



Development of novel traits for genetic evaluation of maternal fertility in extensively farmed beef cattle

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1

Developing NZ
indexes



2

Data
measurements and
new trait
development



3

Beef progeny test
and commercial
herds



4

Data management
and genetic
evaluation



5

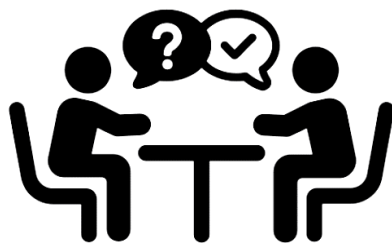
Industry uptake
and programme
management



INFORMING NZ BEEF



INZB New Trait Development



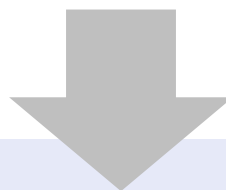
Advisory Groups



Independent Review



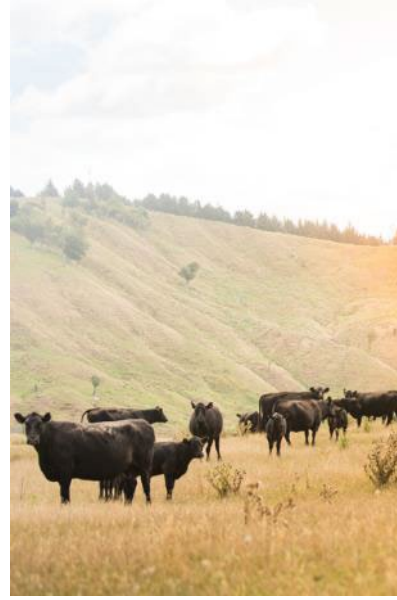
Trait Prioritisation Survey



Top 10 traits ranked

1. Female fertility
2. Cow functionality
3. Calving ease
4. Feed efficiency
5. Post-weaning growth
6. Growth to weaning
7. Carcase weight
8. Carcase dressing %
9. First cycle calving
10. Body condition score

