What's new for helping french sheep AI centres to improve their efficiency?

Ingrid David, Aline Bonnot, Jérôme Raoul, Gilles Lagriffoul

ANIO
INSTITUT DE L'ELEVAGE
ALIMENTATION
AGRICULTURE
ENVIRONNEMENT
INRA

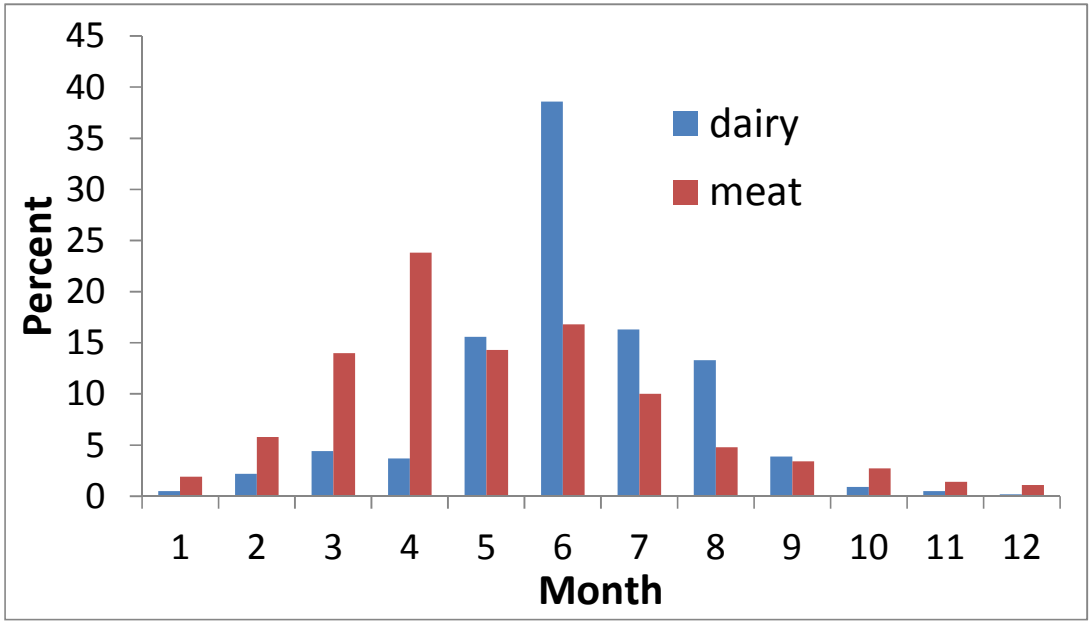
Sheep AI in France

- > 810 000 AI / year

80% dairy sheep

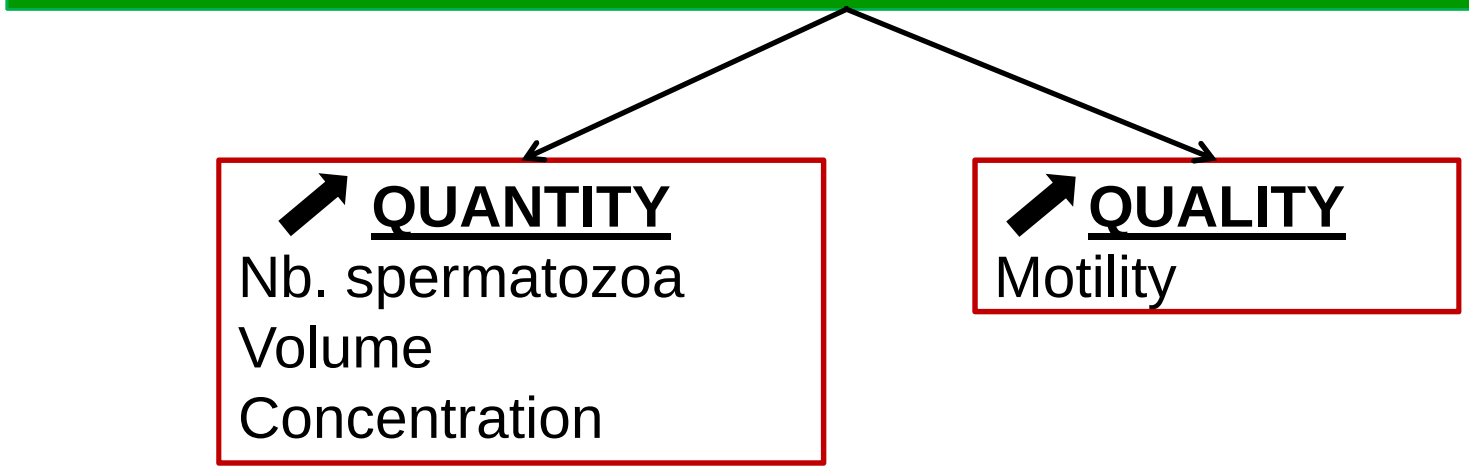
20% meat sheep

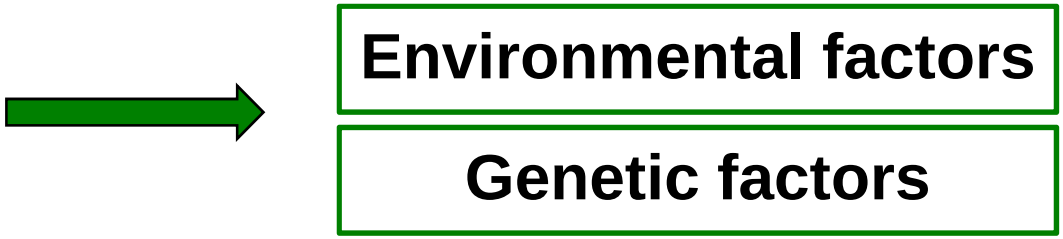
- 95 % AI with fresh semen
- Short period of AI



Objective

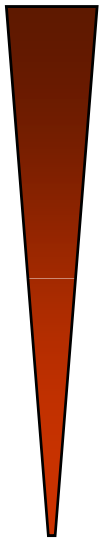
Improve the quantity of useful semen per ram per day





Factors (BELIA)

- Environmental



  - year
  - Season
  - Age (adult)
  - Time interval between collections
  - Nb. jumps
  - AM/PM

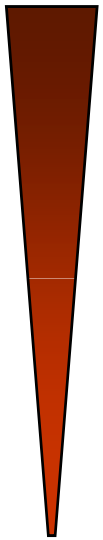
- Genetic

Factors (BELIA)

- Environmental
  - year
  - Season
  - Age (adult)
  - Time interval between collections
  - Nb. jumps
  - AM/PM
- Genetic
  - Rams choice
  - Semen collection

Factors (BELIA)

