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# Worm management for sheep and cattle under irrigation

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# Agenda

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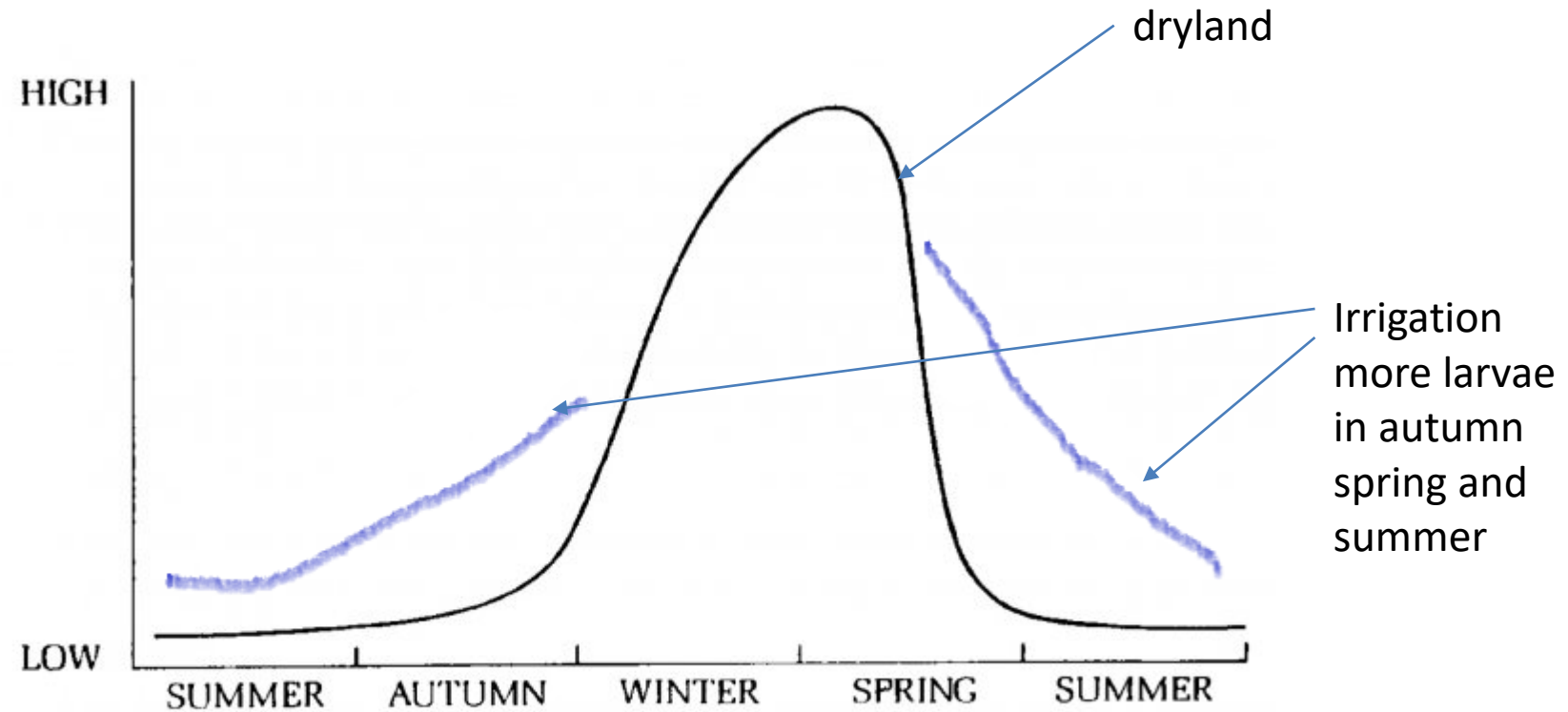
- What are the main risk factors and challenges with worm control in irrigation systems?
- Strategies to manage the impact of worms in sheep and cattle in irrigation
- Managing drench resistance and Barber's Pole

# Risk factors and challenges with worm control on irrigation

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- Biggest risk is with perennial pasture grazing permanently with sheep
- Ideal environment for the establishment and survival of worm larvae for both sheep and cattle
  - Winter peak of larval contamination but more survival in warmer periods due to local micro-climate
- Problems amplified where irrigation is used for lambing ewes
- Unknown drench resistance status exacerbates issues further

# Worm larvae on pasture



Source: The epidemiology and control of gastrointestinal parasites of sheep in Australia. Edited by A.D. Donald, W.H Southcott and J.K. Dineen, Division of Animal Health, CSIRO 1978.