The New Zealand Beef System



The New Zealand Beef System



Calving season



Mating season



Calf weaning



Calving season

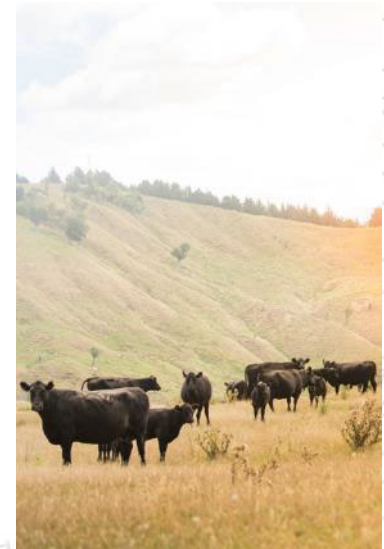
Spring

Summer

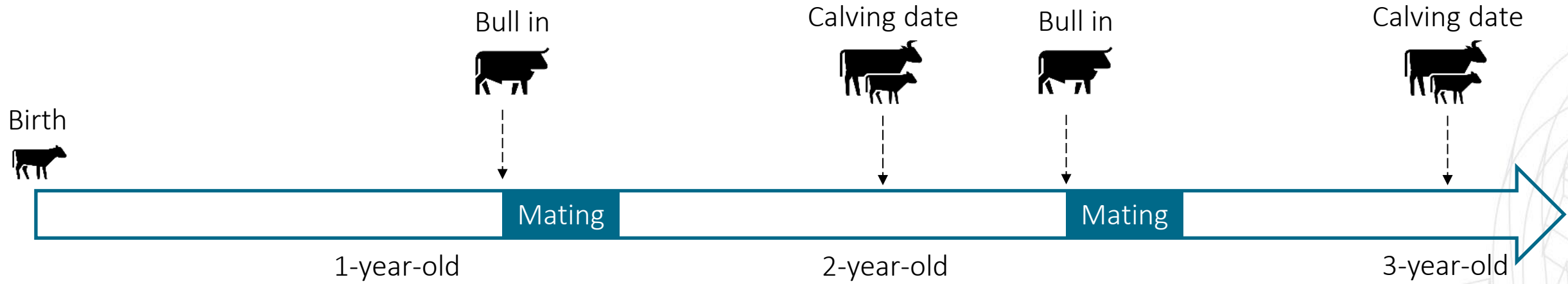
Autumn

Winter

