**Monaro Farming Systems**
**Worm Club Discussion**
**9th March 2016**

- Barbers pole worms on about half sheep properties
  - warmth and moisture needed for eggs to hatch

  (eggs in faeces hatch in as little as 5 days; can develop to egg laying adults in a sheep in another 17 days)
  - worm larvae die if too hot and dry, but beware green/sheltered areas in paddocks
  - worm larvae survive frosts and last 6 months in winter (paddocks causing trouble now will be dangerous for lambing)

- Resistance is common in Barber's pole worms:
  - Abamectin on its own works on about 20% of properties
  - Levamisole on its own works on about 75% of properties

## % properties with sheep drench resistance

source: Rolls N, 2014

| Active ingredient | Brown stomach | Barber's pole | Any worm |
|---|---|---|---|
| BZ | 88 | 75 | 96 |
| Levamisole | 82 | 30 | 96 |
| Ivermectin | 76 | 74 | 87 |
| Abamectin | 49 | 83 | 77 |
| Moxidectin | 38 | 52 | 54 |
| BZ/Lev | 79 | 19 | 81 |
| BZ/Lev/Aba | 22 | 14 | 28 |

www.lls.nsw.gov.au/southeast

## The drench resistance dilemma

Worm control (=productivity)
v's
Keeping drenches effective

- "Not drenching avoids resistance"
- "The best control of worms encourages the most resistance"

- If drench is 65% effective, productivity reduced 10% (& efficacy crashed after use).
- If drench is 85% effective, productivity down 5%.

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## Don't buy resistance

Sheep

- Quarantine drench on arrival:
  - Now recommend FOUR unrelated actives, one of them Zolvix® or Startect®
  - Hold in yards/small paddock for 4 days! (caution)
  - Then release onto wormy paddock



## Avoid home-bred drench resistance

- Right drench
  - "Technique"
  - Narrow or broad spectrum
  - Use combinations of actives
  - Drench resistance test (2-3 yrs)
  - Drench check test
- Right time
  - Strategic (treat sheep to treat the pasture)
  - Tactical (based WEC)
- Right sheep

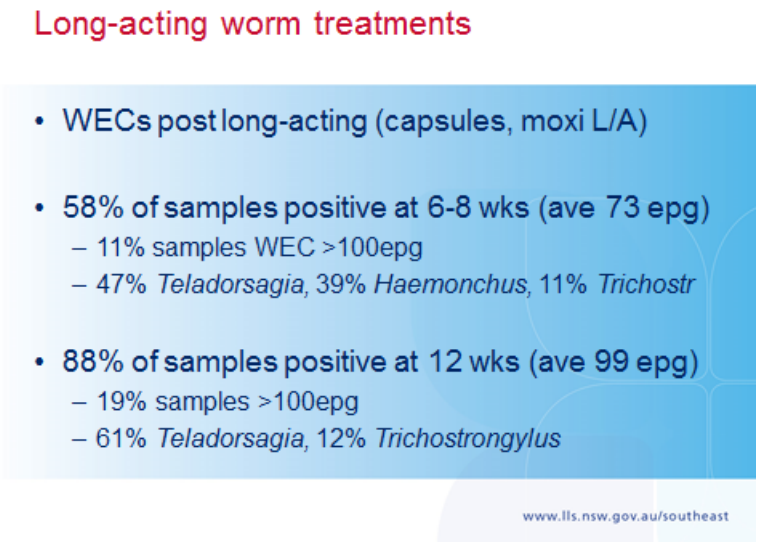


## Resistance in sheep worms

- Resistance test
  - young sheep, prefer not previously drenched
  - all in group have >200epg
  - group average >500epg
  - repeat worm egg count 10-14 days
  - randomly allocate to groups
  - couple of spare animals per group (if need 10 samples, have 12 to 15 per group)
  - can test single actives and calculate combination result

Drench resistance testing was discussed. There may be difficulty getting enough worms in un-drenched weaners for the test. Testing in summer/autumn may be predominantly barber's pole worms, which would limit the usefulness of the test in predicting which drenches work on your place on other worms. Chris Haylock suggests doing the drench resistance test on hoggets in winter, if a test shows they have enough worms. MFS is available to assist members to conduct a valid drench resistance test.

An alternative to a full drench resistance test is to follow up a pre-drench worm egg count with a worm egg count on samples collected from the same mob 10 to 14 days post-drench. Testing for worm type is recommended.



