

A COMMON DATABASE TO STUDY THE EFFICIENCY OF THE MOTHER-YOUNG PAIR IN SUCKLING ANIMALS

Juliette Auclair-Ronzaud, Elisa Peugny, Bernard Sepchat, Claire Douine, Mickael Bernard, Laurence Wimel,
Anne De La Torre

EAAP 2024 – Session 83 - Early life nutrition and its latent impact on growth, lactational and reproductive physiology

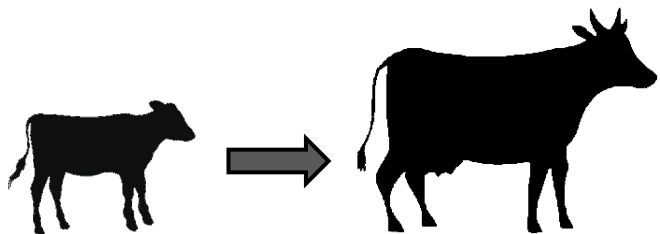


1. Mother-young efficiency

Definition

Defined for **feed efficiency** as the « ability of an animal to produce the same amount with the minimum amount of feed resources » *Koch et al; 1963*

For the study we focused on the **mother-young efficiency** divided in two objectives:



Assure the young growth



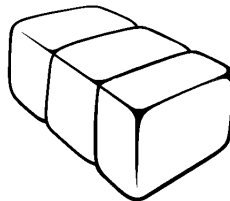
Maintain the mother production level

Definition

Various factors might affect the efficiency of the mother-young pair



Genetics



Nutrition



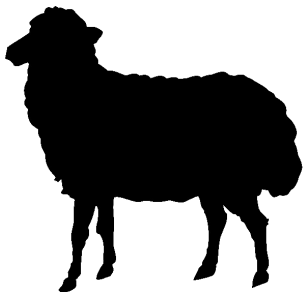
Management system

Some of these factors cannot be altered while others can be monitored & managed to improve mother-young efficiency

Aim : identifying generic proxies for the mother-young pair efficiency

2. A common database

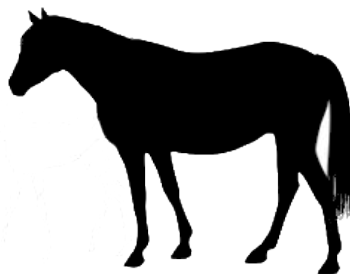
Study of three different suckling species



6345 births (1999-2014)

Breed: Vendéenne

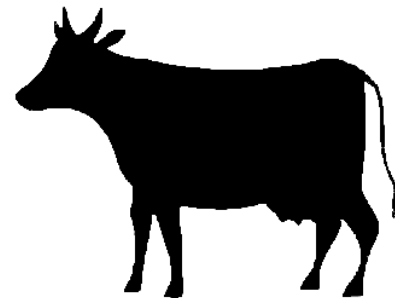
Data collection: IDELE-CIIRPO



462 births (2010-2022)

Breed: mainly Anglo-Arabian

Data collection: IFCE-Chamberet



604 births (2010-2022)

Breed: Charolaise ; Salers

Data collection: INRAE-UMRH

Performances recorded in the database



Weighing: For each specie **key weights** were determined to get a generalized database

Mother



Before breeding season, 24hours after parturition

Young



Birth weight, weight at alimentation differentiation, weight at weaning

Used as well to compute average daily gain

Performances recorded in the database



Body condition score: Key farming events common to all species (beginning of the breeding season, before & after parturition)

Cows



scale 0-5 (*Agabriel et al., 1986*)

Ewes



Scale 0-5

Mares



French scale 0-5 (*INRA and Institut du Cheval, 1997*)

Performances recorded in the database



Milk production: Production evaluated once at specific dates for two species

Cows



Estimation of quantity of milk consumed using weigh-suckle-weigh method

(Le Neindre and Dubroeuq, 1973)

Mares



Direct measurement: manual milking without oxytocin

(Doreau and Boulot, 1989)