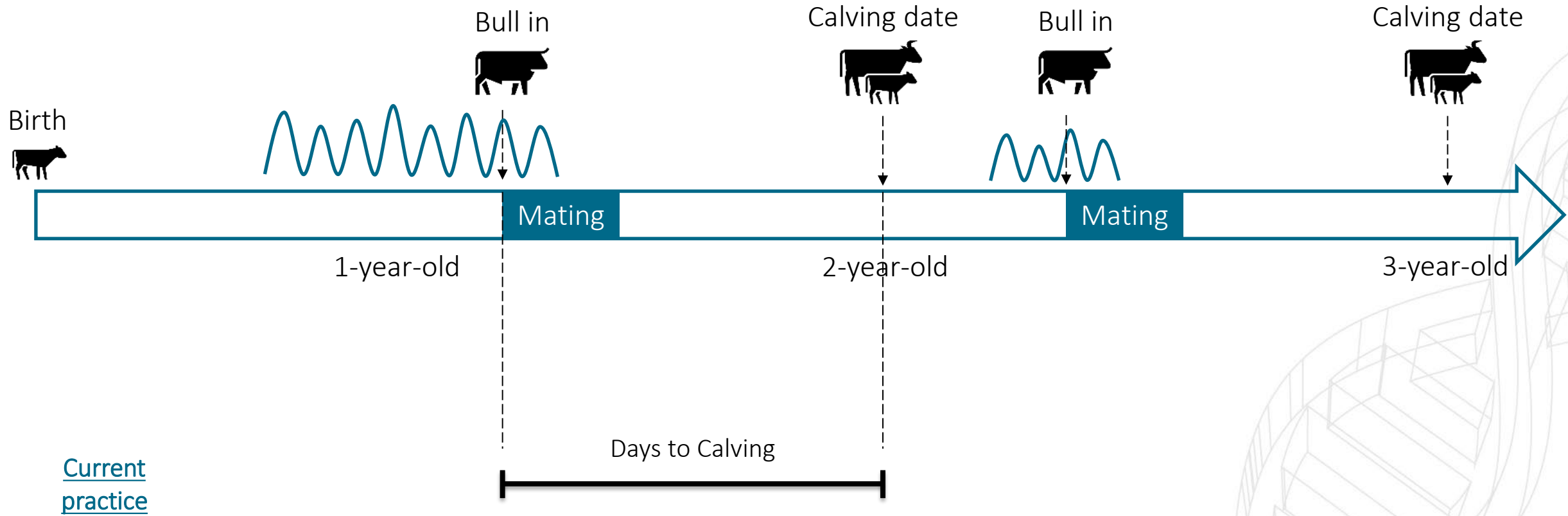
Spring



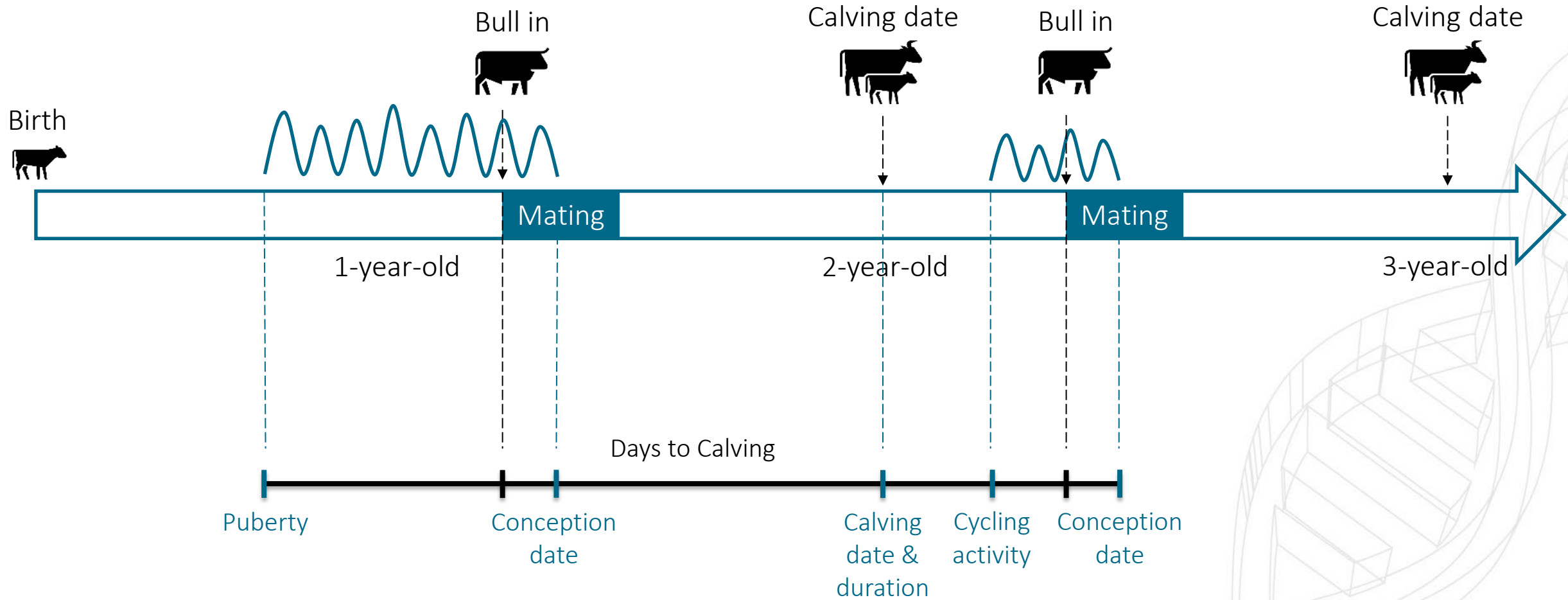
What we know



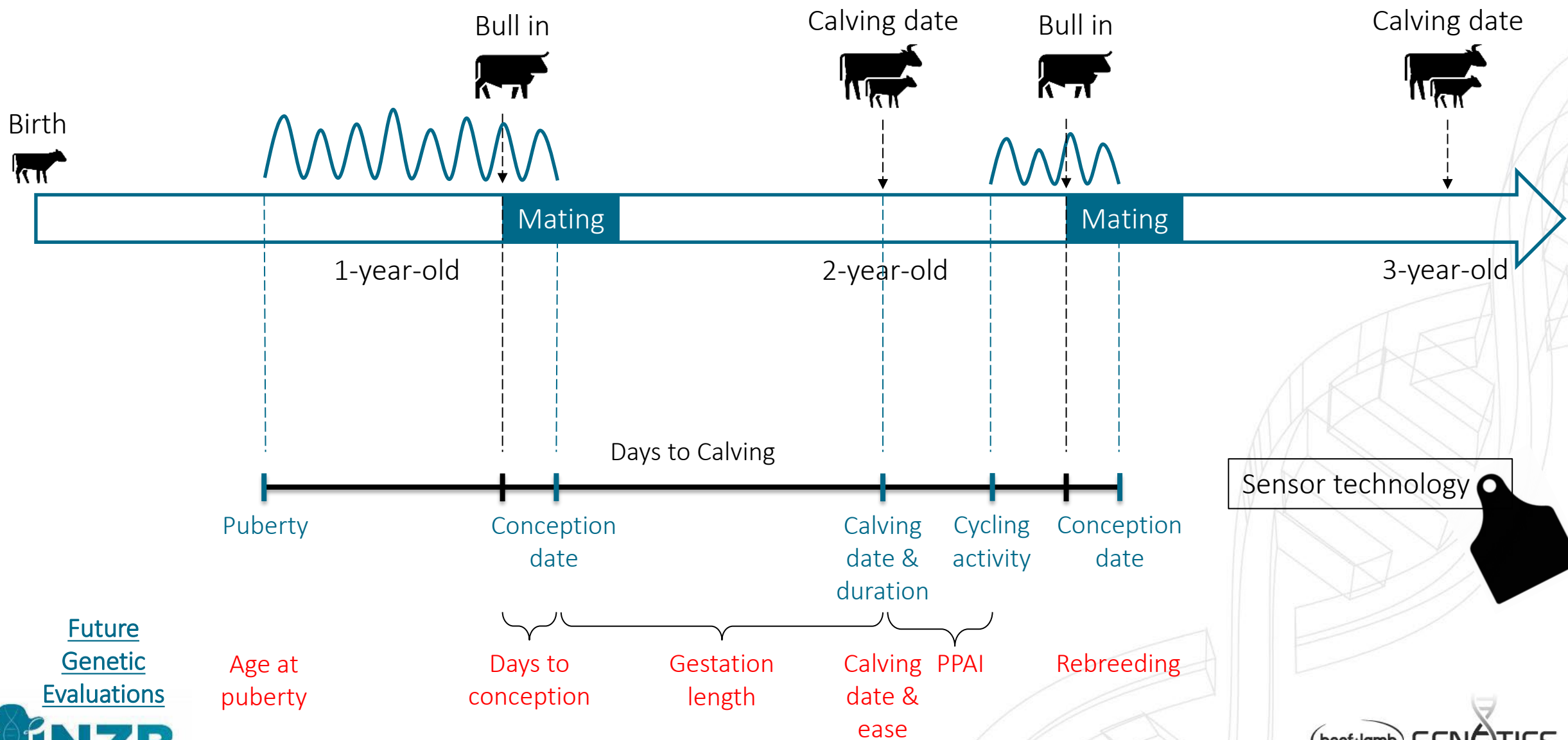
What we know



What we want



What we want



Future
Genetic
Evaluations

Fertility trial – Background

- Breaking fertility down into component traits (including age of puberty, conception date, calving date and postpartum anestrus)
- Feasibility assessment in extensive beef herds
- Exploring the genetics of fertility in first-calving heifers and 2-year-old rebreeding heifers

