



# EPIDEMIOLOGY OF GASTROINTESTINAL PARASITES IN ORGANIC FLOCKS IN CANADA

## First Year - Preliminary Results

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AMERICA E. MEDEROS  
PhD STUDENT, OVC, UoG

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# OBJECTIVES

- **To study the epidemiology of gastrointestinal nematodes (GIN) in organic flocks and to determine whether parasite control can be accomplished without or with minimal use of chemical drugs**
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# BACKGROUND

- ✓ **There are few published reports about the epidemiology of GIN in Canada and none on organic livestock**
- ✓ **GIN has been reported as a main constraint in organic sheep production systems around the world**
- ✓ **Need of effective and sustainable GIN control strategies in sheep production systems**
- ✓ **Need to know the prevalence and epidemiological patterns to control GIN effectively**

# MATERIALS and METHODS

- **3 year project: May 2006- March 2009**
- **Farms: 23 (Ontario), 9 (Quebec) (2006-2007)**
- **Monthly visits (Apr-Oct) + 2 winter visits**
- **Questionnaire**
- **Animals: 10 ewes and 10 lambs**  
**Samplings: feces, pastures (monthly)**



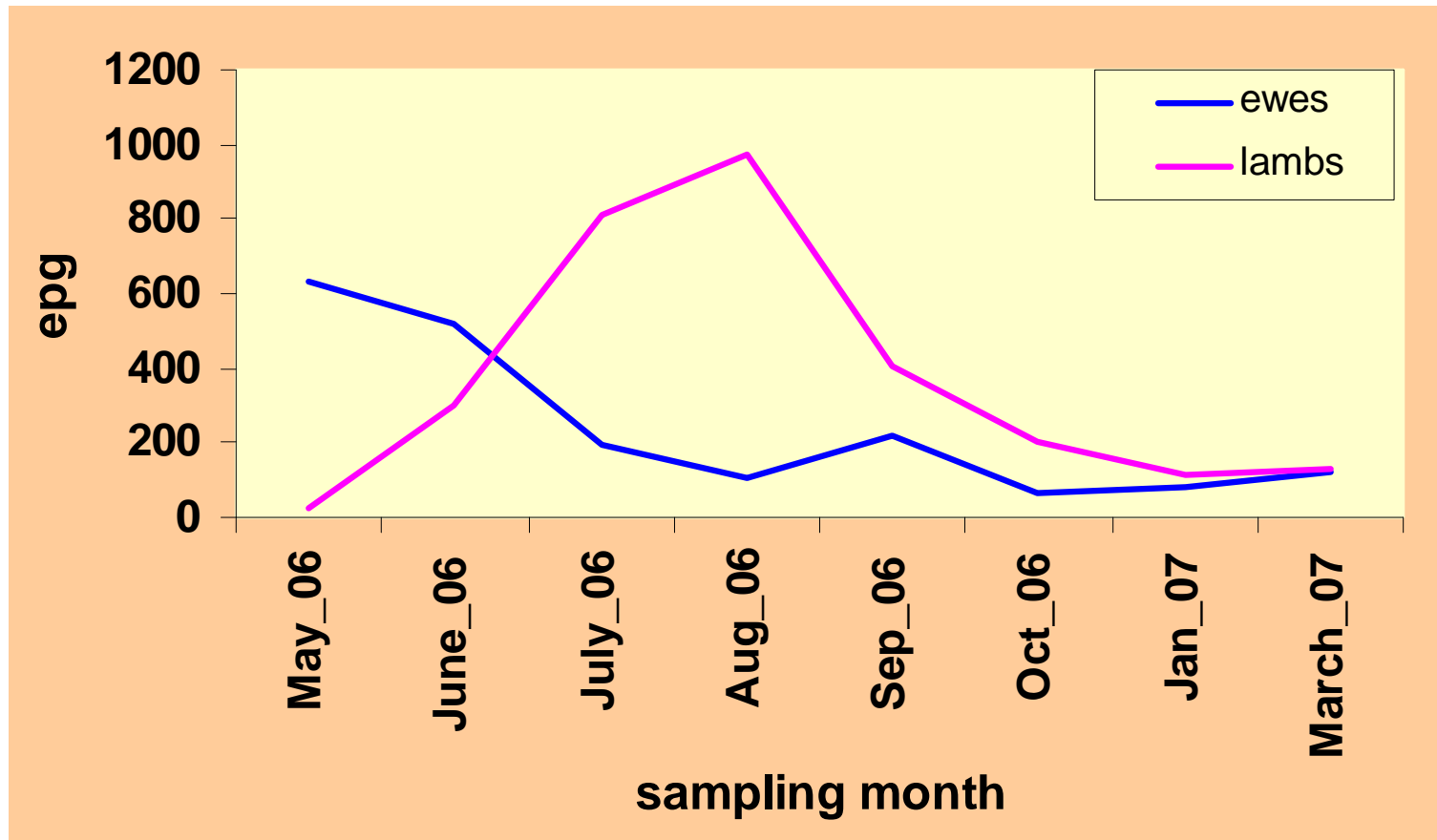
# MATERIALS and METHODS

- **Sampling: blood (2/year)**
- **Scores: body, dag, fecal consistency, FAMACHA**
- **Necropsy of lambs at the end of the grazing season (7 farms)**



