Smarter

SMAll RuminanTs breeding for Efficiency and Resilience

Evaluation of udder morphology and milk production in prolific and meat ewes

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Livestock Production: Relevance in Uruguay

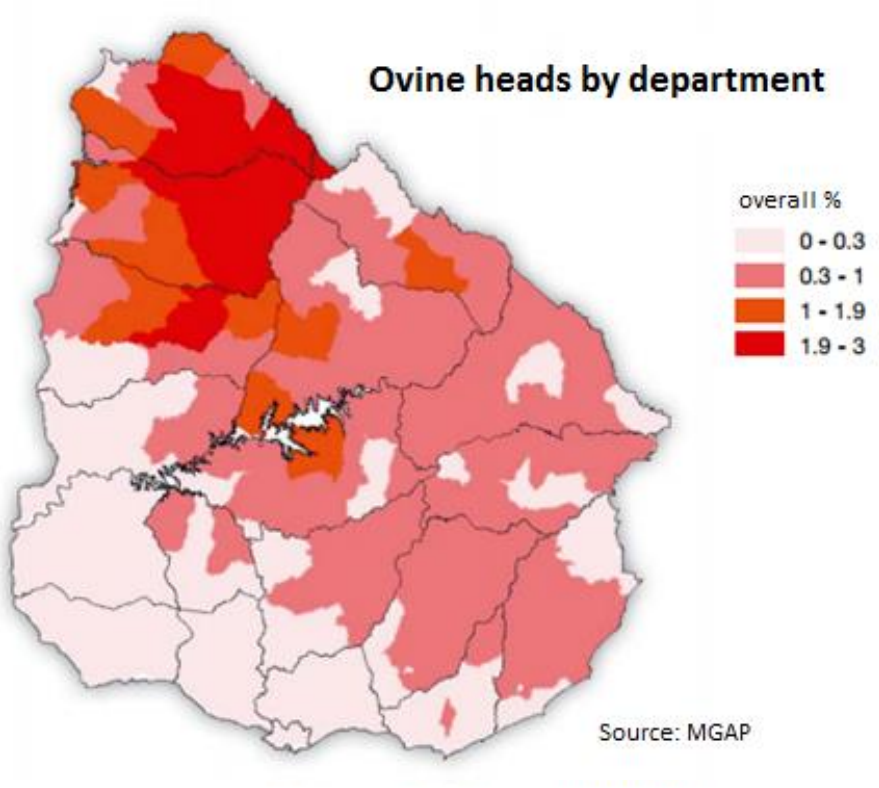
- **Economy relies on agriculture** (70% of all exports)

- **Area: 17.000.000 ha**
  - 13.4 ha livestock production
  - 10.5 ha natural grasslands
  - **12 millions beef cattle**
  - **6.5 million sheep**

- **Sheep Breeds**
  - 43 % Corriedale
  - 25 % Australian Merino
  - 8.4 % Polwarth
  - 3.8 % Texel
  - 3.8 % Merilin
  - 3.0 % Romney
  - 2.5 % Dohne Merino