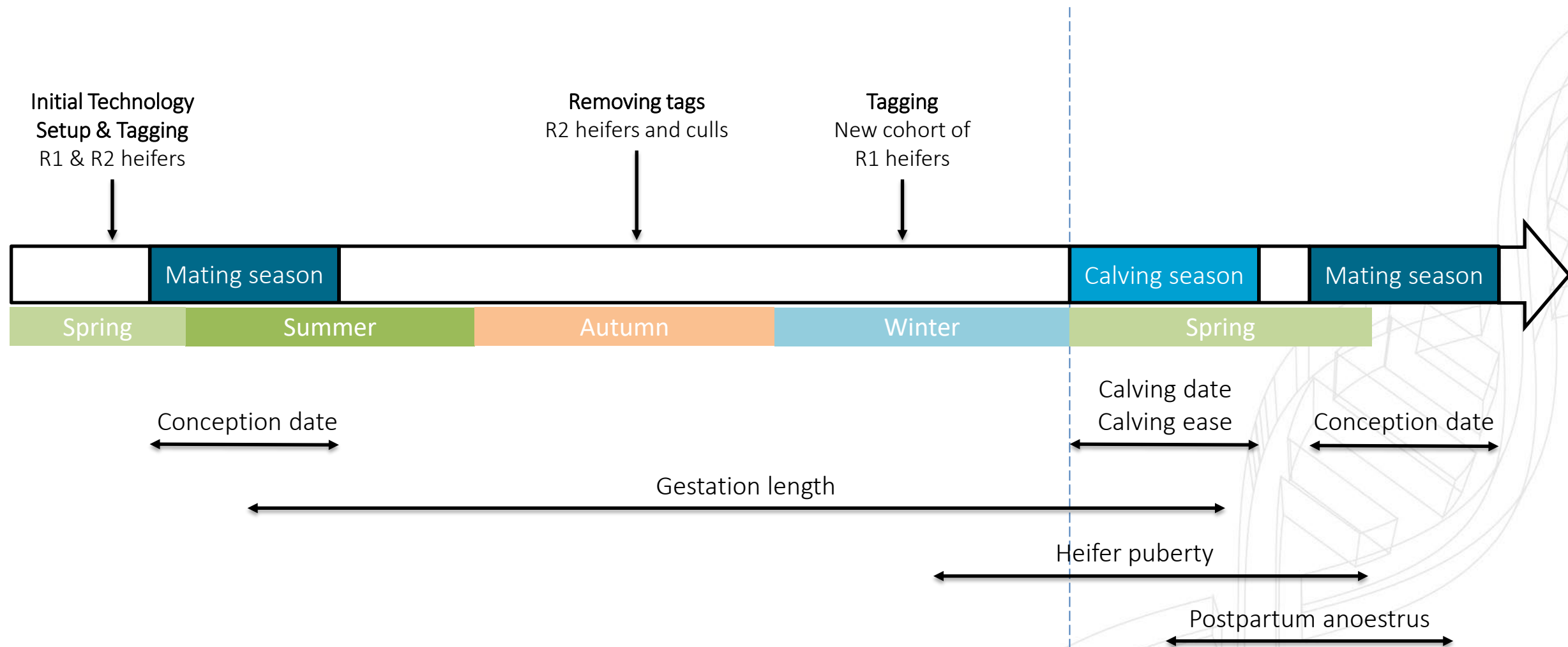
➔ Initial pilot trial

2 farms (~200 heifers per herd and year)