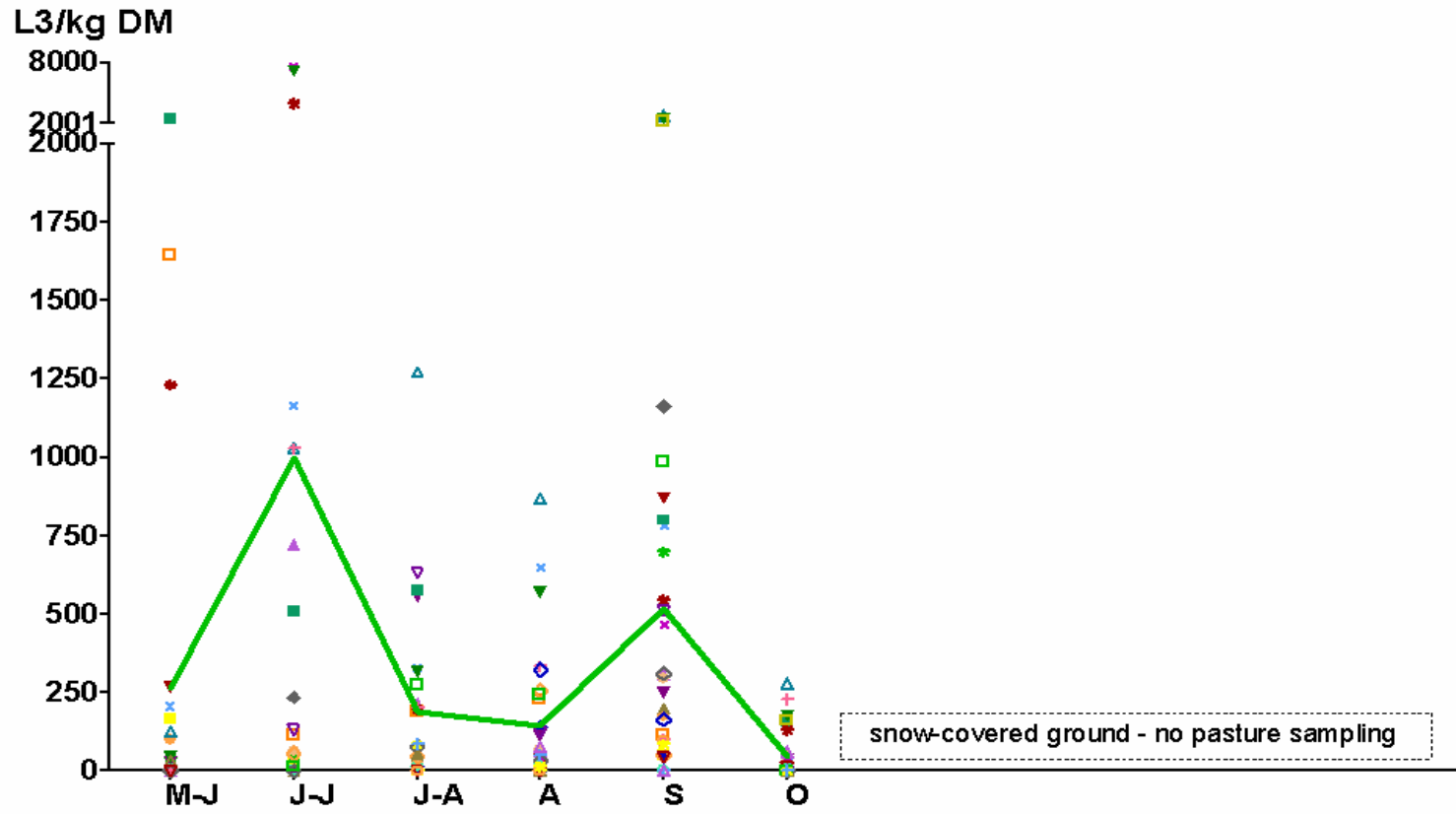
# RESULTS

## Mean Fecal Egg Counts (epg) for ewes and lambs



