Effect of Eprinomectin treatment at calving on milk production in confined and semi-confined dairy herds

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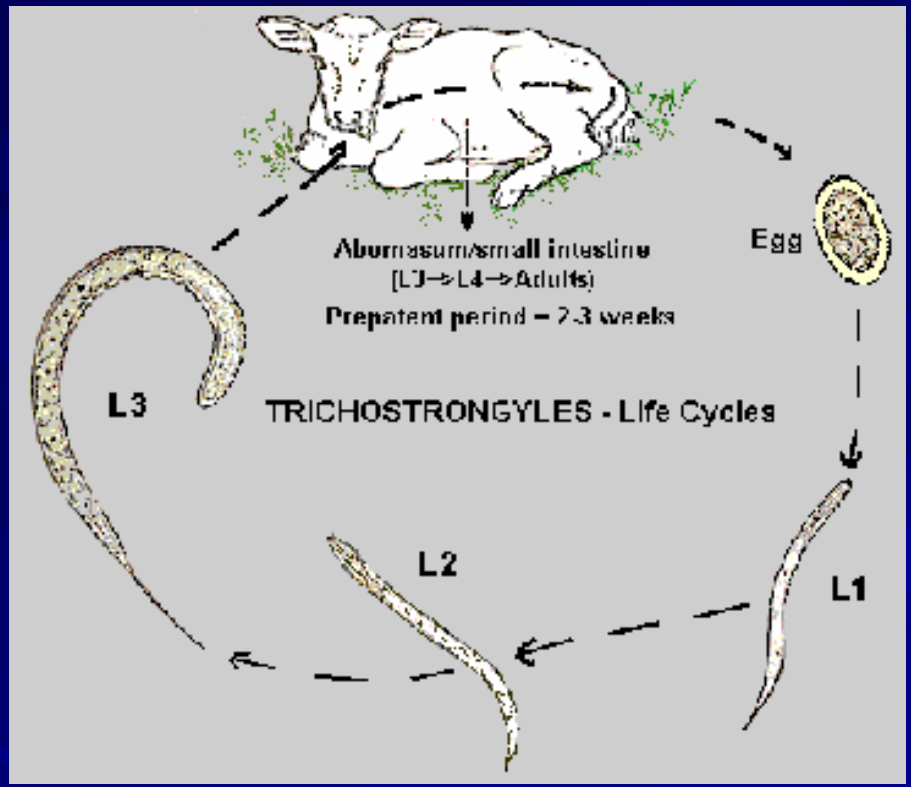
CANADA

