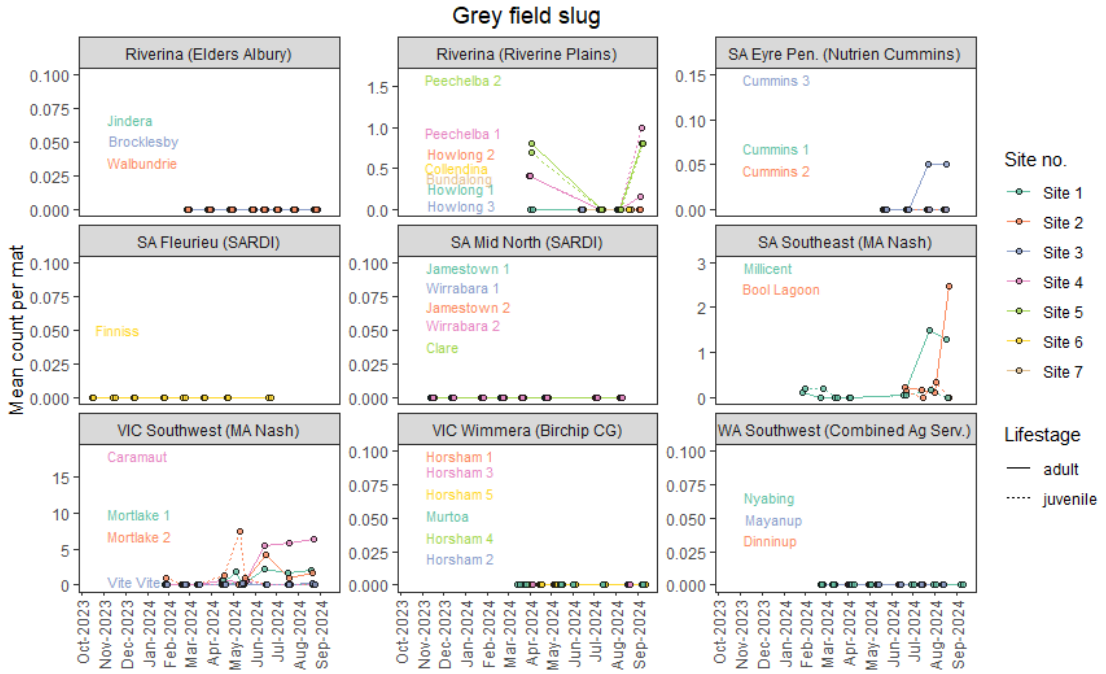

Figure 2: Average Grey field slug population under mats across Australia

A total of 1467 grey field slugs have been caught, with no captures recorded at Elders Albury, SA Fleurieu, Mid North, VIC Wimmera or in WA. Grey field slugs have increased in SW VIC and Southeast SA (Figure 2). Early captures of grey field slugs were recorded in the Riverina (Riverine Plains) and are bouncing back in September.

Brown Field Slug

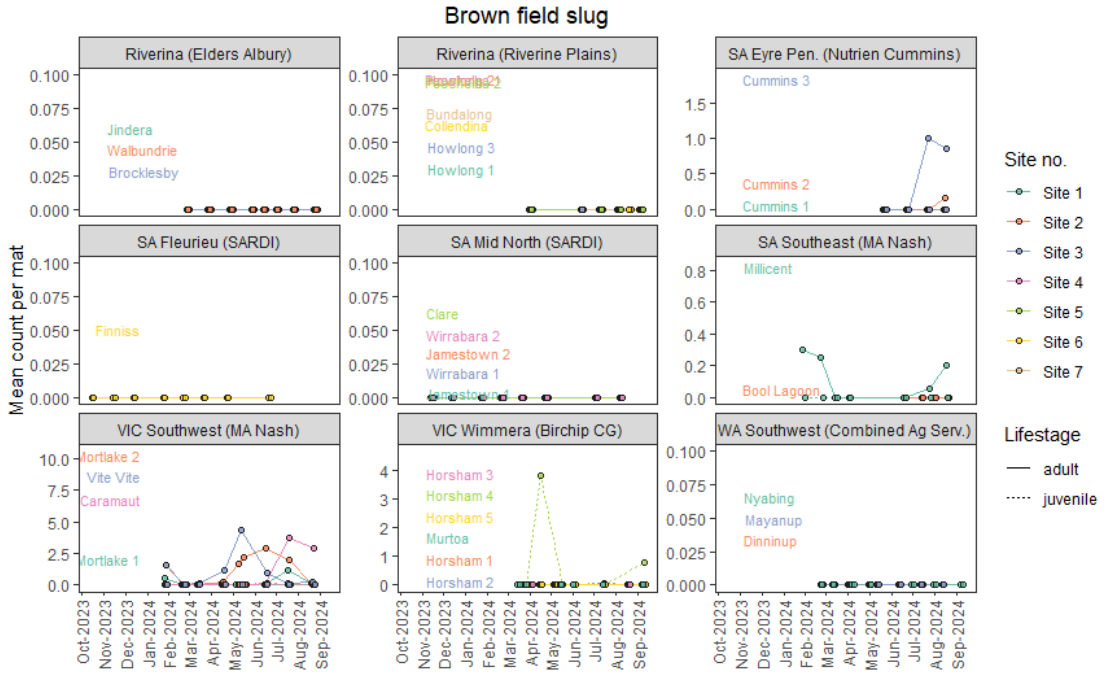

Figure 3: Average Brown field slug population under mats across Australia

A total of 617 brown field slugs were recorded across the sites (Figure 3). However, this species was not found in the Riverina, SA Fleurieu, Mid north or WA, and only a few specimens were recorded in the VIC Wimmera. Brown field slugs were recorded early in the year in SA Southeast before declining over winter (Figure 3). In the VIC Southwest, brown field slug numbers increased over the winter months before decreasing in some sites. This species has also been observed in the VIC Wimmera and SA Eyre Peninsula.

