Drench resistance and new modes of action for controlling parasites

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Zoetis

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mla MEAT & LIVESTOCK AUSTRALIA

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Australasia

Zoetis at a Glance

70+

Years of experience

We provide:

Medicines, Vaccines, Diagnostics, Biodevices, Genetic tests & Precision animal health

100+ Countries where Zoetis products are sold	**29** Manufacturing sites	**7** Major product categories
		8 Core animal species
1,600 Approximate R&D colleagues	**4,100** Approximate field force members	**14,100** Approximate colleagues worldwide

Kristin Peck
Chief Executive Officer

Note: Facts and figures shown are as of Dec. 31, 2023

[1] *Excludes revenue associated with Client Supply Services and Human Health, which represented 1% of total 2023 revenue.*

Increased AUSTRALIAN manufacturing & research capabilities

- Recent purchase of both Jurox and the Parkville CSL Manufacturing site

Key areas of investment for livestock

Genetics

Focus on prevention with vaccines

Mitigating greenhouse gas emissions

Alternatives to antibiotics

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COST OF PARASITES & CATTLE ANTHELMINTIC RESISTANCE - Update

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WORM LIFE CYCLE

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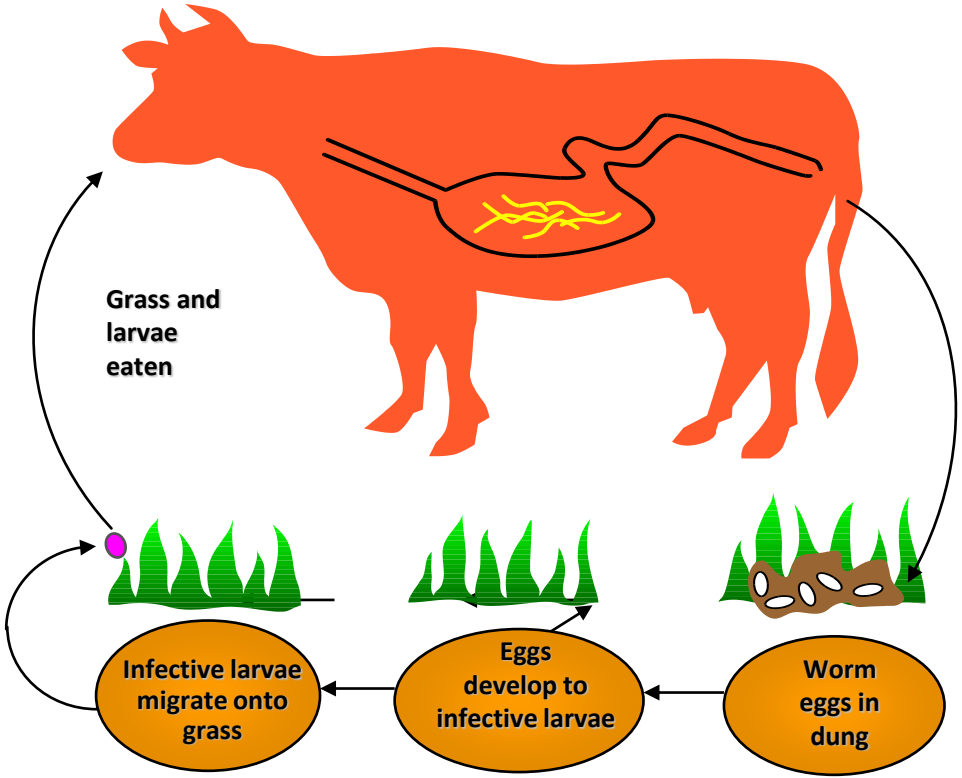

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WHAT ARE SIGNS OF PARASITES

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- **None (subclinical) or nothing obvious**
- Weight loss, ill thrift, loss of appetite
- Scours, blood in dung
- Bottle jaw, poor coat
- Poor productivity
- Poor fertility
- Death

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Which bay was grazed by wormy mob of cattle?

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REDUCED FEED INTAKE

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TREATED

WITH AN EFFECTIVE DRENCH

(Cattle eat more)

NOT TREATED

WITH A DRENCH

(Cattle eat less)

Forbes, A. (2008) Grazing behaviour, inappetence and production losses in cattle with sub-clinical parasitic gastroenteritis. Universiteit Ghent.

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DRENCH RESISTANCE

INEFFECTIVE DRENCH

WORMS ARE STILL HAVING AN IMPACT ON YOUR FARM

REDUCED WEIGHT GAIN

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WORM EGG COUNT (WEC) CATEGORIES FOR CATTLE

Risk	Beef Cattle (epg)*	Decreased ADG (%)*
Low	25-50	13-17%
Medium	50-150	17-22%
High	150-500	22-27%
Very High	>500	27% +

21. Shepherd RW *et al* A systematic review and meta-analysis of impact of strongyle parasitism on growth rates in young cattle *Vet Parasitol* 309 (2022) 109760

HOW DO I TEST FOR RESISTANCE?