Introduction

- Summer housing
  - indoors
  - exercise yard
  - paddock
  - pasture

GIT Nematodes

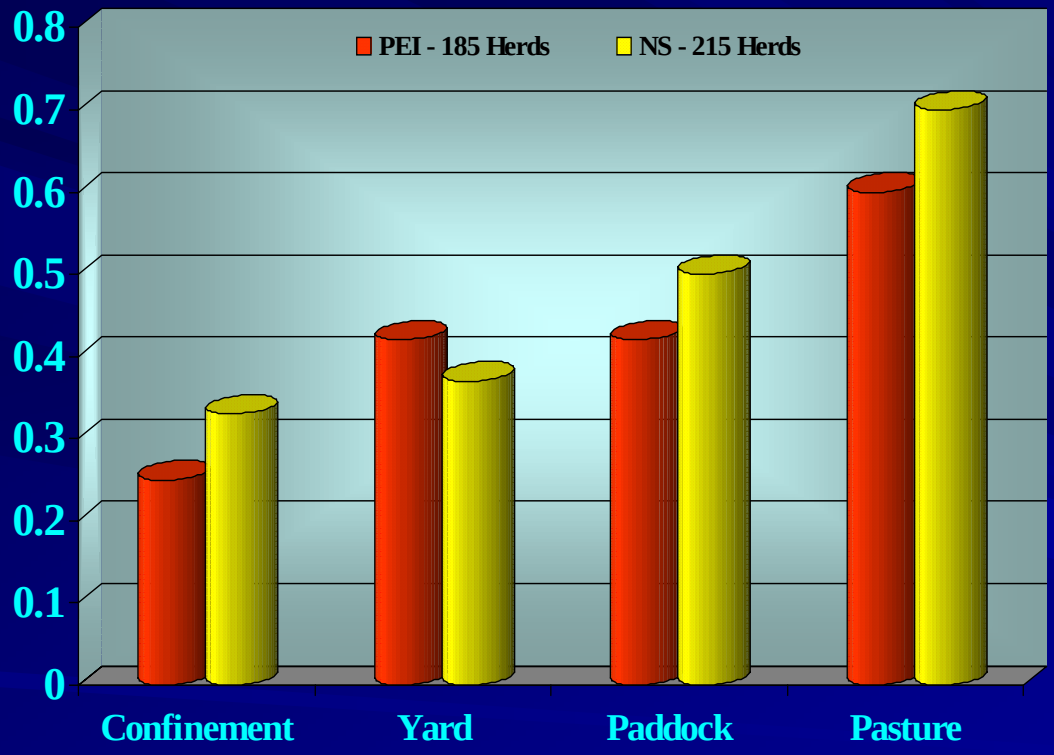


- GIT nematodes
  - *Ostertagia ostertagi*
  - *Cooperia spp.*
- Subclinical parasitism
  - reduced milk prod.
- Parasite burden indicators
  - Fecal egg counts
  - ELISA (Ostertagia Ag)

Eprinomectin

- EPRINEX®
- Macrocyclic lactone dewormer
- Properties
  - no withdrawal period
  - ease of application (backline) “pour-on”
  - wide safety margin
  - inclement weather
  - persistence

Previous research



- Clinical trial
  - pastured herds
    (Nodvedt et al, 2002)
  - 0.94kg/day milk increase