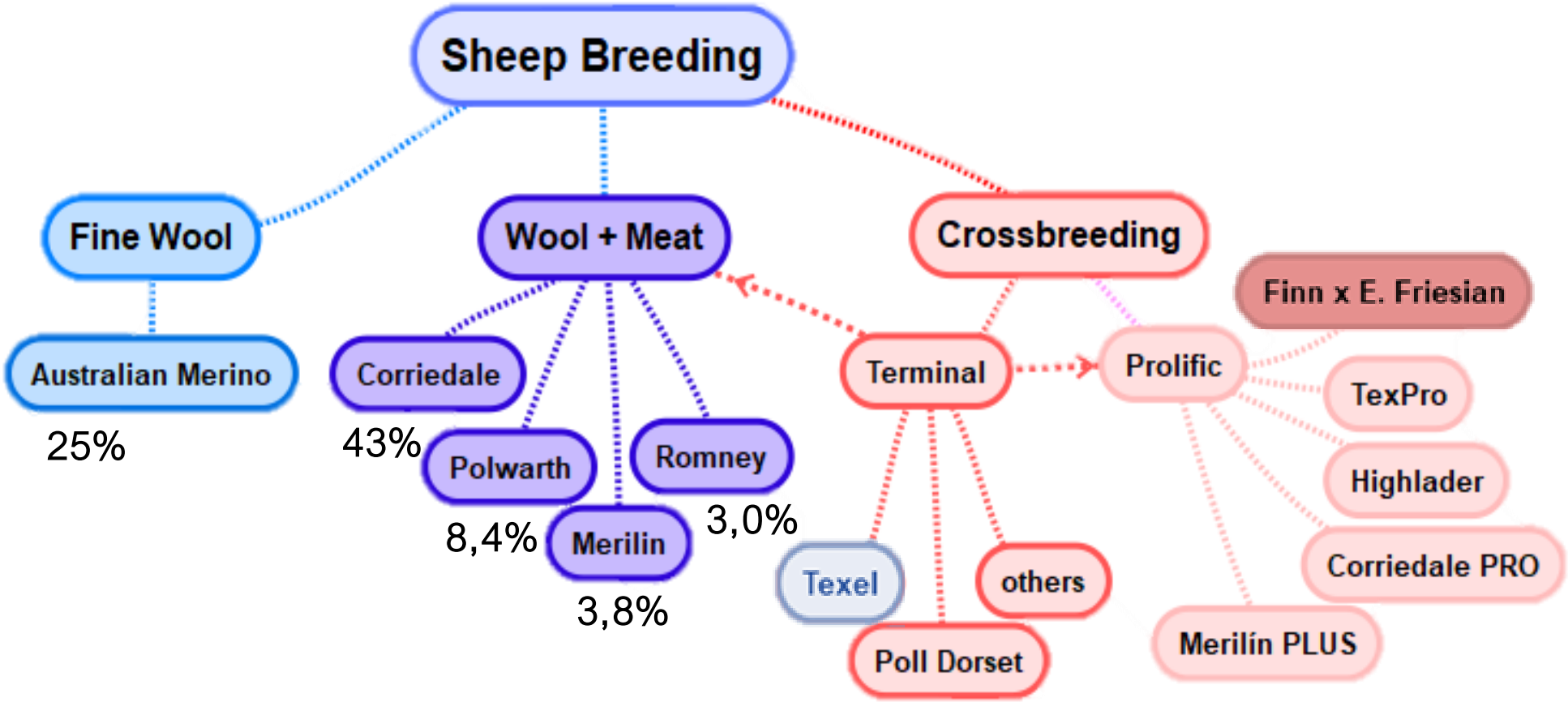
- **Social importance**: 41.600 farms

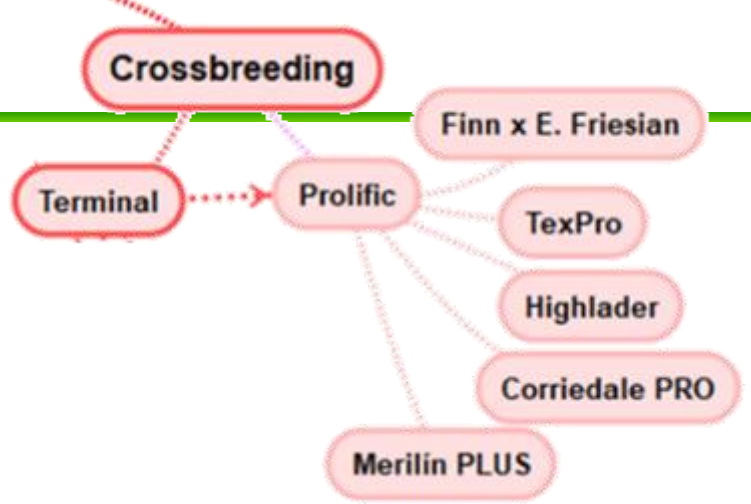
Uruguayan Sheep Sector: territorial distribution



- **6 million** ovine heads (20 million average in 1970-2000)
- 3% exports wool and textile products (mostly China)
- Sheep exports: **80% wool** (sp China) – **20% meat** (sp Brazil)
- **20.000 farms** have sheep (44% of farmers)

Sheep breeding: Uruguayan vision





Main Traits: reproduction, growth, FEC, wool, milk production

Tools: prolific crossbreeding, EPD, terminal crossbreeding

NEW!