DRENCH RESISTANCE/EFFICACY TESTING

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The 3 main diagnostic methods for diagnosing drench efficacy and resistance on farm are;

1. Post Drench Test only
2. DrenchCheck (Before and After Test)
3. DrenchTest - Faecal Egg Count Reduction Test (FECRT)

NO MATTER WHAT TEST YOU DO SPEAK WITH THE LABORATORY PRIOR TO STARTING TO ENSURE THE CORRECT SAMPLES ARE TAKEN AND YOU HAVE THE APPROPRIATE PAPERWORK

wormboss

POST DRENCH TEST ONLY (WEC)

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- **A post-drench faecal worm egg count (WEC)** is conducted **14 days after drenching** to count the number of worm eggs remaining in the faeces post drench. Faeces can be collected from the ground
- If cattle are treated with an effective drench, very few eggs are expected to be present in the faeces after treatment.
- Timing is vital

POSITIVES

- Very simple and easy

NEGATIVES

- Does not provide efficacy data as pre drenching WEC not conducted. Only provides an indication of whether a drench may have worked

DRENCH CHECK - 'BEFORE AND AFTER' WEC (+/- LARVAL CULTURE)

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- **Faeces are collected for WECs twice, before and after treatment!**
- The first test measures worm egg numbers 'before' (or on the day of) drenching and the other test measures worm egg numbers 14 days 'after' drenching.
- The 'before and after' WEC scores are then compared to see how well the drench works at reducing worm numbers i.e., efficacy can be calculated
- The faeces for testing can be collected in the paddock, animals do not need to be yarded.

POSITIVES

- Provides efficacy information on the drench used
- It's simple and easy
- Cheaper than a FECRT

NEGATIVES

- Only provides information on one drench

DRENCH TEST – FAECAL EGG COUNT REDUCTION TEST (FECRT)

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- **A DrenchTest allows the efficacy of <u>several different drenches</u> to be evaluated at the same time.**
- Animals are allocated into different groups and each group is treated with a different product.
- **Faeces are collected on the day of (or just before) drenching and 14 days later.**
- Faeces are then sent to the lab for WEC and larval culture. Efficacy can then be calculated for each worm species present

POSITIVES

- Provides efficacy information on more than one active ingredient therefore provides farmer with detailed information for assisting with effective drench selection in the future

NEGATIVES

- Requires additional time, expertise and planning
- More expensive
- Requires a greater number of animals

ANTHLEMINTIC RESISTANCE IN AUSTRALIA

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Representative locations where varying levels of resistance have been reported

KEY TRENDS IN AUSTRALIA*

1. ***Cooperia*** – resistant to all MLs. Susceptible to Levamisole

2. ***Ostertagia*** – some resistance to Levamisole, MLs, BZs.

   Inhibited (immature) *Ostertagia* - better efficacy with injectable MLs.

3. ***Haemonchus*** – some resistance to MLs.Susceptible to Levamisole.

* Zoetis data on file. Contact Zoetis if further information is required.