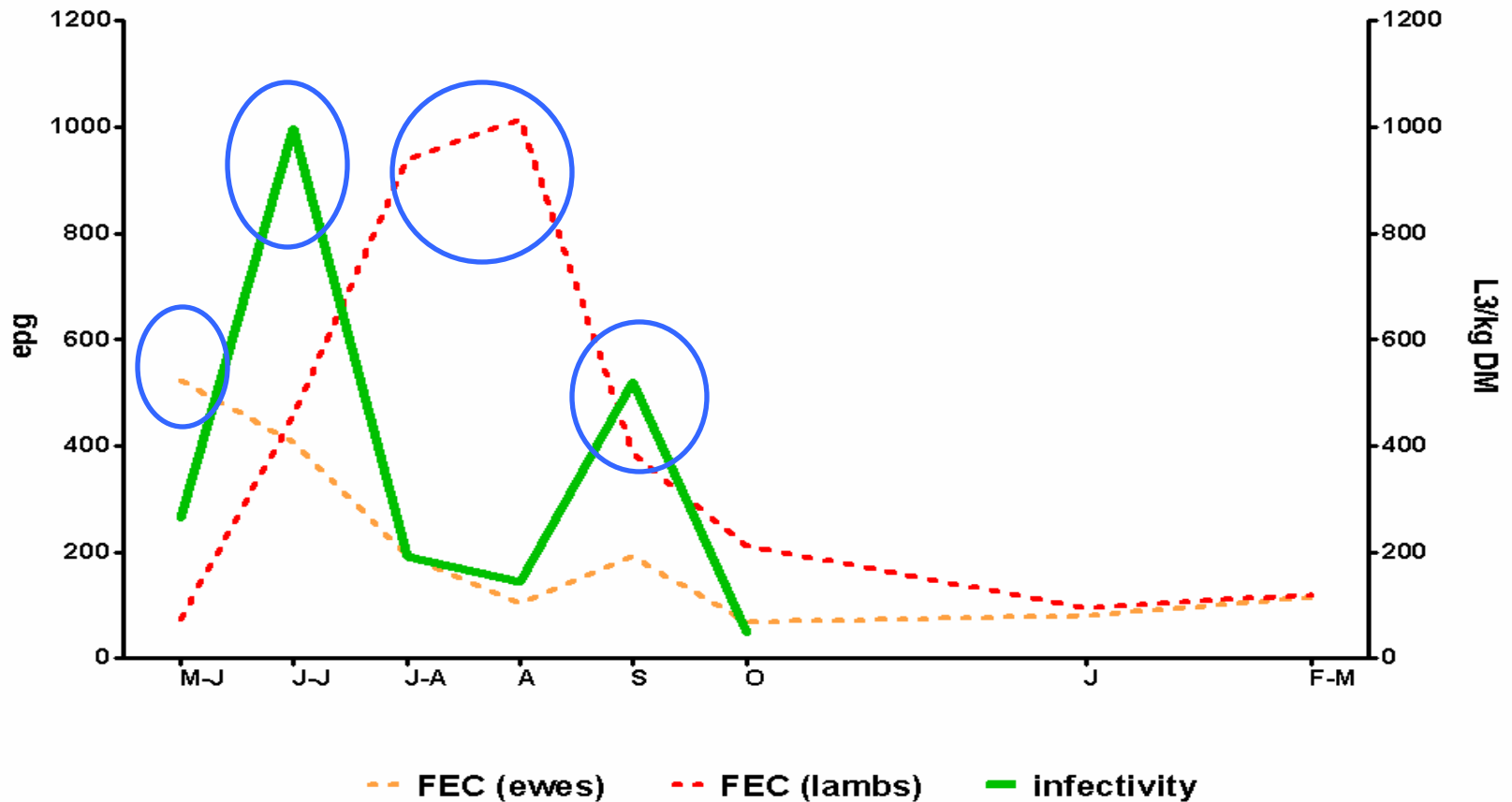
# RESULTS

## Numbers of infective larvae (L3) on pasture



