Foetal losses in early to mid-pregnancy in Icelandic ewe lambs

Ólafur R. Dýrmundsson, Emma Eythórsdóttir, Jón V. Jónmundsson, Ólóf G. Sigurdardóttir, Eggert Gunnarsson and Sigurdur Sigurdarson
Background

• Ewe lambs are generally mated at 7 months after shearing at 6 months
  – Lower reproductive performance than in ewes but variable (Dýrmundsson, 1987; New Techniques in Sheep Production)
Background

- Fertilized ova from ewe lambs have been shown to have lower survival rates than from adult ewes (Quirke, Adams & Hanrahan, 1983; Sheep Production).

- Pregnancy diagnosis by ultrasound at day 70-90 has shown relatively high frequency of dead or dying foetuses in ewe lambs
  - Irregular frequency between farms and years
  - Not observed in other breeds overseas
Data from production records

- A period of 14 years 1995-2008
- 793 farms had experienced lambing rate of ewe lambs under 75% at least in one year.
- Great variation over time and between years
  - Some flocks had repeated problems, others only single occurrence
Flocks with ≥ 25% 1yr old ewes not lambing in ≥ 1 year 1995-2008 by county
Survey and sampling 2008

• 20 flocks with high incidence of dead foetuses in ewe lambs, diagnosed by ultrasound.
  – Farm interviews to define management in each flock

• 178 blood samples collected for measurement of GPX activity (indirect Se status)
  – Ewe lambs with dead foetuses
  – Ewes and ewe lambs with normal foetuses
Management information 2008

• Nothing common to the 20 farms
  – Feeding systems and concentrate feeding varied
  – Mineral supplements in all flocks
  – Several supplied Se injections as Se deficiency was a known problem
  – Cats present on 10 farms – possible carriers of Toxoplasma
Blood sample analysis - GPX

• GPX activity (n=178)
  – All samples were above critical values for Se deficiency
  – No difference between ewe lambs with dead or normal foetuses

• Se deficiency outruled as a main reason
  – May still play a role in flocks with low Se in the winterfeed and no Se supplementation
  – Problems do still occur in flocks with proper supplementation
Test for antibodies

• Samples from ewe lambs (n=40) with dead foetuses tested for antibodies against known abortion agents
  *Brucella ovis*, *Coxiella burnetti*,
  *Chlamydophila abortus*, BDV virus,
  *Toxoplasma gondii*

  **All tests were negative**

• Repeated tests in 2009 (n=30) for antibodies against *Toxoplasma gondii* 10 months later, to test for delayed antibody development, returned negative results
Conclusions

• Foetal losses in ewe lambs seem to have occurred irregularly for a long time
• No explanations found so far
• Suggestions:
  – some unknown pathogenic agent that causes abortion at a critical stage of pregnancy? The same animals do not abort the following year.
  – Intensive management with high growth rate conflicting with pregnancy maintenance in ewe lambs??
THANK YOU!

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Photographs: Björg María Þórsdóttir, Áskell Þórisson, Emma Eyþórsdóttir