RESULTS OF 21 FECRT CONDUCTED IN CATTLE FROM ALL AROUND AUSTRALIA

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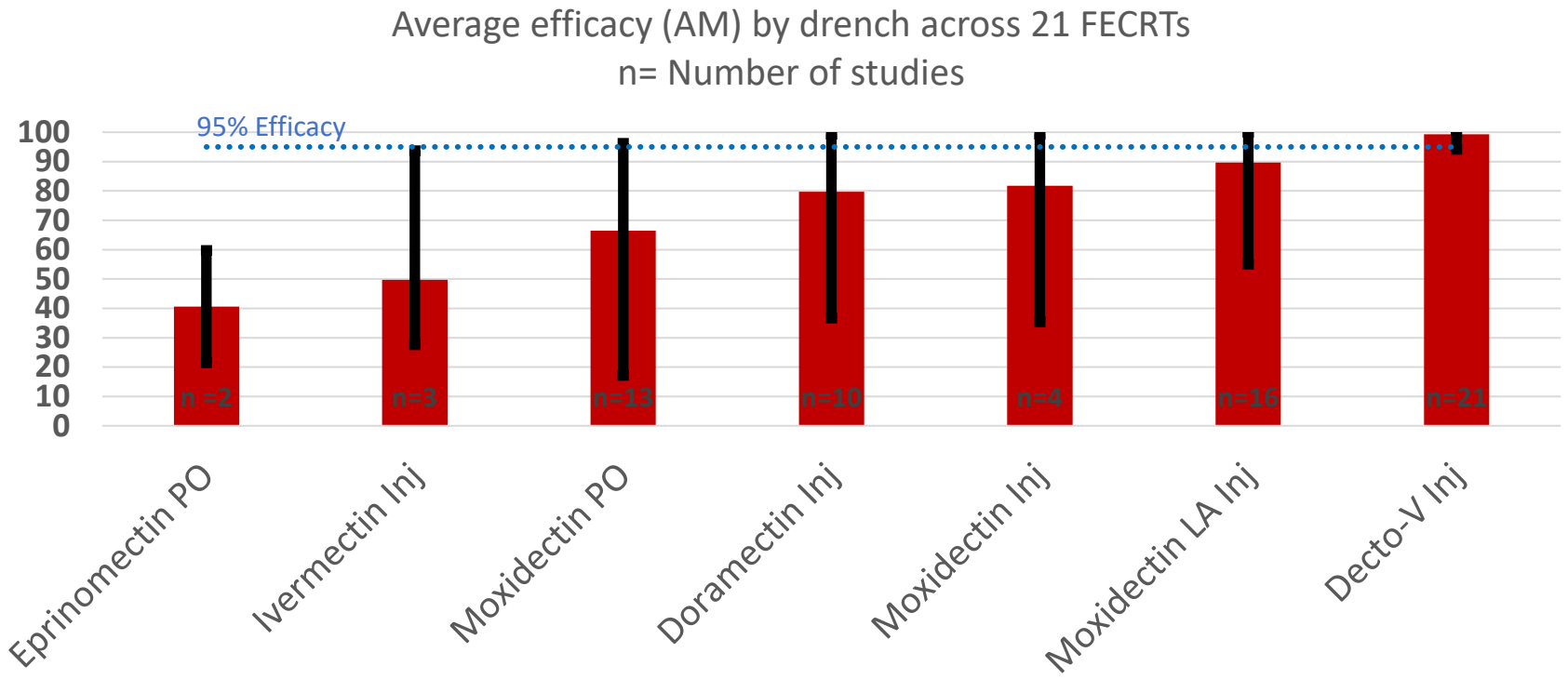

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What testing have you performed on your own farm?

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What cattle drench are you using?

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DRENCHCHECK RESULTS TO JUNE 2024

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	Ivermectin PO	Moxidectin Inj	Doramectin Inj	Moxidectin LA Inj	Dectomax V
Average of Efficacy	66	66.2	70.1	76.8	99.9
Tests (n)	5	3	12	6	14

NEW

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DECTOMAX + LEVAMISOLE

THE PRODUCT

For the treatment and control of **adult and L4 larval (immature) stages of gastrointestinal worms, including** both macrocyclic lactone and levamisole **resistant strains**

- For the treatment and control of **Cattle tick – 30 days**
- For the treatment and control of **Sucking lice – 56 days**
- **Safe for use in calves from 3 months of age and at all stages of pregnancy**

ADDITIONAL PRODUCT INFORMATION

DECTOMAX®
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DOSING AND ADMINISTRATION

- 1 mL/25 kg of bodyweight by subcutaneous injection.

WITHHOLD PERIODS

- MEAT WHP & ESI: 35 DAYS.
- MILK WHP: Do not use in lactating cows or within 60 days of calving where milk may be used or processed for human consumption
- RETREATMENT INTERVAL: Do not re-treat animals for 28 days after last treatment.

NOW REGISTERED FOR SHEEP

NEW

- **DECTOMAX V IS THE ONLY INJECTABLE DUAL ACTIVE DRENCH IN AUSTRALIA**
- The use of injectable drenches is proven to be an effective means of parasite control in sheep
- DECTOMAX V will be a good drench choice for:
  - farms successfully using single active drenches
  - farms in low rainfall areas
  - farms that understand their resistance status
- DECTOMAX V is safe for use in lambs from 15kg

- DECTOMAX V has efficacy against susceptible strains of the main three production limiting parasites of sheep
- DECTOMAX V the correct applicator is important, and producers should take care on dosing

TAKE-HOME MESSAGES

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- Cattle anthelmintic resistance is NO LONGER an emerging issue – IT IS HERE
- Resistant worms are found on almost all cattle properties
- Post Drench or ‘Before and After’ WECs should become more routine to assess the resistance profile on farms
- **COMBINATION PRODUCTS SUCH AS DECTOMAX V ARE NEEDED TO BOTH;**
  - **TREAT RESISTANT WORMS, AND**
  - **SLOW THE ONSET OF RESISTANCE**


PECTOMAX