## Long-acting worm treatments

- Use pre-lambing will increase existing resistance
  - "lactation" allows massive increase in egg output of any resistant worms
  - Not (just) hormonal – due to energy/protein demands not being met, hence worse in twinners
  - L/A will also appear in milk at low dose rate



## Long-acting worm treatments

- Use only when high worm challenge cannot be met by other means
- Give unrelated primer
- Use 'exit' drench 2 weeks after protection ends
- Monitor with worm egg counts 30, 60, 90 days



## Integrated worm management

- Drenching based on monitoring (pre- & post-)
- Grazing management
  - manage worm larvae on pasture for susceptible mobs
    - Time taken to reduce worm burden on a paddock
    - Rotational grazing
    - Alternate grazing
    - 'Smart grazing'
- Nutrition
  - Protein, energy for development of immunity
- Breed for worm resistance ('WEC' ASBV)

## Liver fluke

- 44% eastern NSW properties +ve liver fluke
- Egg test on dung between 7 to 70% accurate (about 30% in cattle)
- Better to test sheep on the property than cattle, to see if fluke present (sheep must have been in "flukey" paddocks)
- Blood test more accurate, and earlier (sheep & cattle); stays +ve for 2-3months after treatment
- New dung test more available soon (?$120 per mob, CSU Wagga); will better test for resistance.



## Liver fluke

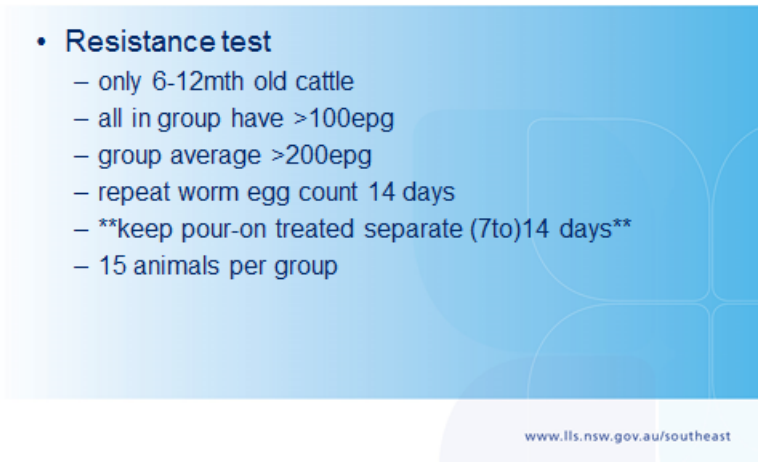
- Resistance is thought to be increasing, but no good studies
- Resistance to
  - triclabendazole (eg Fasinex) (sheep and cattle)
  - closantel (sheep)



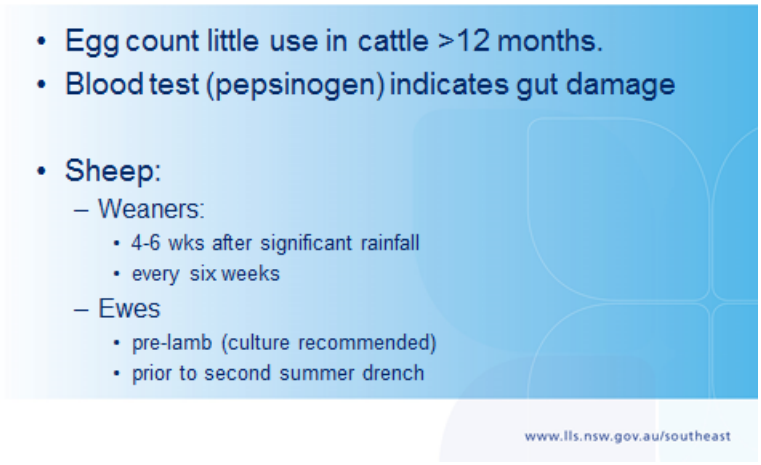
## Resistance in cattle worms

- "Oral treatment less variable than injection or pour-on"
  - choose route on: facilities, labour, target pest(s)
- Aust reports:
  - 2/3 herds resistance to at least one active (39 farms); pour-on lower efficacy
  - 1/3 dairy herds resistant MLs (inj); 100% BZ; 44% Lev
  - ¾ herds resistance to at least one active
    - eg: ML: brown stom 35%, barb pole 56%, small intest 72%

## Resistance in cattle worms




## Monitoring worms




Monitoring for worms using worm egg counts becomes more valuable the more tests are done. How come? Initially producers become despondent about the value of monitoring, as most times you get a test result that tells you the mob needs drenching. You have to pay for the cost of the test and the cost of the drench, so why test?

Worm control involves so much more than drenching. The value of monitoring comes from using the information to look back ("Does this result reflect what I expected to happen from what I did with the sheep / the previous drench / the paddock in the past few months?") and to look forward ("What will this result mean for other stock that will have to graze this paddock?", "What can I do differently that will alter the situation at this time next year?") as well as deciding whether the mob needs a drench now.

There are proven examples of producers who monitor routinely and frequently, and who use this information to help track livestock performance, not just worms. In time, they are able to reduce drench usage while increasing production.

## Worm and fluke information

- Sheep
  - wormboss.com.au
- Cattle
  - mla.com.au (The Cattle Parasite Atlas)