



NSW DEPARTMENT OF  
PRIMARY INDUSTRIES

# TURNING THE WORM

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**Welcome** to this issue of TTW. The main purpose of this informal newsletter is to share information with those particularly interested in the management of endoparasites of farmed animals, including sheep, goats and cattle.

## WormBoss is coming

Here is a recent statement from the Sheep Cooperative Research Centre:

'WormBoss is a computer-based decision tree, developed by the Sheep CRC with significant assistance from Australian Wool Innovation, to assist with decisions on parasite management. It is likely to be a very valuable product for producers as well as re-sellers and consultants. It will be launched jointly by the CRC and AWI [...early in 2005].'

Yes, NSW DPI is one of the 'players'.

<sup>1</sup> NSW DPI, PO Box 991 Armidale, NSW, AUSTRALIA. Email: <stephen.love@agric.nsw.gov.au>

## The WormMaster (WormBoss<sup>2</sup>) website and CD – a decision aid and information source for Australian sheep producers.

AS Le Feuvre (2004). *Proceedings of the Australian Sheep Veterinary Society 2004 – Canberra Conference, Volume 14* (S Williams, Ed.).

### Summary

AWI and the Sheep CRC have developed a website/CD information package to provide Australian sheep producers with a regionally-based decision aid and a complete information system of all aspects of worm management.

The product is [to be] promoted and distributed through relevant departments of Agriculture, drench resellers, drench companies and consultants.

The product, combined with an extensive marketing campaign, aims to increase the use of worm egg counts, drench resistance tests and professional advisers by producers. This will reduce the impact of drench resistant worms and associated costs to the sheep industry and enhance general worm management.

Arthur Le Feuvre



Further information:  
Arthur.LeFeuvre@dpi.qld.gov.au

## Cattle worm Agnote

Spring is an important time for parasites in young cattle.

<sup>2</sup> This website/CD information package is now known as 'WormBoss', and is due for launch around February/March 2005.



### Cattle worm control — the basics

Agnote DAI 112, February 2004  
Stephen Lene, Veterinarian/State Coordinator-Internal Parasites, Armidale  
Dr Gareth Hutchinson, Research Officer (Parasitology),  
Elizabeth Macarthur Agricultural Institute

NSW DPI has an Agnote on cattle worm control.

Check it out at

[www.agric.nsw.gov.au/reader/cattlehealth](http://www.agric.nsw.gov.au/reader/cattlehealth)

## The latest in worms

### ASP annual conference – Arthur's overview

The following is from the September issue of "WormBuster laboratory report", which is more or less the Queensland Department of Primary Industries equivalent of NSW's 'WormFax'.  
<[www.agric.nsw.gov.au/reader/wormfax-nsw](http://www.agric.nsw.gov.au/reader/wormfax-nsw)>

The WormBuster report is edited by Queensland DPI colleague **Arthur LeFeuvre**.

Arthur reports on his visit to the annual conference of the Australian Society of Parasitology held in Fremantle recently. This may be of interest for TTW readers:

"I had the good fortune to attend the Australian Society of Parasitology conference in Fremantle recently.

In terms of internal parasites of sheep and goats, some of the main topics were:

- Drench resistance getting worse by the day, producers need to improve management by doing more worm egg counts, testing for drench resistance and use more non-chemical management (sound familiar?).

## New liver fluke test a winner

23 July 2004 | Media Release  
[www.agric.nsw.gov.au/reader/releases/fluke.htm](http://www.agric.nsw.gov.au/reader/releases/fluke.htm)

NSW Department of Primary Industries has adopted the new French Institute Pourquier ELISA test kit to test for liver fluke infections in serum from cattle and sheep.

The test is highly sensitive at 99 per cent and can detect new infections within two weeks after they start. The test is suitable for herd screening as well as for individual animal testing.

Liver fluke is estimated to cause an average loss of 5pc of production and graziers spend around \$20 million annually on chemical treatments.

In cattle, losses include reduced milk production and quality as well as lower growth and feed conversion rates in fattening cattle. Signs of infection include jaundice, ill-thrift, anaemia and 'bottle jaw' (oedema under the jaw). Testing for liver fluke should be an integral part of a control program for properties in fluke prone areas.

Meat & Livestock Australia funded the validation of the test. (*Validation done by Dr Gareth Hutchinson and colleagues – Ed.*)

The Department is also working on validating the test to use vat milk samples to test for liver fluke and hopes to have this part of the test up and running in the next few months.

This will make on-farm sampling easier and help reduce the cost of herd screening to around \$30.

