

Development of a bronchoalveolar lavage sampling method for the diagnosis of respiratory problems in goat kids

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FAAP





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- Increasing number of goats in Belgium
 - Number of farms
 - Number of goats per farm

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- Hobby \rightarrow professional goat farmers
 - Dairy goats







- Increasing number of goats in Belgium
 - Number of farms
 - Number of goats per farm
- Hobby \rightarrow professional goat farmers
 - Dairy goats
- Professional goat farmers
 - Bulk production → milk processing factory
 - On farm milk processing \rightarrow cheese, yoghurt

- Professional goat farms
 - "green" image
 - Good animal welfare
 - Few drugs used



Professional goat farms

- "green" image
 - Good animal welfare
 - Few drugs used
- Adult goats : few problems
 - Milking 500 5000 dairy goats



Professional goat farms

- "green" image
 - Good animal welfare
 - Few drugs used
- Adult goats : few problems
 - Milking 100 5000 dairy goats
- Rearing goat kids
 - More problems
 - Knowledge
 - Care
 - Dedication



Rearing goat kids

- ► ≤2 weeks : diarrhea
- ≥2 months : respiratory problems





Rearing goat kids

- ≤2 weeks : diarrhea
- ≥2 months : respiratory problems

- Respiratory problems:
 - Economical losses: growth reduction, deaths¹, drugs¹
 - Increased use of antibiotics => risk for antibiotical resistance

Sampling methods

Nasal swab

Easy

- More polybacterial cultures
- Always Pasteurellaceae

- BAL
 - More difficult
 - Mostly pure cultures
 - Pathogen agents
 - Histophilus somnus

Aim of the study

- Development of a bronchoalveolar lavage (BAL) technique for sampling lower airways in goat kids
 - Easy to perform
 - Minimal impact on animal welfare
 - Reliable technique

Experiment

- Technique 1
 - Non-endoscopic BAL technique
 - ► ≈Cølves
 - Non-sedated

- Technique 2
 - Laryngoscopic guided BAL technique
 - Sedated (0,2 mg/kg xylazine)

Experiment

- Technique 1
 - Non-endoscopic BAL technique
 - ► ≈Cølves
 - Non-sedated
 - Head: over-stretched position
 - Catheter
 - Nose
 - Blind introduction
 - Wedge position

- Technique 2
 - Laryngoscopic guided BAL technique
 - Sedated (0,2 mg/kg xylazine)

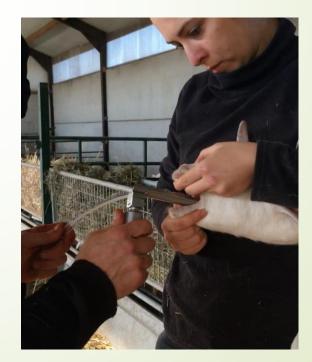
- Catheter
- Laryngoscopic guided
- Through mouth
- Over epiglottis in trachea
- Wedge position

Experiment

- Technique 1
 - Non-endoscopic BAL technique
 - ► ≈Cølves
 - Non-sedated



- Technique 2
 - Laryngoscopic guided BAL technique
 - Sedated (0,2 mg/kg xylazine)



Results

Technique 1

- Non-endoscopic BAL technique
- ► ≈Cølves
- Non-sedated
- BAL sampling
 - ► 3/15 = 20%
 - Struggling kids

- Technique 2
 - Laryngoscopic guided BAL technique
 - Sedated (0,2 mg/kg xylazine)

- BAL sampling
 - 125/134 = 93% (9 farms)
 - 19:1-2 weeks old
 - 115 : 2-3 months old
 - 10 15 animals per hour
 - 9 failures: no or insufficiënt BAL fluid recovered



Conclusion

- Laryngoscopic BAL-technique
 - Sedated kids
 - 2 persons
 - High success rate (\geq 90%)
 - Reliable technique
 - 10 15 samples per hour
 - Different ages of kids
 - Well tolerated

Future perspectives

- Technique ready to be used on large scale
- Aid in respiratory diseases :
 - Better diagnosis
 - Targeted therapy
- Isolation of pathogen agent
- Control of antibiotical-resistance
- Allosw developmet of farm specific autovaccins







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