Animal & management information

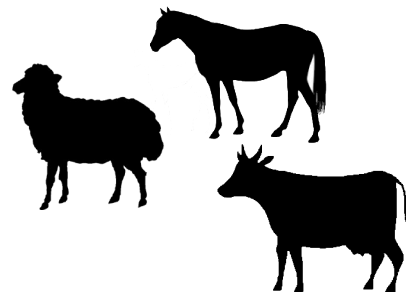


Management

Age at parturition

Parturition period

Nutrition



Animal information

Breed

Parity

Number of lactations

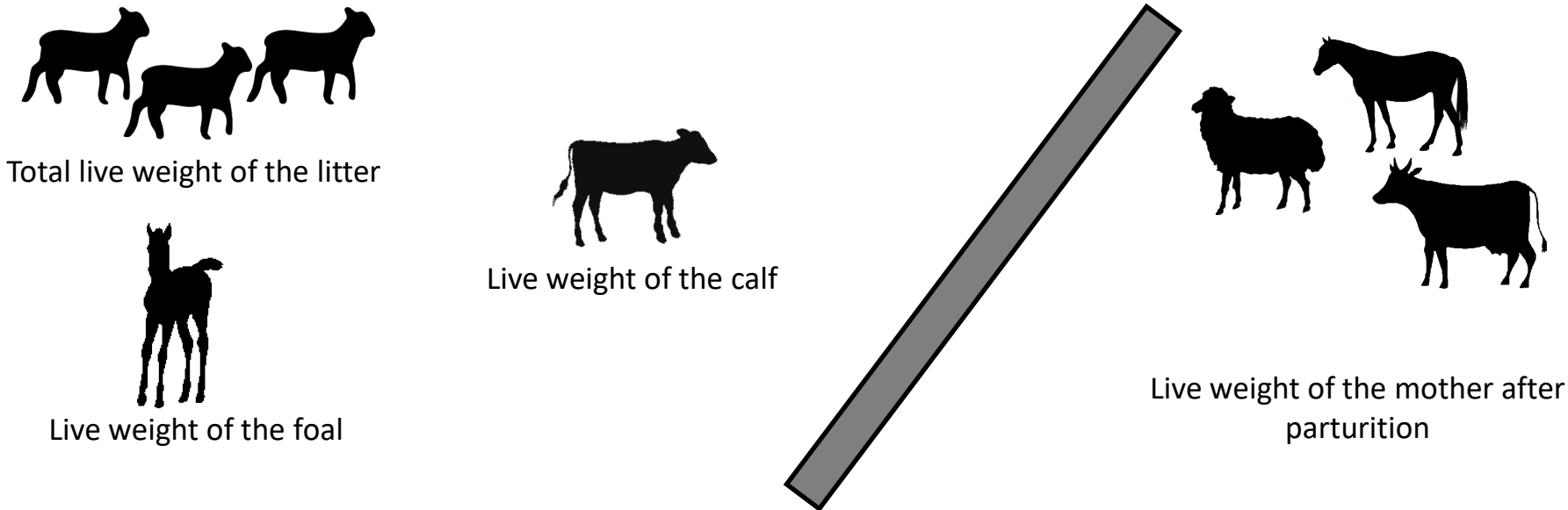
Age of the mother

Birth & weaning dates

3. One studied proxy: the produced weight of young

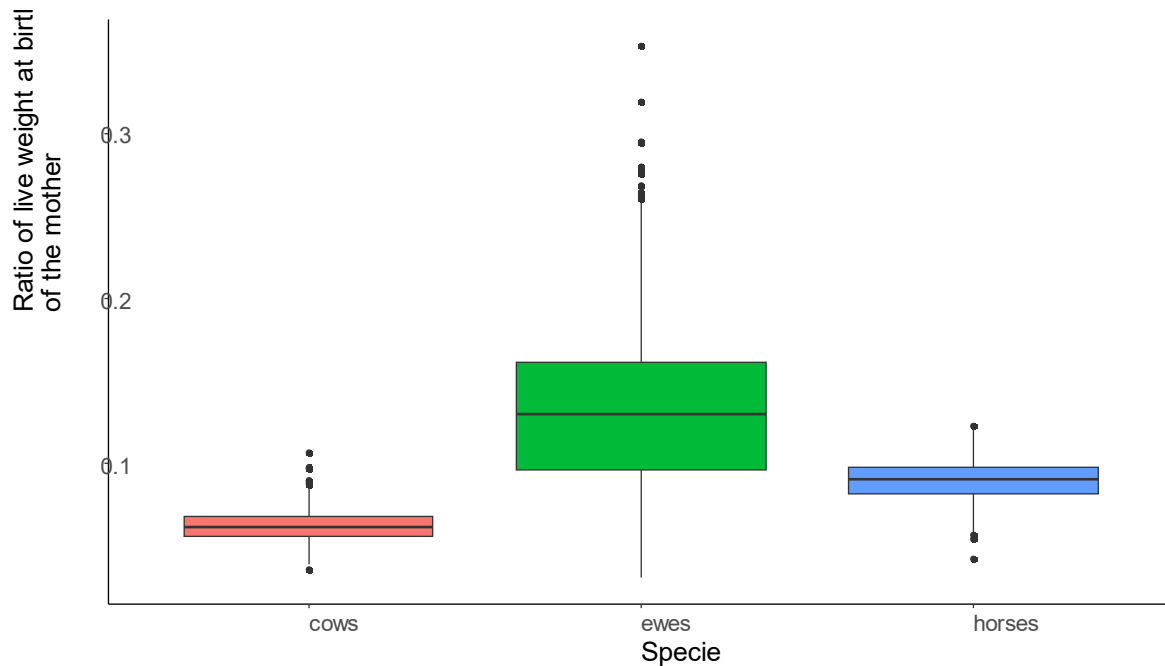
Ratio of « produced young » - calculation