Contact: Elizabeth Macarthur Agricultural Institute Parasitology Diagnostic Laboratory  
4640 6366

- Vaccines. There is still a fair bit of research effort globally, but anything significant is still a long way off.
- Fungi. Fungi which attack the worm larvae in the dung pellet have been isolated. It looks promising and field testing is being conducted. Commercial release is still some way off, probably a couple of years.
- New drench types Very little appears to be on the horizon. This means producers will have to manage with what they have got in the short term at least.
- Testing for worms. This will gladden the hearts of penny pinchers! There appears to be some innovative research that will deliver on the spot testing at low cost: cents instead of dollars. This may be available within a year or so.
- Hydatids. The hydatid tapeworm of dogs appears to be widely spread throughout Australian dogs, dingoes and foxes. Hydatid cysts in kangaroos, rabbits, sheep, cattle and humans are at levels higher than most people realise. The message: treat all your dogs regularly for hydatid tapeworm and don't feed them offal. A scary bit: it appears that some parasites of mammals, birds, insects and fish are adapting to include humans in their food chain. Also, as global travel becomes ever easier and quicker, the more likely it is for some nasty parasite to arrive on our shores. Be vigilant."

## Summaries just for starters

Summaries of some papers are provided here for your convenience and interest. Be sure to read the full papers and make your own judgements. Make allowances for context (eg the particular worm species, environment, country etc) Papers are available from the usual sources or, failing that, from the authors. – Ed.

## Intensive rotation grazing reduces worms

**Alison Healey and others**

### Intensive rotational grazing reduces nematode faecal egg counts in sheep on the cicerone project

**AF Healey<sup>a</sup>, E. Hall<sup>b</sup>, CA Gaden<sup>c</sup>, JM Scott<sup>d</sup> and SW Walkden-Brown<sup>a</sup>** (2004). *Animal Production in Australia* **25**, 85-88.

<sup>a</sup> Animal Science, School of Rural Science and Agriculture, University of New England, Armidale, NSW 2351

<sup>b</sup> Betty Hall Pty Ltd, P.O. Box W45, Armidale, NSW 2530

<sup>c</sup> Cicerone Project Inc., P.O. Box 1593, Armidale, NSW 2350

<sup>d</sup> Centre for Sustainable Farming Systems, University of New England, NSW 2351

#### Summary

The Cicerone Project consists of 3 farmlets each with management systems contrasting in inputs (levels of fertilisers and pastures) and grazing management. Farmlet A has high input, high stocking rate, with flexible grazing using the Prograze principles. Farmlet B has moderate input, moderate stocking rate with the same grazing management as Farmlet A. Farmlet C has moderate inputs and aims at high stocking density using intensive rotational grazing. This paper presents the results of analysis of nematode faecal egg counts (FEC) taken from ewes, hoggets and lambs for flock monitoring purposes over the last 4 years. There were significant ( $P < 0.05$ ) interactions between the effects of farmlet and date of sampling for all classes of stock with effects of farmlet dependent on date of sampling. In the early part of the monitoring period, there were no consistent effects of farmlet on FEC, but as grazing and pasture

management began to take effect, FEC values for Farmlet C were consistently lower than for the other 2 farmlets. This is reflected in the FECs of lambs and hoggets in early 2003 where counts for Farmlets A and B were high, while Farmlet C FECs stayed very low (lambs: 2270, 1067, 85; hoggets: 670, 439, 115 eggs per gram, for Farmlets A, B and C, respectively). Farmlet A and B animals also had 2 more drenches than Farmlet C animals, yet Farmlet C sheep had consistently lower counts during 2003. The results suggest superior worm control on Farmlet C associated with high intensity, short duration grazing.

*Keywords:* worm burden, grazing management, intensive rotational grazing.

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ahealey@metz.une.edu.au

The tern that wormed??



## Parasites in lambs at slaughter

### Brown Besier and others

#### Parasites in sheep at slaughter – an unexpected burden on the industry?

**RB Besier, UM Ryan and CL Bath (2004). Proceedings of the Australian Sheep Veterinary Society 2004 – Canberra Conference, Volume 14 (S Williams, Ed.).**

#### Summary

A survey of sheep at an abattoir in Western Australia from September 2002 to February 2004 indicated high worm egg counts in prime lambs, with over 40% of lines exceeding 1000 eggs per gram, and higher counts than usually considered acceptable in many adult lines .....[snip] .. The production significance of the results requires investigation, as it appears that producers are

generally not aware of the potential for loss due to parasites in sheep sent for slaughter.