## Farm production systems that help reduce impact of worms on irrigation

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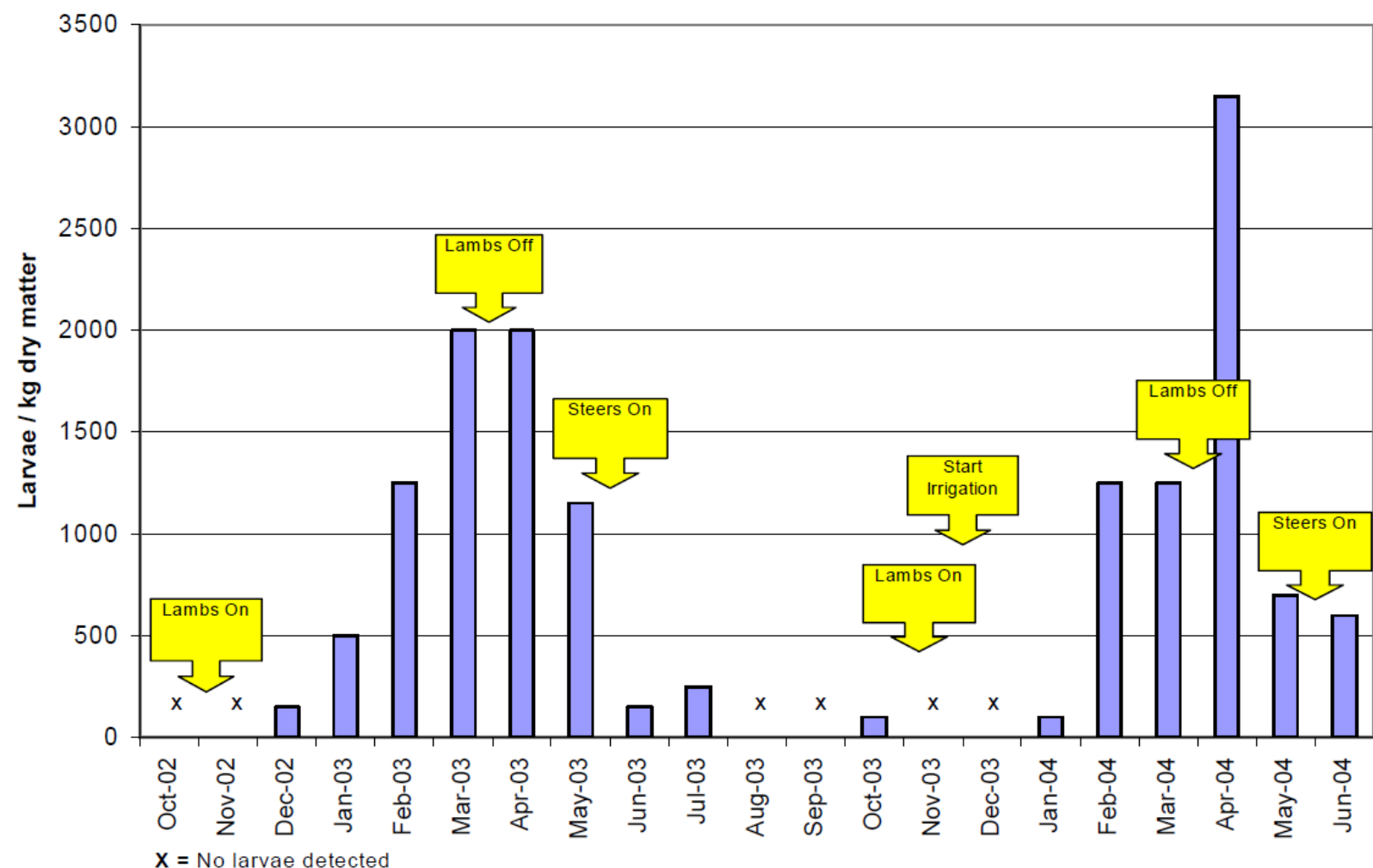
- High quality fodder crops such as brassicas, chicory shorter term so less chance of worm build-up
  - Good nutrition also counters impact of worms
- Lucerne and clover often don't support high stocking rates in winter so less contamination – but watch!
  - Less grazing within 5cm of ground so less ingestion of worm larvae
- Spring fodder (hay, silage), grass seed little grazing so less contamination and build up of worm larvae