Aiming to generate **common proxies** with equivalence between measurement from the three species



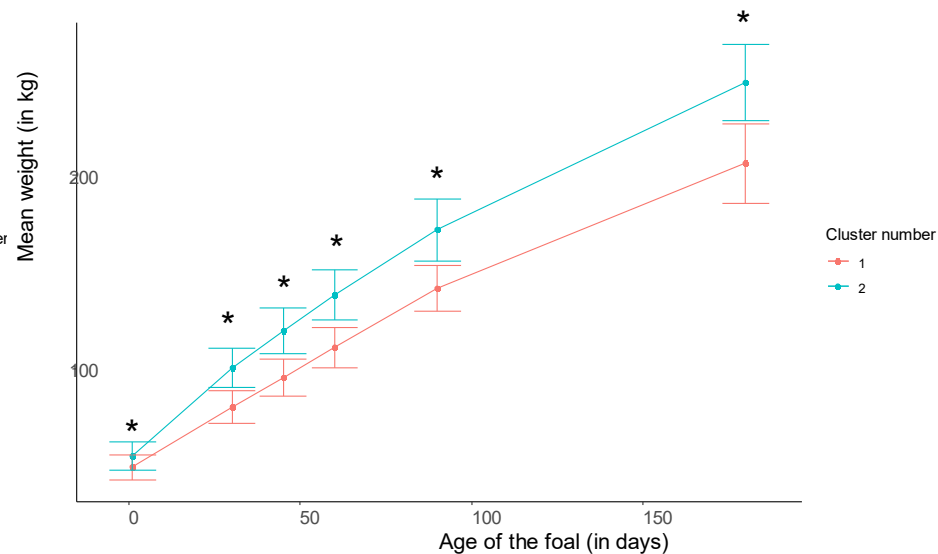
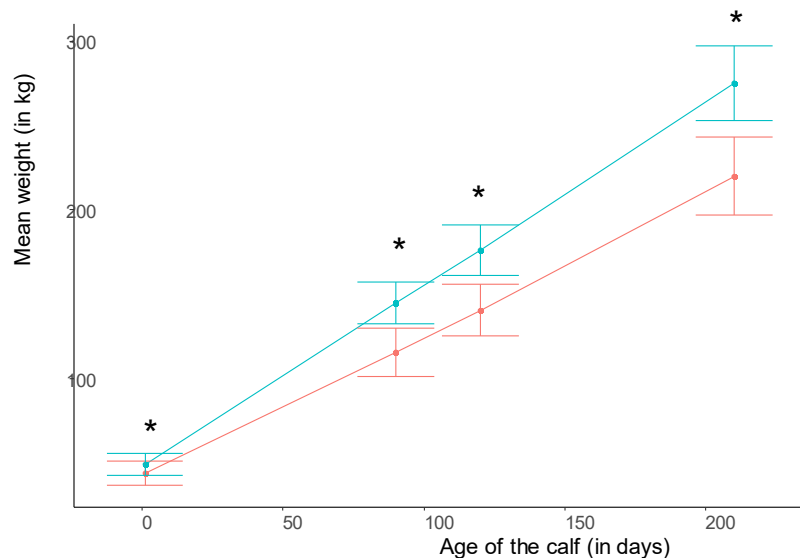
Ratio of « produced young » - results

- Lower for cows than for horses and ewes
- Ewes being able to reach a higher ratio when giving birth to 3 or 4 lambs



Growth curves

After calculation of the produced weight of the young we computed a **curve clustering** for cows and horses



Conclusion

- Building of a complete database regrouping 3 species
- Identification of first common indicators
- Need to go further on the data treatment to find (maybe) common traits



Some questions?