Striped Field Slug

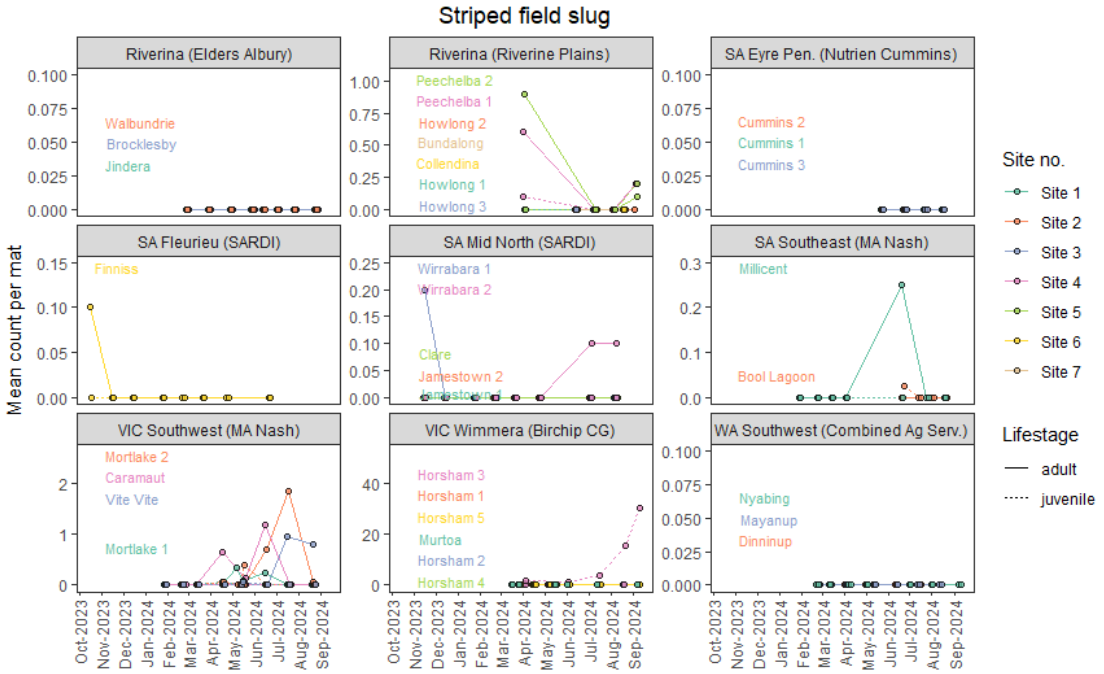

Figure 4: Average Striped field slug population under mats across Australia

A total of 1323 striped field slugs were found across the sites, except in the Riverina Albury, SA Eyre Pen. And WA. Striped field slugs have increased intermittently in SW Victoria (majority are adult specimens) and in the VIC Wimmera (majority are juveniles) (Figure 4). There has been big increases of striped field slugs at the VIC Wimmera sites.

Average slug weight

Slug weights over time will give us an indication of the reproduction status of the slugs at a given point in time.

Table 2: Mean slug weight (mg) per species and total sample size per species

Species	Mean (mg)	Sample Size
Black keeled slug	592.52	723
Brown field slug	154.65	314
Grey field slug	287.34	450
Striped field slug	631.11	446

Other Projects

There are several other research questions currently being addressed at the University of Adelaide and SARDI around slugs. Thomas Heddle is currently working out how to culture black keeled slugs for experimental use and investigating the influence of temperature of slug survival and growth rates. Some of these experiments will help determine the influence of temperature and soil moisture on slug reproduction and activity. Further to

this, Thomas is investigating the vertical and horizontal movement of slugs within paddocks.

Spring baiting trials have commenced and will be conducted over the next two years in SA, NSW and VIC in collaboration with Riverine Plains and Birchip Cropping Group.

We will use this space to update you on how these trials progress.

Signing off,

The Slug Team

Funding Acknowledgement

The National Slug Management project is funded by GRDC (DAS000000)

Useful References

GRDC "Slugs in Crops. The back pocked guide"
https://grdc.com.au/__data/assets/pdf_file/0030/578127/240513-Slugs-in-crops-the-back-pocket-guide.pdf

Nash, M. A., Thomson, L. J., & Hoffmann, A. A. (2007). Slug control in Australian canola: monitoring, molluscicidal baits and economic thresholds. Pest Management Science: formerly Pesticide Science, 63(9), 851-859.
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