Environmental

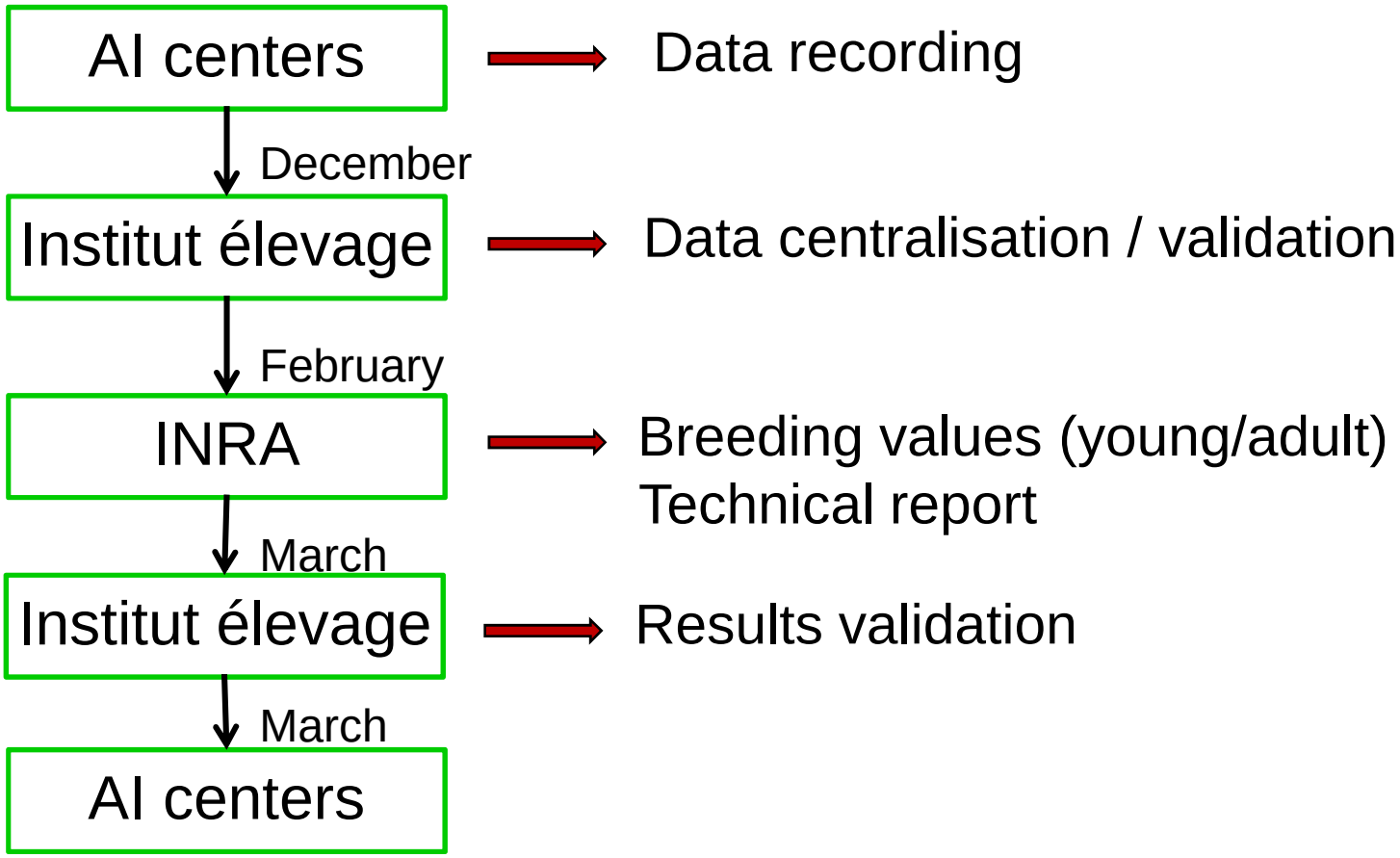


- year
- Season
- Age (adult)
- Time interval between collections
- Nb. jumps
- AM/PM

Genetic

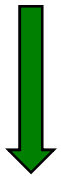
	Heritabilities		
	Young <2 years	Adult	Correlation
Volume	0.19	0.28	0.76
Concentration	0.27	0.24	0.51
Nb. spz.	0.17	0.24	0.52
motility	0.07	0.13	0.81

