



IRISH CATTLE BREEDING FEDERATION

# EBI Research Updates



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# PHENOTYPIC EVALUATION OF FERTILITY TRAITS OF DAIRY CATTLE IN IRELAND INCLUDING NZ SYSTEM TYPE TRAIT DEFINITIONS

Katarzyna Stachowicz and Peter Amer

# Objective

- Consider implications of using calving season day (CSD) as a fertility trait rather than calving interval
- Consider implications of using mating in the first 21 days of mating season (PM21) as a selection criterion
- Consider implications of using gestation length as a selection criterion for improving daughter fertility.

# PSM & PSC definitions

- Planned Start of Mating (1<sup>st</sup> of April):
  - *McNaughton*: 4 of 7 days, 1<sup>st</sup> 2 consecutive
  - *Bowley*: average 1<sup>st</sup> 10% matings -1 day
- Planned Start of Calving (1<sup>st</sup> of January):
  - *Bowley*: average 3-10% calvings - 3 days
  - *InCalf*: 2 consecutive weeks where previous had no calvings and either:
    - A. calvings 1<sup>st</sup> week << 2<sup>nd</sup> week, PSC=1<sup>st</sup> day 2<sup>nd</sup> week
    - B. calvings 1<sup>st</sup> week >> 2<sup>nd</sup> week, PSC=3 days after start of 1<sup>st</sup> week

# Fertility phenotypes

- ▣ Percent mated first cycle PM21 (binary)
- ▣ Mating season day MSD (continuous)
  
- ▣ 6 week calving CR42/56 (binary)
- ▣ Calving season day CSD (continuous)
  - Heifers
  - Cows

# Recommendation

- Estimation of variance components for NZ-type fertility traits in seasonal herds
  - Heritabilities
  - Correlations with:
    - Gestation length
    - Calving interval
    - Age at first calving
    - Survival
    - BCS
    - Milk yield
- Crossbred evaluation
- Between countries correlations

# Health Sub-index

- Work currently underway with Roel Veerkamp into evaluations for lameness and mastitis
- Use lameness data collected on farm
- Better using SCC data as a predictor of mastitis
- E.g.,
- Mean SCC in different stages of lactation
- Presence of infection
- Severity of infections
- Number of peaks during lactation

# Next Steps

- Work will commence on the parameter estimation for fertility
- Work on-going with Health Sub-index
- Rollout for EBI in Autumn 2017