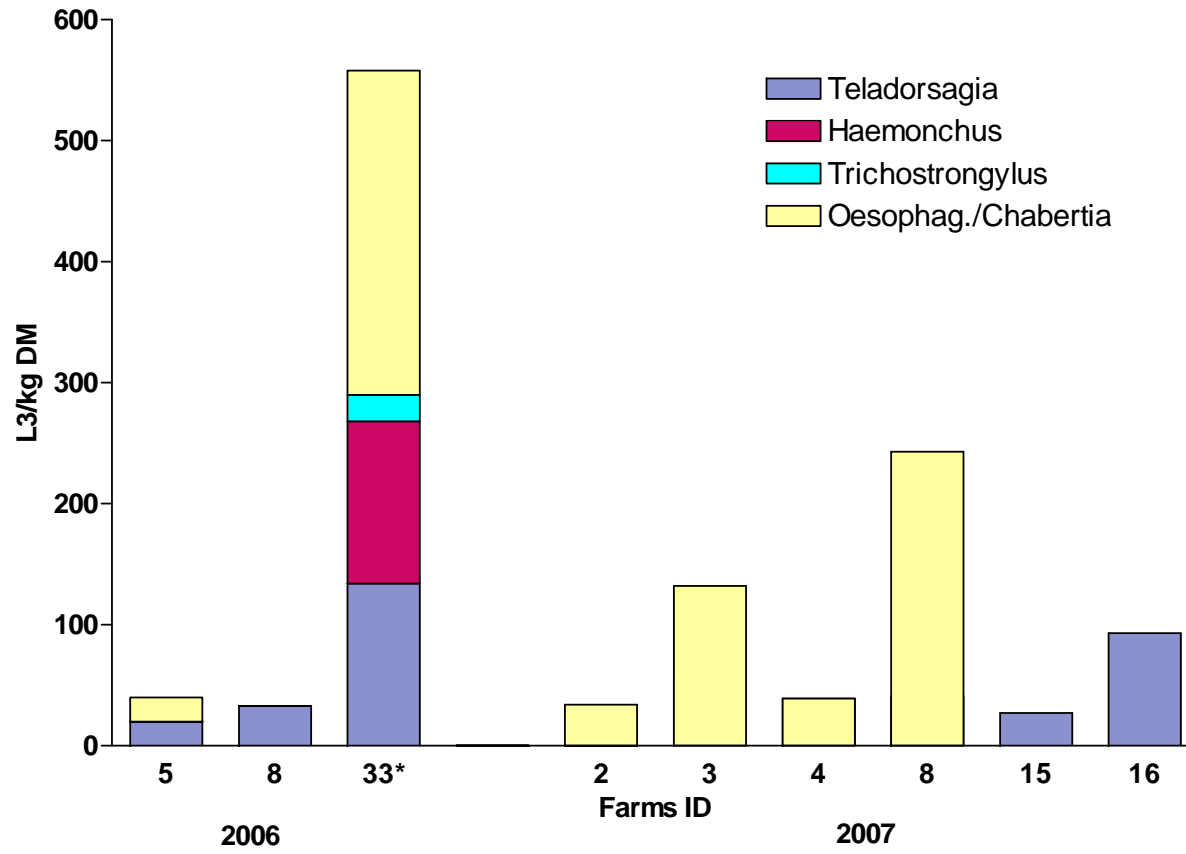
# RESULTS

## Fecal egg counts and larval infectivity trends



# RESULTS