- Bulk milk tank ODR distr.
  - PEI
    (Sanchez and Dohoo, 2002)
  - Nova Scotia
    (Guitian et al, 2000)

Objectives

- To evaluate the milk production response to treatment at calving with Eprinex in cows with limited pasture exposure.
- Determine if ELISA or FEC can identify herds where treatment has a positive effect on milk production.

Inclusion Criteria

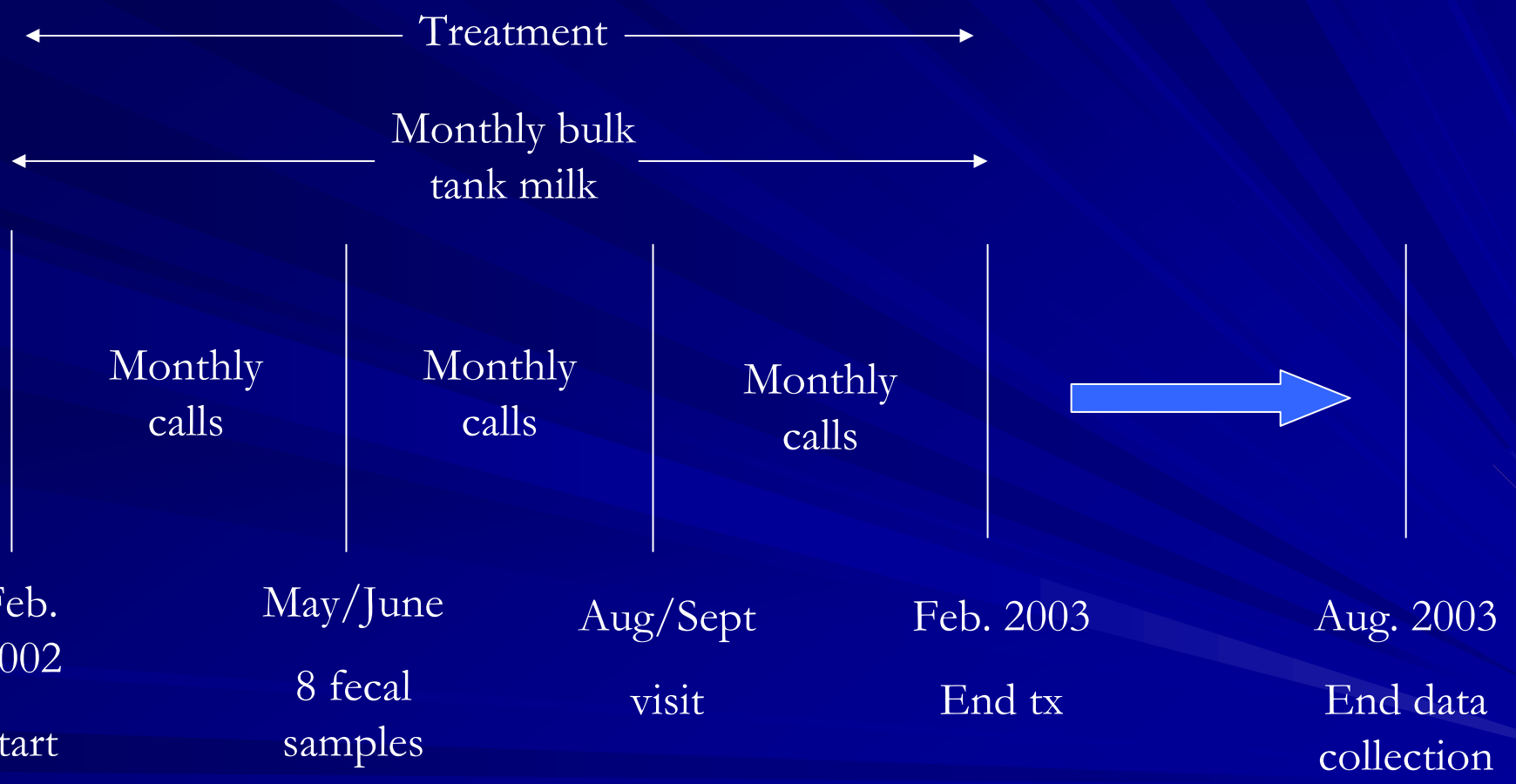
- Inclusion criteria
  - Holstein
  - **totally confined herds (lactating AND dry cows)**
  - **semi-confined herds (lactating AND/OR dry cows outside)**
    - **feed quantity and quality not changed**
  - Dairy Herd Improvement (DHI)