# A free kick in agriculture swapping sheep and cattle

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- Minimal sharing of sheep and cattle worm species
  - Trich axei (especially lambing ewes and un-drenched young cattle)
  - Barber's Pole some survival in young cattle
- Production benefits of sheep/cattle swap
  - Up to 10% improvement in production for both species
- Current profitability of cattle makes the system profitable
- Ideal 6 month swap but paddock relatively lower risk after 2-3 months cattle grazing

# Pasture larval contamination reversed and lowered by grazing cattle on irrigation during winter and spring



# What should you do where break crops and spelling are not an option?

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- Grazing management swap sheep and cattle
- Drench sheep and cattle onto irrigation
  - Important for both
- Monitor more intensively than dryland
  - Cattle WEC less reliable for important worm *Ostertagia*
  - Use lower cut-off to drench but consult with your sheep advisor
- Avoid lambing on irrigation at all cost
- Long acting products
  - I prefer to avoid
  - Watch ESI's
  - Use priming doses and tail cutters to minimise risk of drench resistance



# Know your drench resistance status for both sheep and cattle

Drench Group	Control	IVERMECTIN	ABAMECTIN	COMBI	Combi & Rametin	Combi & Abamectin	CYDECTIN
	Orange head	Blue head	Red rump	white & clear Orange rump	Purple rump	Green rump	Blue rump
1	390	45	0	165	150	15	225
2	720	210	0	90	30	0	45
3	810	75	0	225	90	0	135
4	465	105	0	30	0	15	180
5	915	360	0	555	15	0	30
6	660	210	45	120	15	0	0
7	420	0	0	390	15	0	30
8	195	120	30	135	30	0	0
9	855	165	0	135	45	0	30
10	450	45	0	90	15	0	15
Average FEC	588	134	8	194	41	3	69
% Reduction		77%	99%	67%	93%	99%	88%
Upper 95% CL		87%	100%	82%	97%	100%	95%
Lower 95% CL		59%	95%	39%	85%	98%	73%
Drench status		Resistant	Susceptible	Resistant	Resistant	Susceptible	Resistant

# Manage drench resistance

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- Dose rate to heaviest and minimise drench frequency
- Prefer to use combination products where possible
  - Rotate effective groups?
- Quarantine drenches – Startect™ minimum or 4 combinations
- Cattle should use combination too
- Oral drench higher efficacy than pour-on or oral in cattle (Leathwick et al)
  - Oral - 91% reduction
  - Injectable - 55% reduction
  - Pour-on - 51% reduction in efficacy

# Barber's Pole management

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- Where has it come from?
  - Always present but at low levels and irrigation provides an ideal opportunity?
  - Introduction with trade cattle and drench with single ML mectin drench
  - Failure to use effective quarantine drench with sheep
- What to do?
  - Monitor, monitor, monitor, (1 female BP worm 10,000 eggs/day, trich 200 eggs/day)
  - Larval culture to differential worm species
  - Grazing management more important to prepare low risk paddocks
    - Also consider smart grazing
  - Use strategic specific narrow spectrum drenches
    - Closantel (35 days activity) every 2-3 years at start of season
    - other drench OP plevault, levamisole specific for barber's pole
    - Must undertake drench resistance trial to specifically determine drench efficacy of Barber's Pole

# Top three take home messages

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1. Irrigation provides an ideal environment for survival and establishment of worms in both cattle and sheep
2. Grazing management is the key to managing worm populations on pasture rather than just relying on drenches
3. Barber's Pole is an important issue that can be managed and if not present quarantine drenching critical to keep it out

# Tools, resources & training

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- [www.wormboss.com.au](http://www.wormboss.com.au)
- MLA Cattle parasite atlas:  
<https://www.mla.com.au/research-and-development/animal-health-welfare-and-biosecurity/parasites/cattle-parasite-atlas/>



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