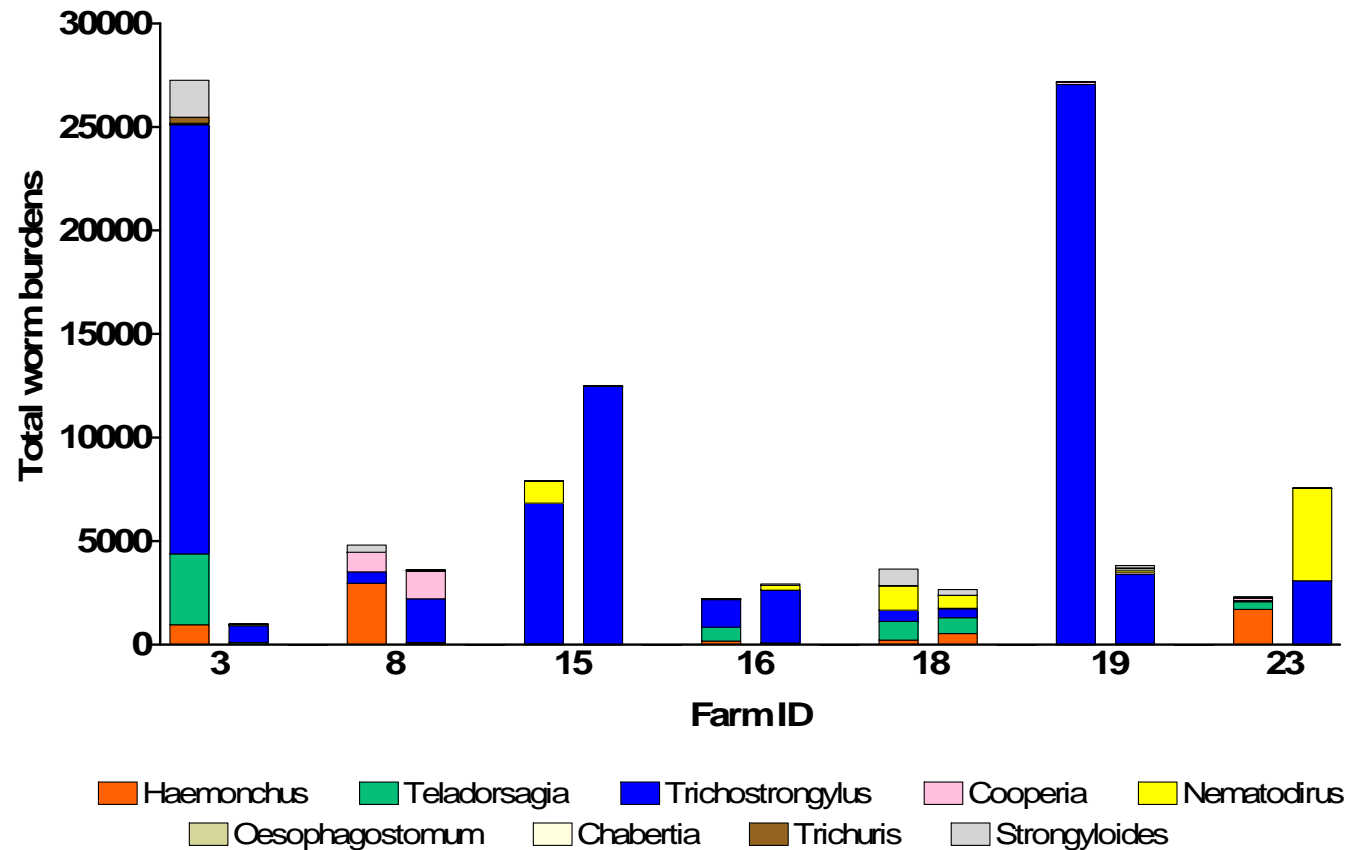
## Larval overwintering in Canadian flocks (winter 2006-2007)