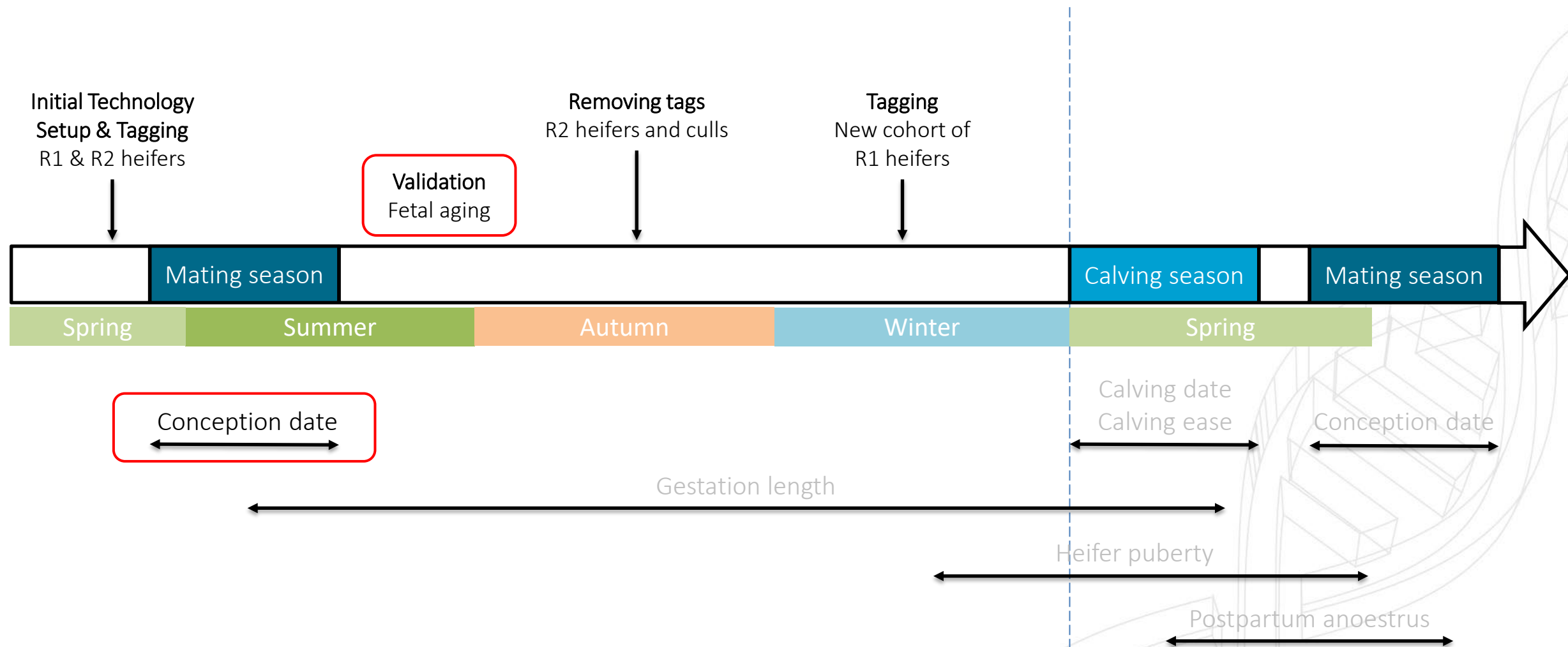
➔ (Potential) upscaled project

10-20 farms (~ 200 heifers per herd and year)