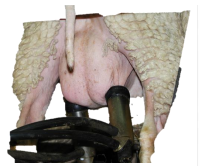
Intensive systems

Evaluation of production and udder morphology

- 57 ewes

- Three flocks
- Some management

- 8 Finnsheep
- 24 East Friesian
- 25 Texel

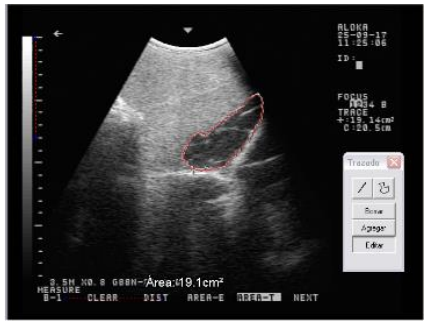


Test Day Records

- 161 records

- DIM controls
- 21, 40 and 60 days

- 24 Finnsheep
- 68 East Friesian
- 69 Texel



Side area of the udder

- **Glandular cistern area** (CA) were recorded by ultrasonography after intramuscular injection of synthetic oxytocin

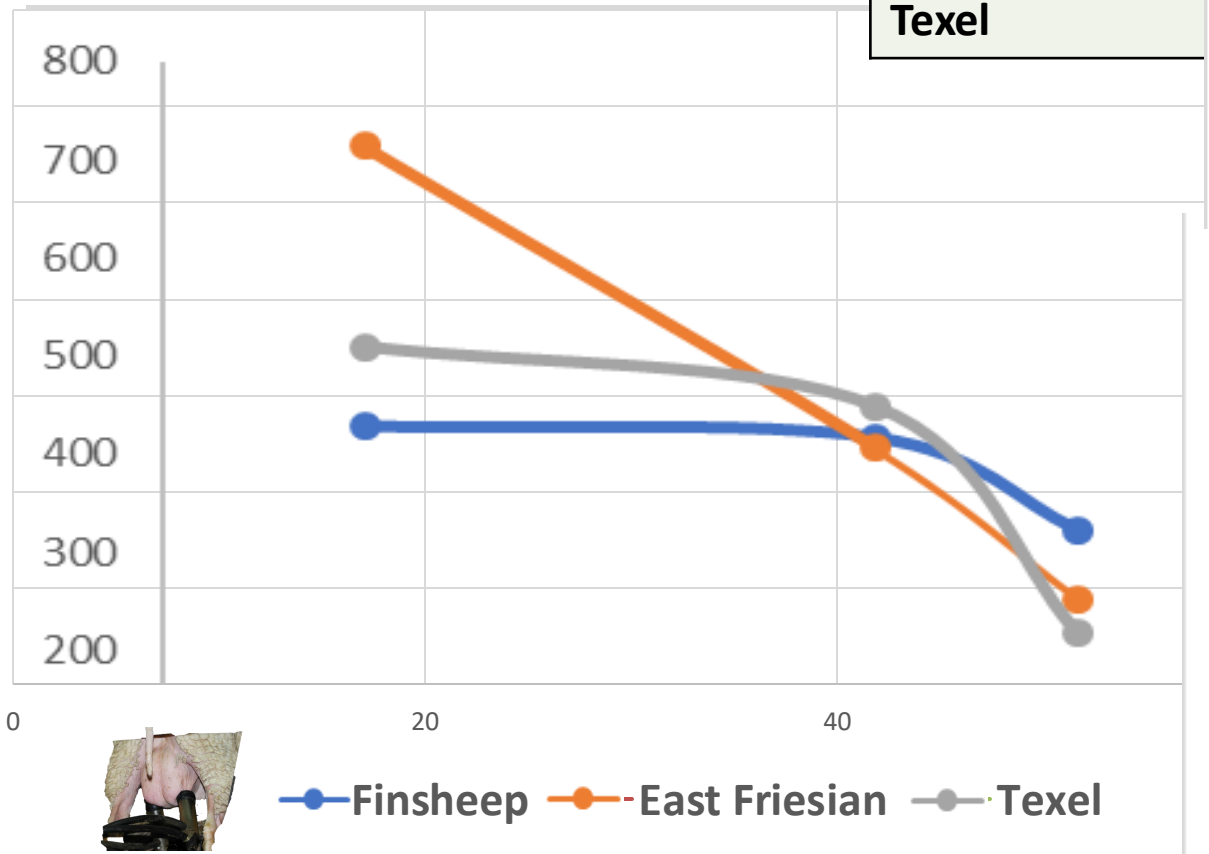
- Mechanic milking to record the milk weight (**MW**) and quality (**protein-Prot%** and **Fat%** percentages)

