Herd Size Impacts Dairy Goat Hoof Overgrowth

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MURC
March 22, 2014
Why study dairy goats?
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Worldwide: 26% increase
(FAOSTAT, 2012)

Image credit: geoatlas.com, 2014
Why study dairy goats?

Worldwide: 26% increase
(FAOSTAT, 2012)

Top 3 continents:
(FAOSTAT, 2012)
- Asia
- Africa
- South America

Image credit: geoatlas.com, 2014
Why study dairy goats?

Canada: 43% increase
(AAFC, 2006)

USA: 24% increase
(USDA, 2012)
Why study dairy goats?

Canada: 43% increase  
(AAFC, 2006)

USA: 24% increase  
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Lack of knowledge: hoof health
Hoof Health Issues

Hoof overgrowth can indirectly lead to:

- Abnormal behaviour
Hoof Health Issues

Hoof overgrowth can indirectly lead to:

- Abnormal behaviour
- Lameness
  - Milk production?

(Chapinal et al., 2013)
Hoof Health Issues

Hoof overgrowth can indirectly lead to:

- Abnormal behaviour
- Lameness
  - Milk production? (Chapinal et al., 2013)
- Diseases
Hoof Health Issues

Prevention requires:

- Trained workers
- Trimming

Image credits: fiascofarm.com, 2012 (right)
blog.fairview.co.za, 2014 (left)
Hoof Health Issues

- Herd sizes increase = focus on milk production
- Hoof health not primary focus
Objective

- To determine the impact of herd size on hoof overgrowth

Data collected as part of larger project, and results are in preparation. Please contact Gosia Zobel (g_zobel@yahoo.ca) for most recent analysis.
Experimental Design

- Seven Ontario commercial farms
  - Herd size: 100 – 650 milking does
- Mean number of animals sampled = 61±27
What overgrows on hooves?
What overgrows on hooves?
What overgrows on hooves?

Image credit: tractorsupply.com, 2014
What overgrows on hooves?

Sidewall

Toe

Image credit: tractorsupply.com, 2014
What overgrows on hooves?

Sidewall

Sole

Toe

Image credit: tractorsupply.com, 2014
What overgrows on hooves?

- Claw
- Toe
- Sidewall
- Sole

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Image credit: tractorsupply.com, 2014
Measurements: Hoof Scores

TOE length and presence/absence of curling

- Scale 1 – 4

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<th>Score</th>
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Measurements: Claw Scores

SIDEWALL growth and SOLE visibility

- Scale 1 – 3

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# Measurements: Claw Scores

SIDEWALL growth and SOLE visibility

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## Measurements: Claw Scores

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Image credit: Infovets.com, 2014
1. Averaged scores per milking doe
   • Front & rear = one hoof score
   • Both claws = one claw score
Statistical Analysis

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2. Averaged scores for each farm
Statistical Analysis

1. Averaged scores per milking doe
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2. Averaged scores for each farm

3. Ran regression models to test impact of herd size on:
   • Hoof score
   • Claw score
Results: Hoof Score

Average Hoof Score vs. Herd Size (# of Milking Does)

R² = 0.649

*Results in preparation: Please contact Gosia Zobel (g_zobel@yahoo.ca) for most recent analysis.
Results: Claw Score

R² = 0.9333

* Results in preparation: Please contact Gosia Zobel (g_zobel@yahoo.ca) for most recent analysis
Discussion

- Most farms: as herd size grows, hoof score and claw scores increase
- However, the largest farm achieved low scores
Conclusions

- Increasing herd size is associated with poorer hoof health
Further Studies

- Examine farm management practices of the large farm that achieved good hoof health:
Further Studies

- Examine farm management practices of the large farm that achieved good hoof health:
  - Worker training
  - Trimming schedule
  - Cleanliness of pens
Further Studies

- Expand monitoring to include more farms
- Especially more large farms
Take-home Message

As farmers expand their herd sizes, they must continue to ensure their goats have healthy hooves by having proper management.
Acknowledgements

Supervisor:

- Gosia Zobel

Research methods course professors and teaching assistant:

- Dr. Dan Weary
- Dr. Nina von Keyserlingk
- Joanna Makowska
References


Image Credits
As indicated on slides:
geoatlas.com, 2014
fiascofarm.com, 2012
blog.fairview.co.za, 2014
tractorsupply.com, 2014
infovets.com, 2014

All other photos: Gosia Zobel
Thank you!