BVDV in Alpaca: Abortion and Persistent Infection

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Denver, 2006
Herd History PI Cria 1

Alberta 1 → Pregnant Female →
Alberta 2 → Alberta 3 →
Ontario 4 →
Ontario 5

Gabriel

LeBron born
Ontario 6
Aborted Fetus
7 mon

3,500 km

9 sick, 1 died
stress breaks
fleece

2.5 mon

2 early
pregnancy
losses
75-80d gest

9 mon

13 cria born
1 Low birth weight
BVDV PI
Diarrhea

17/20-Type 1 NADL - 1:3072
Type 2 NVSL 125c - 1:394

Ontario 5
52 alpaca

LeBron died 8 mon
Pneumonia, Diarrhea

LeBron died 8 mon

Aborted Fetus
5.5 mon
IHC lu,ki,ht + BVDV
VI + NCP-BVDV skin only

6 mon

3 mon

5 mon

Ontario 6
Pregnant Female
Aborted Fetus
7 mon

Ontario 6
East

Gabriel’s huacaya farm
52 alpaca

Dam & cria barn facing south
Fleece storage

Courtesy Nancy Carr
Herd History PI Cria 2

Ontario 7
64 alpaca

Pregnant Female
4 mons ges

New Brunswick 9
97 alpaca

Ontario 8
33 alpaca

2 abortions
9/10 - Type 1 NADL - 1:384
Type 2 NVSL 125c - 1:96

21 tested
1 Low birth weight cria
PI BVDV

Lila
huacaya
4 months
Pneumonia, Diarrhea

1,500 km
**Gabriel - PI**

- Exposed about 65d gestation (Dam Ab Type 1, 1:768)
- NCP-BVDV iso from placenta; 3d, 26d, 46d buffy coat; 46d tissues
- RT-PCR - BVDV Type 1, - whole blood -/+plasma, -/+serum, + buffy coat
- Ag ELISA 46d + serum, + ear notch
- Serum virus titer $10^{4.0} \text{ CCID}_{50} / \text{mL}$
- Serum Ab titer 46d - neg Type 1,2

**Lila - PI**

- Exposed before 120d gestation
- NCP-BVDV iso 75d buffy coat; 75d, 104d, 120d serum; 120d tissues
- RT-PCR - BVDV Type 1, -/+/- serum 120d
- Ag ELISA 120d + serum
- Serum virus titer $10^{5.0} \text{ CCID}_{50} / \text{mL}$
- Serum Ab titer 120d - neg Type 1, 2
PI Cria 1 BVDV E2 gene

Gabriel Type1b - 4 NA / 2AA diff

Courtesy of Dr. Mohit Baxi
Gabriel

Kidney

Chorioallantoic membrane
placenta

Lila
Need to update recommendations for testing before next alpaca birthing season (1 vs 16 or 39 BVDV PI)

- Test/specimen to identify BVDV PI cria?
  - VI +/+ buffy coat
  - RT-PCR + buffy coat
  - IHC + placenta
  - IHC +/+ haired skin
  - Ag ELISA +/+ serum, + haired skin
  - Multiple tests on low birth weight cria?
- Vaccination? – assessment of herd exposure

- Cerebellar Hypoplasia?
- Mucosal Disease?
Thyroid gland

Gabriel

Lila
Herd History PI Cria1

Alberta 1 → Female → Alberta 2 → Alberta 3 → Ontario 4 → Ontario 6
3,500 km

Alberta 2
Alberta 3
Ontario 4
Ontario 5
Ontario 6

Aborted Fetus
52 alpaca
6 mon

Gabriel

9 sick, 1 dead stress breaks fleece
2.5 mon

2 early pregnancy losses 75-80d gest
3 mon

13 cria born 1 Low birth weight
PI BVDV
Diarrhea

14/17 -Type 1 NADL - 1:3072
Type 2 NVSL 125c - 1:394

Sickly cria LeBron born

LeBron died 8 mon Pneumonia, Diarrhea

LeBron
died 5 mon

5 mon

PI BVDV

Diarrhea

Ontario 5
Ontario 6

Aborted Fetus
7 mon

Female
Herd History PI Cria1
Cria1

3 mon

5.5 mon
IHC lu,ki,ht + BVDV
VI + NCP-BVDV skin only