Genetic evaluation- technical support

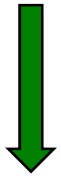


Genetic evaluation

- Young / adult multiple trait animal model for each trait



Breeding value and/or Male effect



New information to help AI centres for selecting rams

Technical report

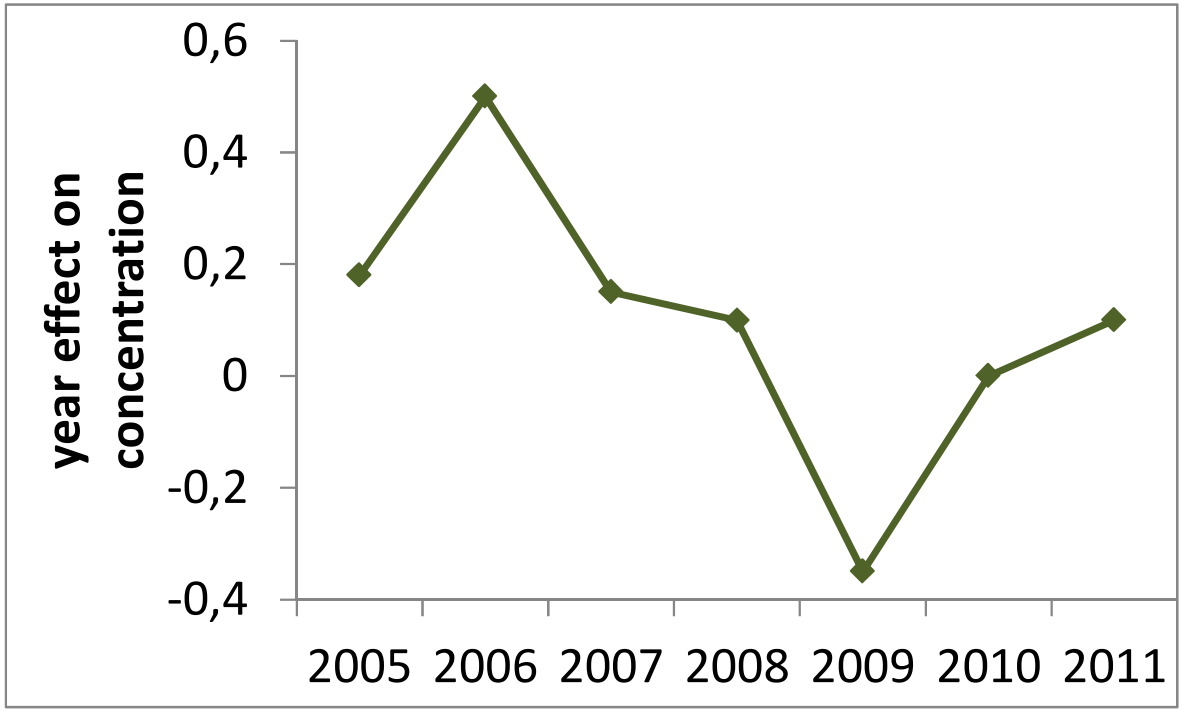
Evaluate if there is a problem / compare with other AI centres