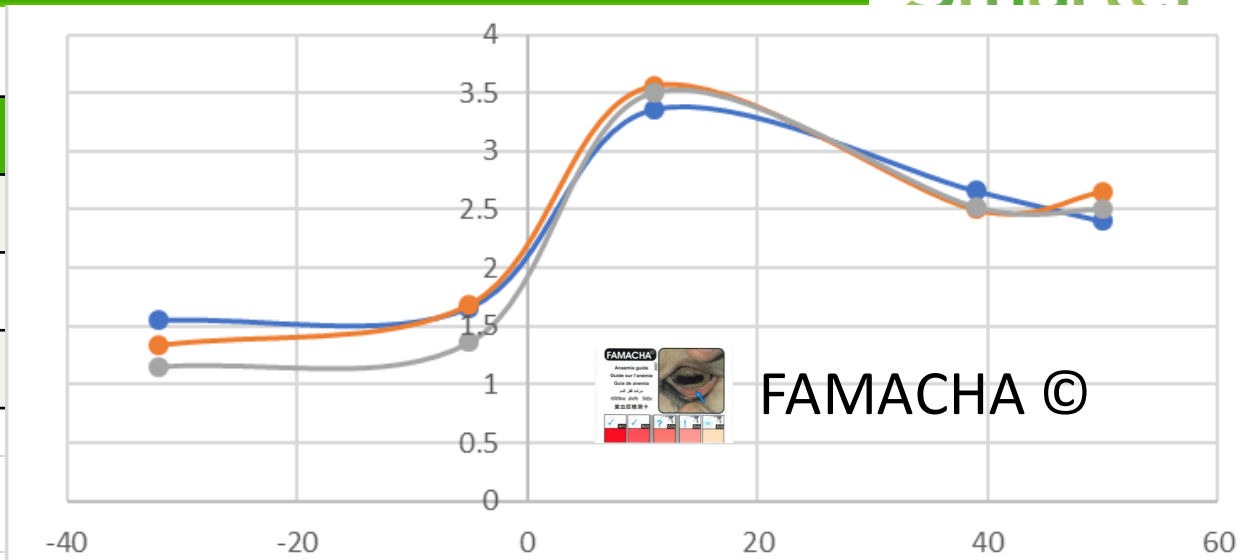
- All the traits were adjusted by the effect of **age of ewe** (1-3), **type of lambing** (1-2), **breed** (F, EF, T) and DIM and the square of DIM (both as covariables)

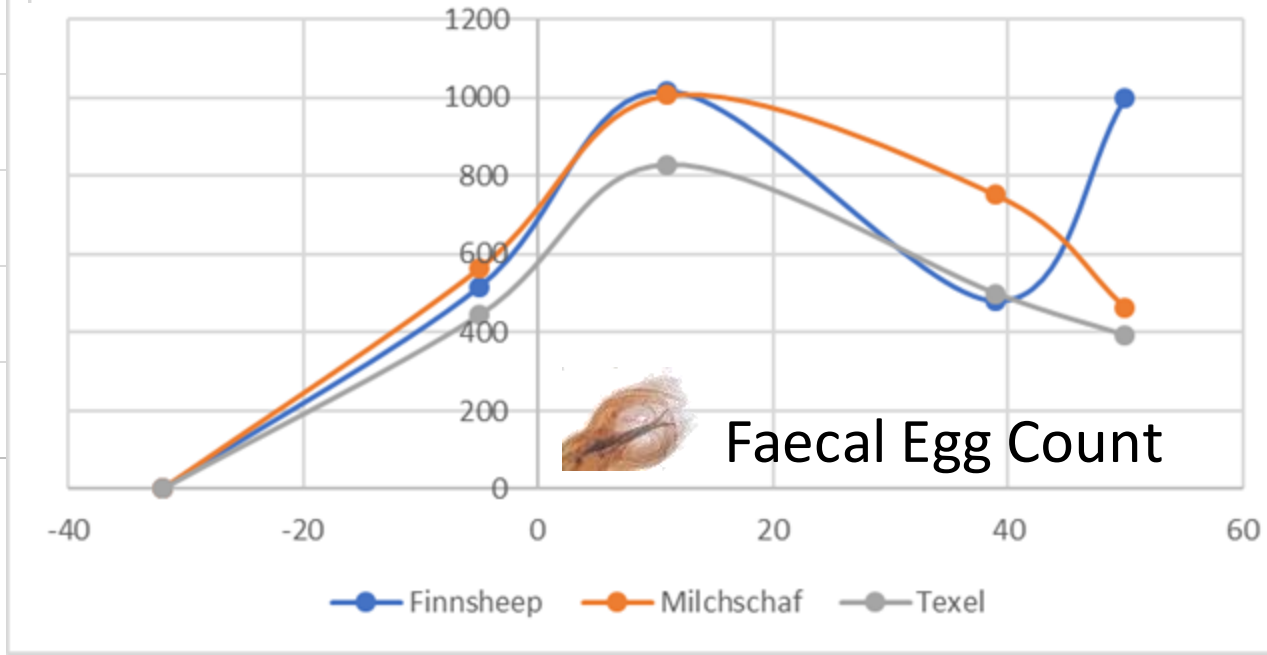
- **Correlation** between the residuals of CA and MW from these models were computed.