Source: S. Fernández

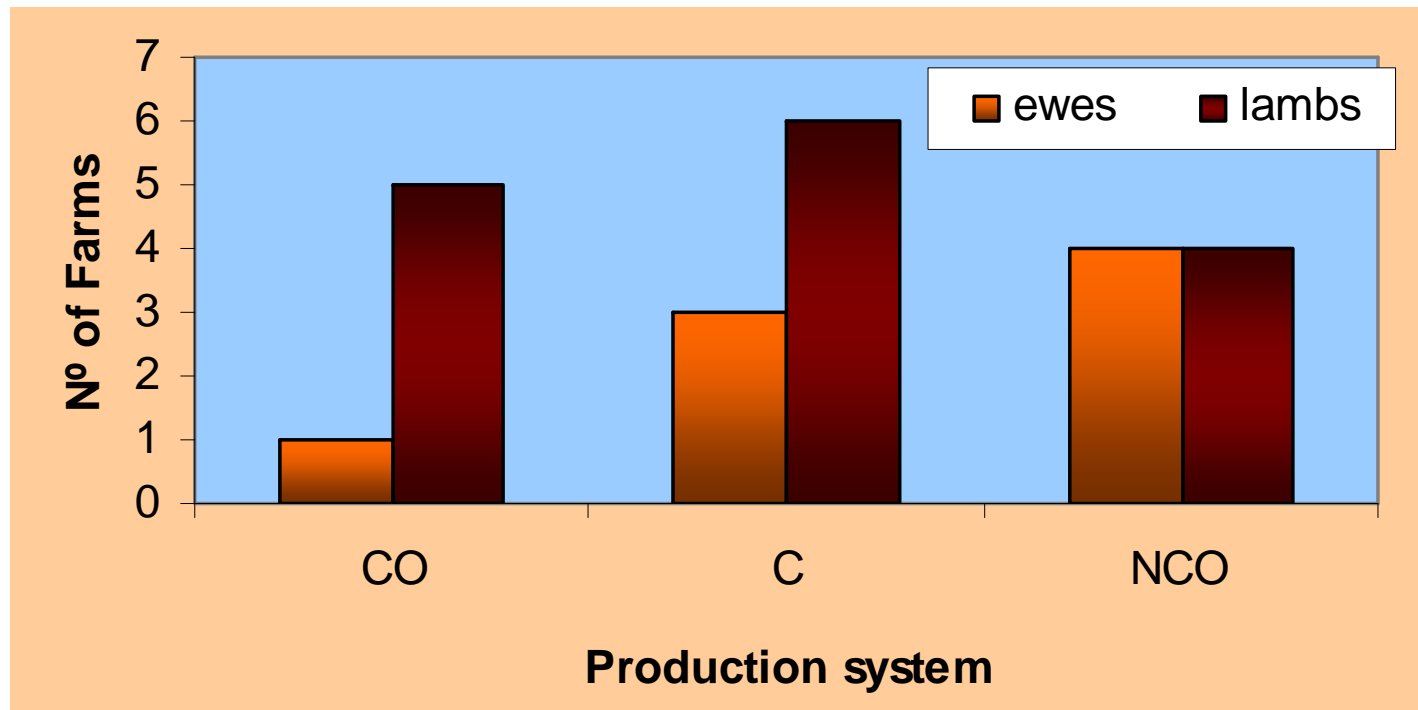
# RESULTS

## Adult parasite counts and identification (7 ON farms)



# RESULTS

**Number of farms that dewormed ewes and/or lambs, by production system**



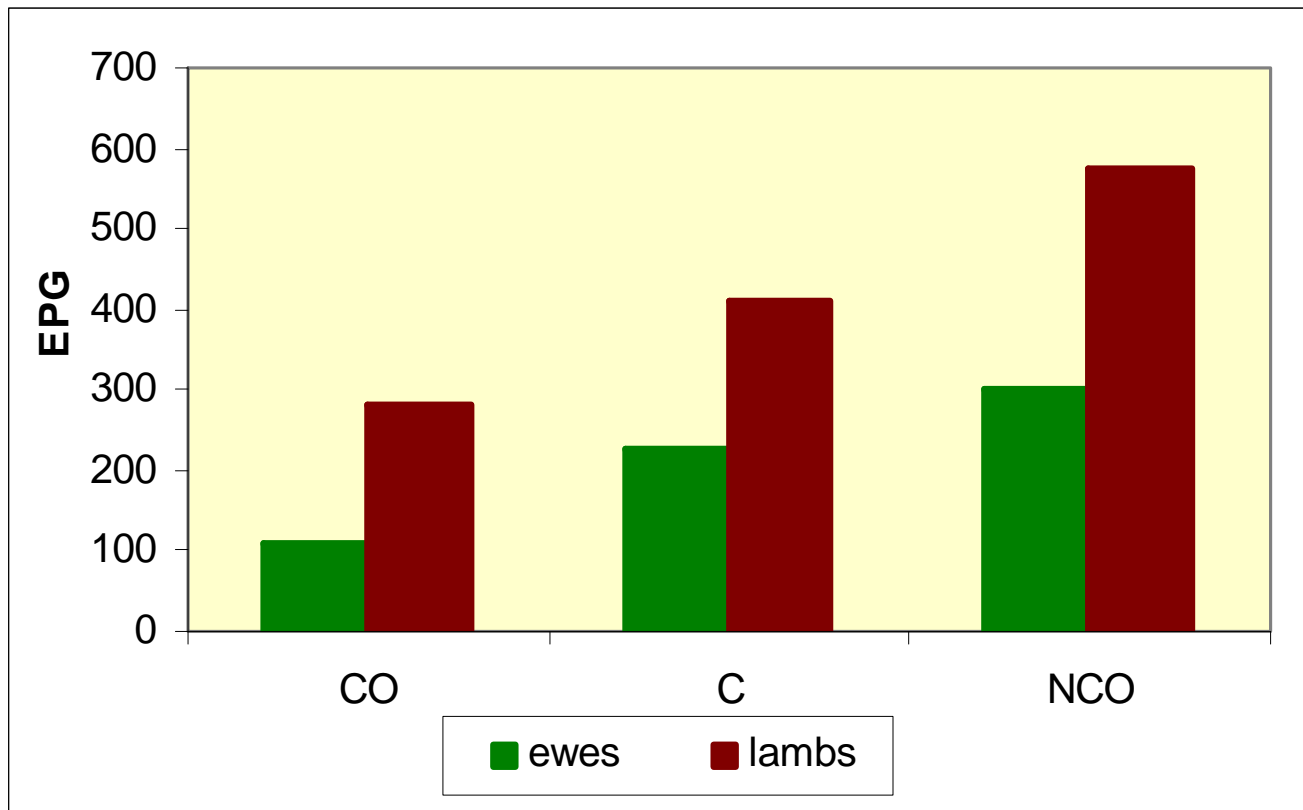
CO: certified organic

C: conventional

NCO: non-certified organic

# RESULTS

**Mean Fecal egg counts by production system and sheep category in 32 flocks (ON and QC, 2006-2007)**



CO: certified organic

C: conventional

NCO: non-certified organic

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# ACKNOWLEDGEMENTS

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- **Sheep producers (Ontario and Quebec)**
  - **EFAO (Ecological Farmers Association of Ontario)**
  - **OntarBio**
  - **Homestead Organics**
  - **Home Hardware**
  - **NSERC- Collaborative and Research Development (CRD) Program**
  - **University of Guelph**
  - **OACC**
  - **UoG/OMAFRA-Sheep Program**
  - **OMAFRA – New Directions Research Program**
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