- Descriptive statistics

Technical report

Evaluate if there is a problem / compare with other AI centres

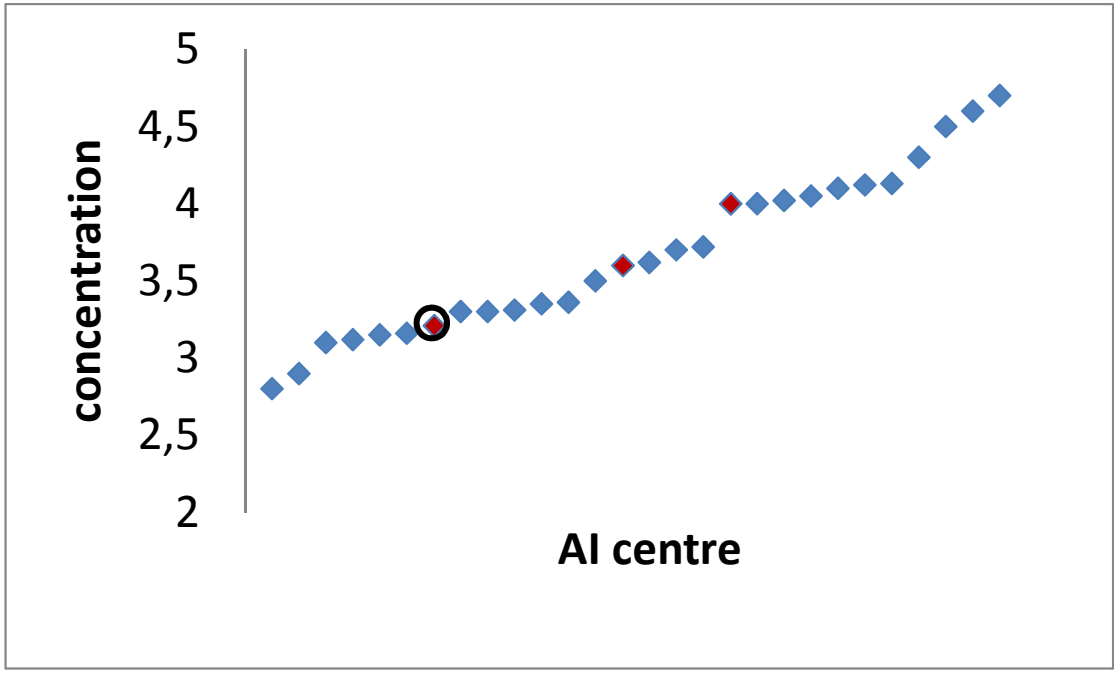
- Descriptive statistics
- Year effect



Technical report

Evaluate if there is a problem / compare with other AI centres

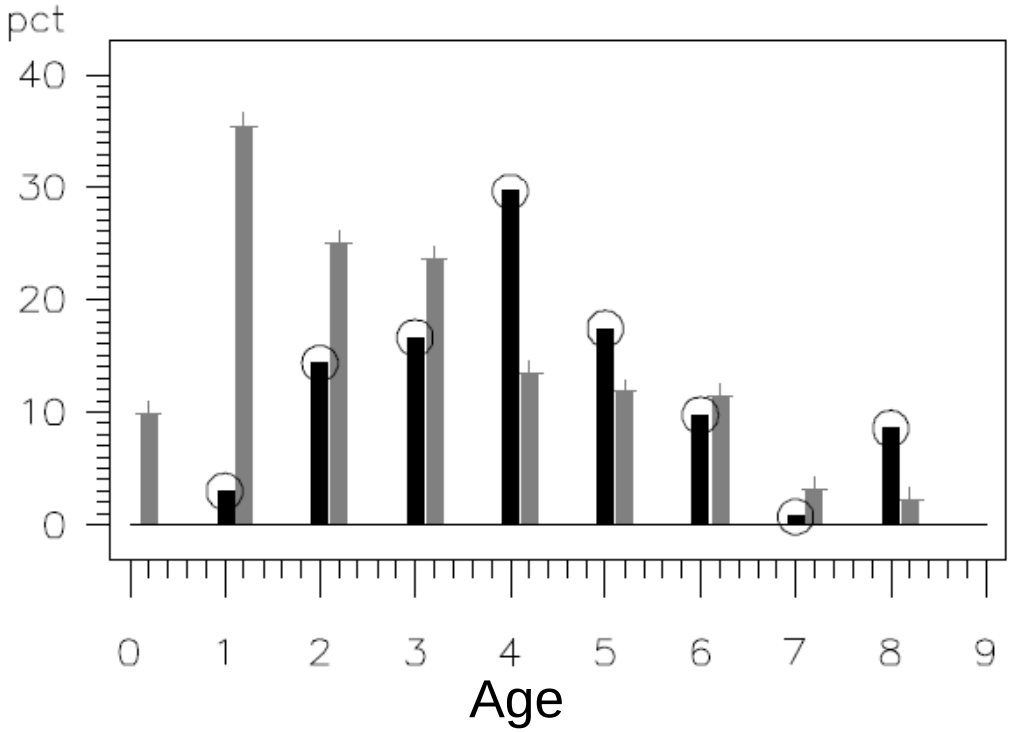
- Descriptive statistics
- Year effect
- Comparison with other AI centres



Technical report

Evaluate if there is a problem / compare with other AI centres

- Descriptive statistics
- Year effect
- Comparison with other AI centres
- Distribution of factors influencing the trait



Feedback

- Breeding values
  - Help some AI centers in choosing rams to be culled

- Technical report
  - Year effect 
  - Comparison with others 
  - Poor influence of the distribution of environmental effects 

Perspective

- Semen production in the context of genomic selection
  - Young rams must be able to produce semen like adults