Further information:  
[bbesier@agric.wa.gov.au](mailto:bbesier@agric.wa.gov.au)

## Comparison of ivermectin and moxidectin use on risk of drench resistance on sheep properties in south eastern Australia

### David Rendell and others

**D Rendell, D Homer, T Rentsch and J Smith (2004). Proceedings of the Australian Sheep Veterinary Society 2004 – Canberra Conference, Volume 14 (S Williams, Ed.)**

#### Summary

Macrocyclic lactone (ML) drench histories of 125 clients of D Rendell & Associates in south eastern Australia that had conducted a faecal egg count reduction trial between 2001 and 2004 were analysed. This analysis indicated use of moxidectin in comparison to ivermectin significantly increased the risk of ML resistance.

Further information:  
D Rendell, 170 Mt Baimbridge Rd, Hamilton Victoria 3300.

## Resistance to benzimidazole and macrocyclic lactone anthelmintics in cattle nematodes in Argentina

Anziani OS, Suarez V, Guglielmo AA, Warnke O, Grande H and Coles GC (2004).

*Veterinary Parasitology*. 122(4):303-306, 2004 Aug 6.

#### Abstract

In April 2003, persistent scouring and ill-thrift that was reported in calves from an intensive beef rearing operation in central Argentina despite treatments with benzimidazole and ivermectin. In order to conduct a controlled faecal egg count reduction test on this herd, 40 calves 5-8-months-old were selected on the basis that they had a nematode eggs per gram (epg) of faeces count greater than 150. Animals were divided into four groups (1-4) of 10 calves. Calves of groups 1-3 were treated, respectively, with subcutaneous injection of ivermectin (200 mcg/kg), ricobendazole (4 mg/kg) and levamisole (7.5 mg/kg), while calves of group 4 remained as untreated controls. The egg count reductions carried out 10 days later were lower than 15% in calves treated with ivermectin and ricobendazole, but 100% in animals receiving levamisole. Pooled post-treatment faecal cultures showed larval percentages of 92 and 95 for *Haemonchus* and 8 and 5 for *Cooperia* in the faeces of calves treated with ivermectin and ricobendazole, respectively. This is the first reported case of *Haemonchus* parasitising cattle showing simultaneous resistance to avermectins and benzimidazole type anthelmintics.

The information contained in this publication is based on knowledge and understanding at the time of writing (October 2004). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

Recognising that some of the information in this document is provided by third parties, the State of New South Wales, the author and the publisher take no responsibility for the accuracy, currency, reliability and correctness of any information included in the document provided by third parties.

## A short history of the World Wide Web

- 1945: In The Atlantic Monthly, director of the US Office of Scientific Research and Development, Vannevar Bush, describes the Memex, a hypothetical device for linking microfiche documents.
- 1968: The Stanford Research Institute's Douglas Engelbart demonstrates an "oNLine System" (NLS) with features that include hypertext browsing, editing, and email. To enable it, he invents the mouse.
- 1980: Tim Berners-Lee, a consultant with the European Centre for Physics Research CERN, writes software that allows electronic documents to link to each other.
- 1990: Berners-Lee dubs his global hypertext program "WorldWideWeb". The number of websites in existence: one.

- 1993: Marc Andreessen releases the Mosaic web browser, which becomes the basis for Netscape.
- 1994: The World Wide Web Consortium (W3C) is founded. The number of websites reaches 10,000. Berners-Lee presents the idea of the semantic web.
- 1998: W3C releases the eXtensible Markup Language (XML) specification. It allows webpage text to be tagged with descriptive labels - critical for the semantic web.
- 2000: By year's end, 25,675,581 websites have been identified.
- 2004: Standards that allow computers to exchange semantic web information are finalised. Berners-Lee is knighted.

(From, 'Connecting the dots'

by Mark Frauenfelder October 19, 2004

<http://smh.com.au/articles/2004/10/18/1097951617438.html> )

## A moment in history - last meeting of the Flock Health sub-program, NSW Agriculture (EMAI 4 August 2004)

L-R: Stephen Love (State Worm Control Coordinator), Paul Young (Technical Officer), Paul Forbes and Lloyd Kingham (OJD Facilitators), Gary Levot (Principal Research Scientist), Roger Carrus (Technical Officer), Gareth Hutchinson (Research Parasitologist), Kim Dawson (Technical Officer), Irene Bate (Technical Officer), John Seaman (Program Leader-Flock Health), Cathie Fitzgibbon (Technical Officer), Ian Evans (State Ectoparasite Coordinator, Livestock Officer (Sheep and Wool) Deniliquin). *Photo: Marietta Foo (Vet V Student)/SL's Olympus C-350*