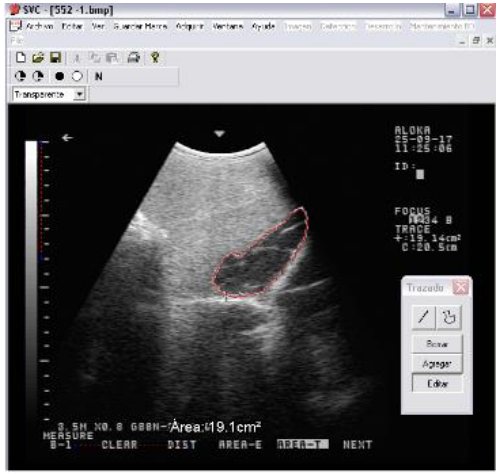
Lactation Curve

Breed
East Fresian
Finnsheep
Texel





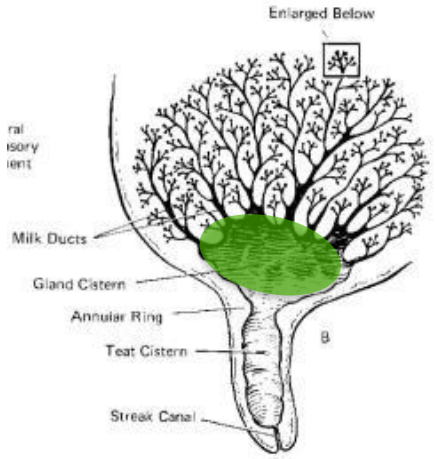




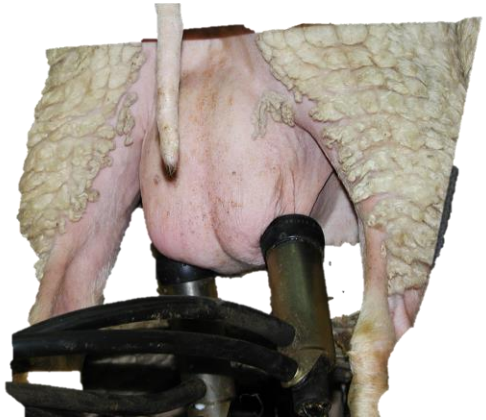
Breed	Cisternal Area cm^2
East Fresian	35.7±2.0
Finnsheep	25.0±3.4
Texel	28.4±2.6

East Friesian is a dairy breed selected to be tolerant to long milking intervals

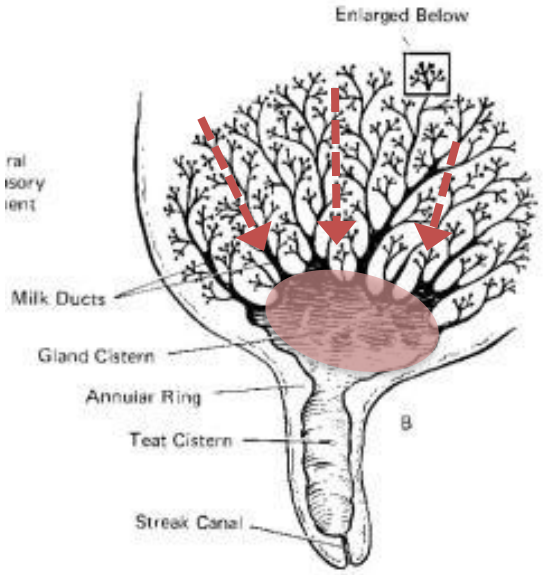
Correlation between CA and MW residuals



East Fresian	0.00
Finnsheep	0.48
Texel	0.42



- The findings would indicate a **greater** proportion of alveolar production in the **East Friesian** breed and/or a better response to the release of milk by the oxytocin injection than non-dairy breeds



- Further research would help to determine the breed's differences **between milk production and quality**, as their **conversion into kilograms of lambs weaned**.

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Thank you for your attention

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