- Exclusion
  - cows treated in summer 2001

Herd Selection

- Study sites (Multi-site trial)
  - Prince Edward Island (5 herds)
  - Nova Scotia (9 herds)
  - Ontario (16 herds)
  - Quebec (12 herds)
  - Saskatchewan (11 herds)
  - Minnesota, USA (12 herds)
- Convenient herd selection
  - proximity to vet school/practice

Study period



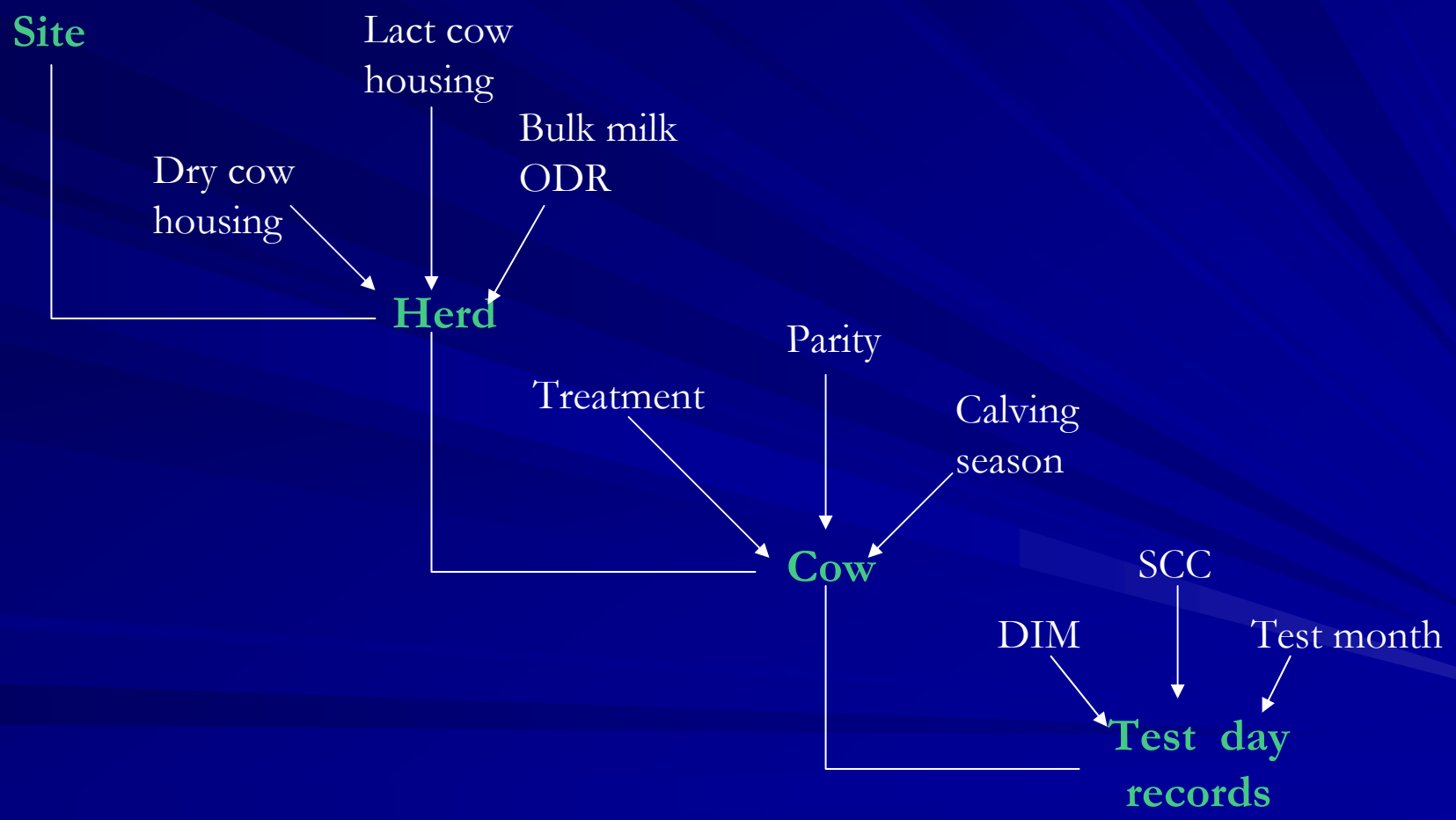
Study attributes

- Random allocation of treatment
- Placebo blinded
- Data from
  - farm records e.g. treatment date, bottle no.
  - DHI
- 6 months follow-up

Parasite burden

		FEC/5 grams		Bulk Milk ODR	
		Mean	Range	Mean	IQ Range
Housing					
	Confined	0.41	0 – 29	0.38	0.28-0.46
	Semi-conf	5.34	0 – 134	0.44	0.32-0.55
Season					
	Winter			0.4	0.3-0.49
	Spring			0.38	0.25-0.45
	Summer			0.46	0.34-0.56
	Fall			0.42	0.32-0.49

Data structure



Statistical analysis

- Analysis
  - Stata ver.8 for descriptive statistics
  - 21 days before and 7 days after calving
  - records < or = 200 DIM
- Hierarchical model
  - PROC MIXED command in SAS8.2
  - arma (1,1) correlation structure
  - herd random effects
  - 64 herds, 4789 cows, 23956 records

Statistical analysis

- Dichotomization of ODR and FEC (proportion ≥ 1) using 0.5 cut-off point.
- 2 models run to assess predictive ability:
  - ODR (high/low) by treatment interaction
  - FEC (high/low) by treatment interaction

Hierarchical model results

- Overall, no significant treatment effect.
- Treatment by ODR interaction very marginally significant (p=0.15)
  - Higher Tx effect in high ODR than in low ODR herds.
- Treatment by FEC interaction not significant (p=0.37)

Conclusions

- Overall, no treatment effect in confined and semi-confined herds.
- Indication that ELISA ODR is better able to identify herds that benefit from anthelmintic treatment than Fecal Egg Counts.

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Peri-urban remote regional surveillance for biosecurity for the pig industry in eastern Australia

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AUSTRALIAN BIOSECURITY CRC

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Introduction

- UK Foot and Mouth outbreak (2001)
  - Swill feeding
- Pig trading patterns study in the Sydney Basin
  - Gaps in identifying vendors and purchasers
  - Swill feeding
- Risk of exotic disease introduction
- No requirement to ID pigs <30 kg
  - Traceback difficult
- Question:
  - Do these peri-urban “back-yarders” pose a threat in terms of exotic disease introduction into Australia.

Objectives

- Locating peri-urban producers.
- Tracking peri-urban pig movements.
- Contact between peri-urban and commercial farms.
- On-farm disease surveillance.
- Off-farm disease surveillance.
- Improved extension to prevent illegal swill feeding.

Methods

- Evaluate regulations on farm location and pig branding and movement.
- Collection of data from relevant sources:
  - Saleyards
  - Abbatoirs
  - Feed suppliers
  - Transporters
- Producer focus groups
- Pig ID trial (ear tags, body and ear tattoos, RFID)
  - Durability, readability, cost

Progress

- Regulations – almost complete
- Data collection from saleyards and abbatoirs – in progress
- Producer focus group meetings - 1 meeting held
- Pig ID trial – in progress

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