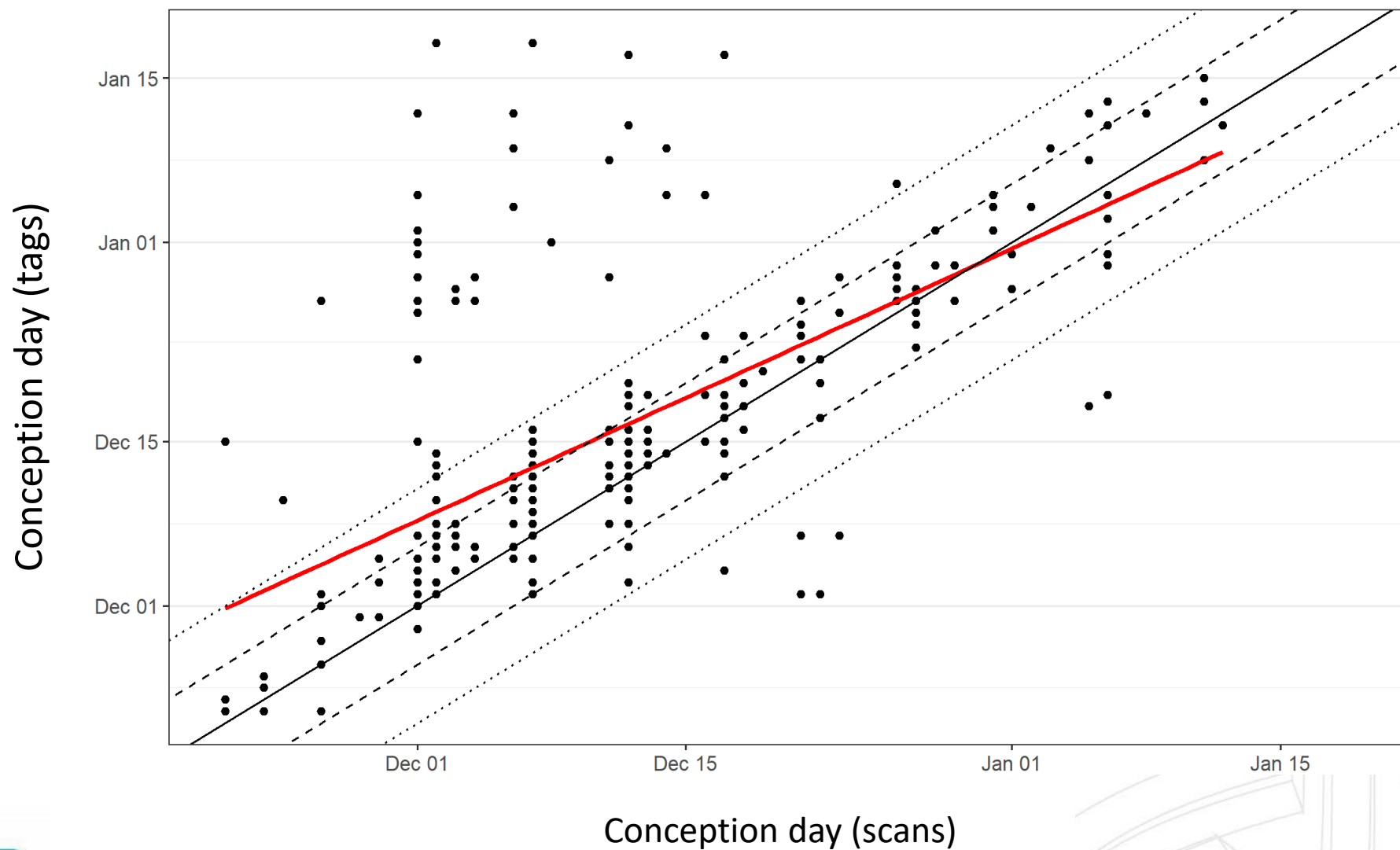
Fertility pilot – project design



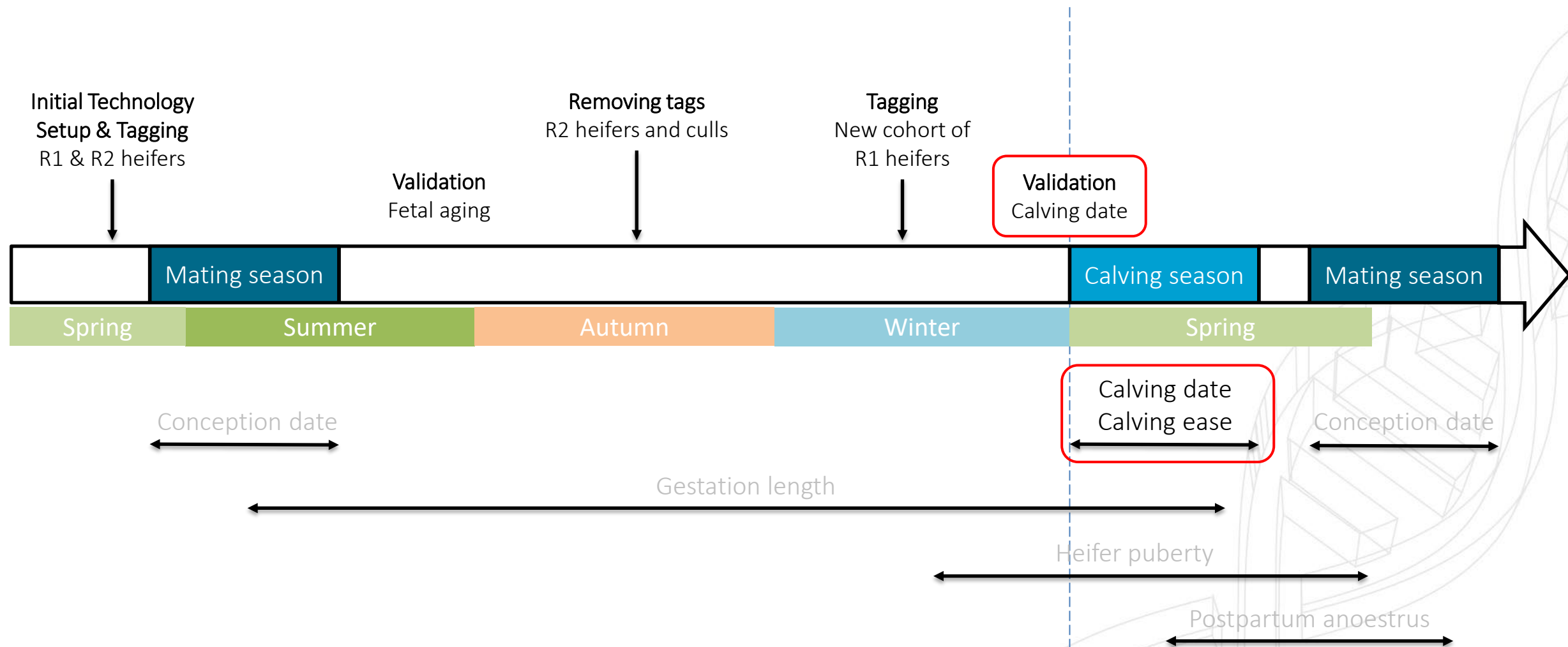
Fertility pilot – project design



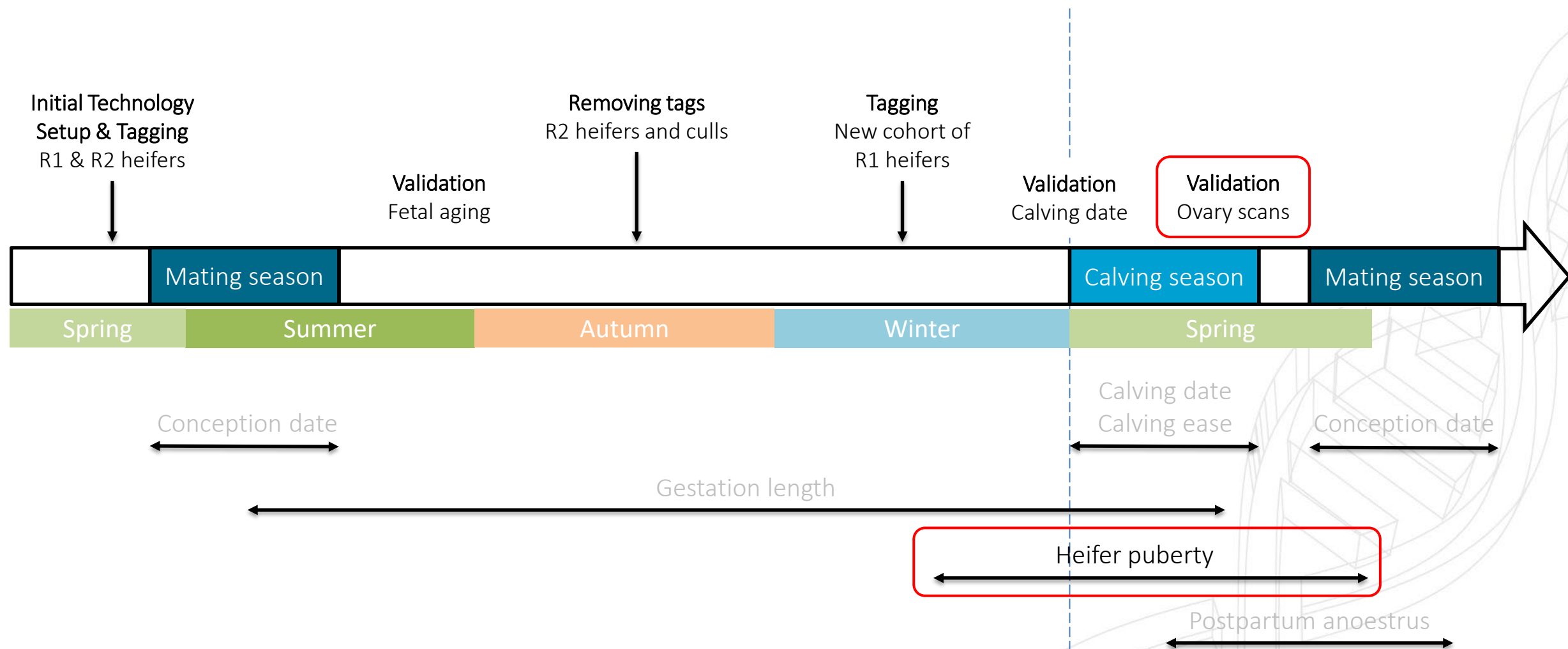
Fertility pilot – where we're at



Fertility pilot – project design



Fertility pilot – project design



Challenges & Opportunities

Challenges

- Technology setup and validation on extensive beef farms
- Development of algorithms to interpret the data
- Widespread implementation of the technology

Opportunities

- Tool to separate the effects of **days to conception** and **gestation length** for naturally mated cow herds
- Tool to provide good fertility insights
- Assess technology for prediction of **heifer puberty** and **calving date/ease**
- Incorporation of new fertility traits in future genetic evaluations

Ministry for Primary Industries
Manatū Ahu Matua



Thank you!



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