



Maximising Dairy Genetic Merit with Sexed Semen – 2024 Update

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¹Teagasc Moorepark

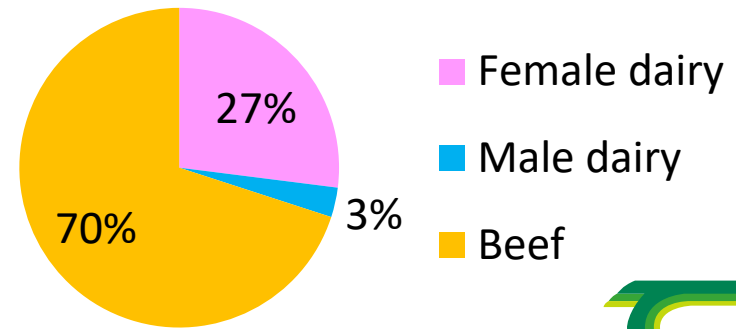
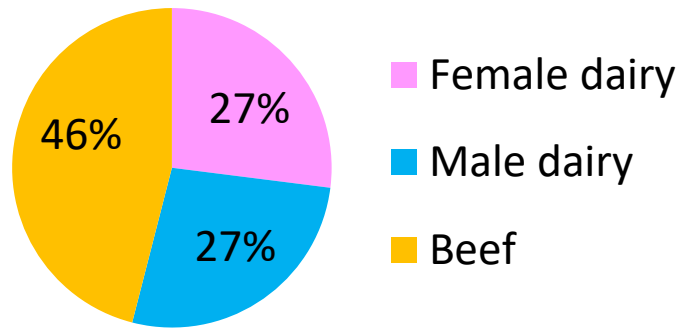
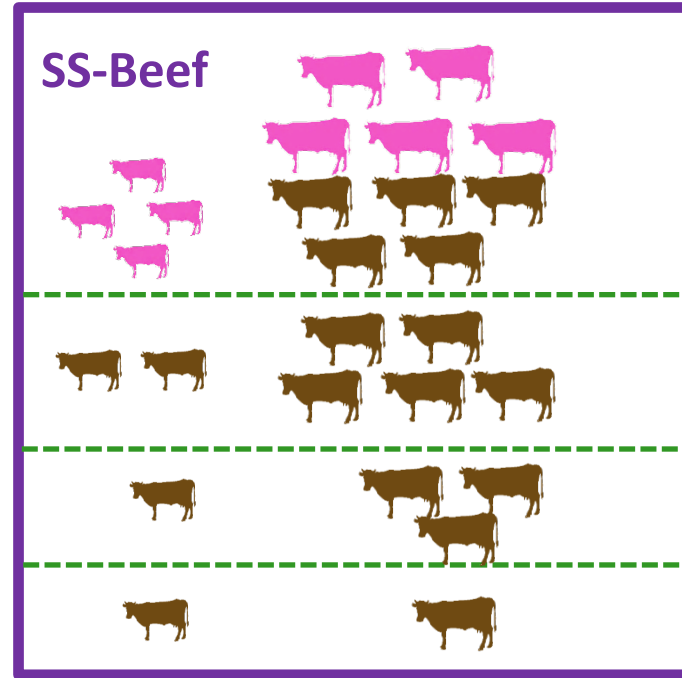
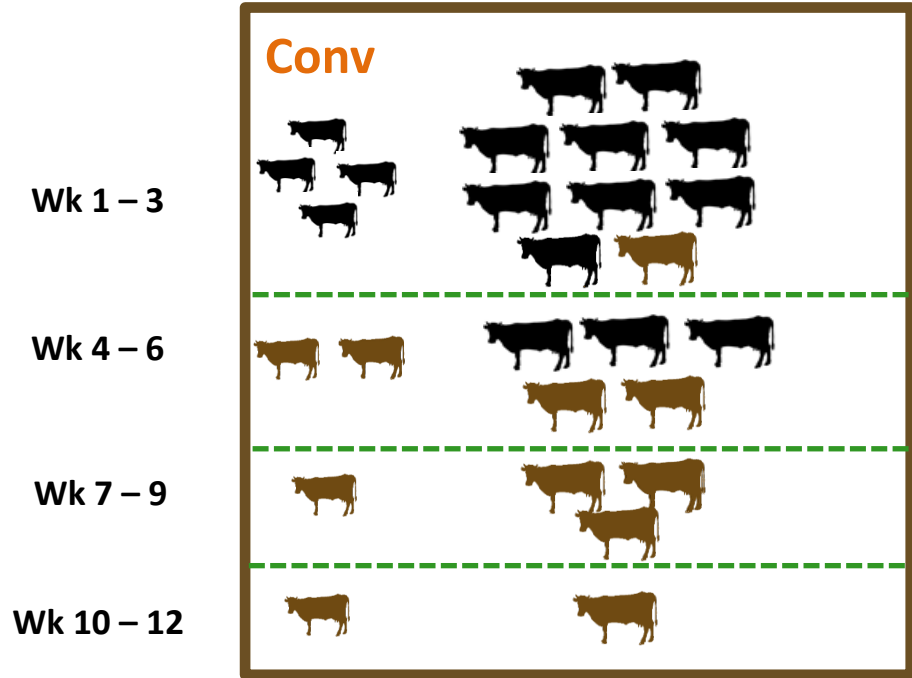
²Irish Cattle Breeding Federation

ICBF Dairy Breeding & Genetics Conference 2024

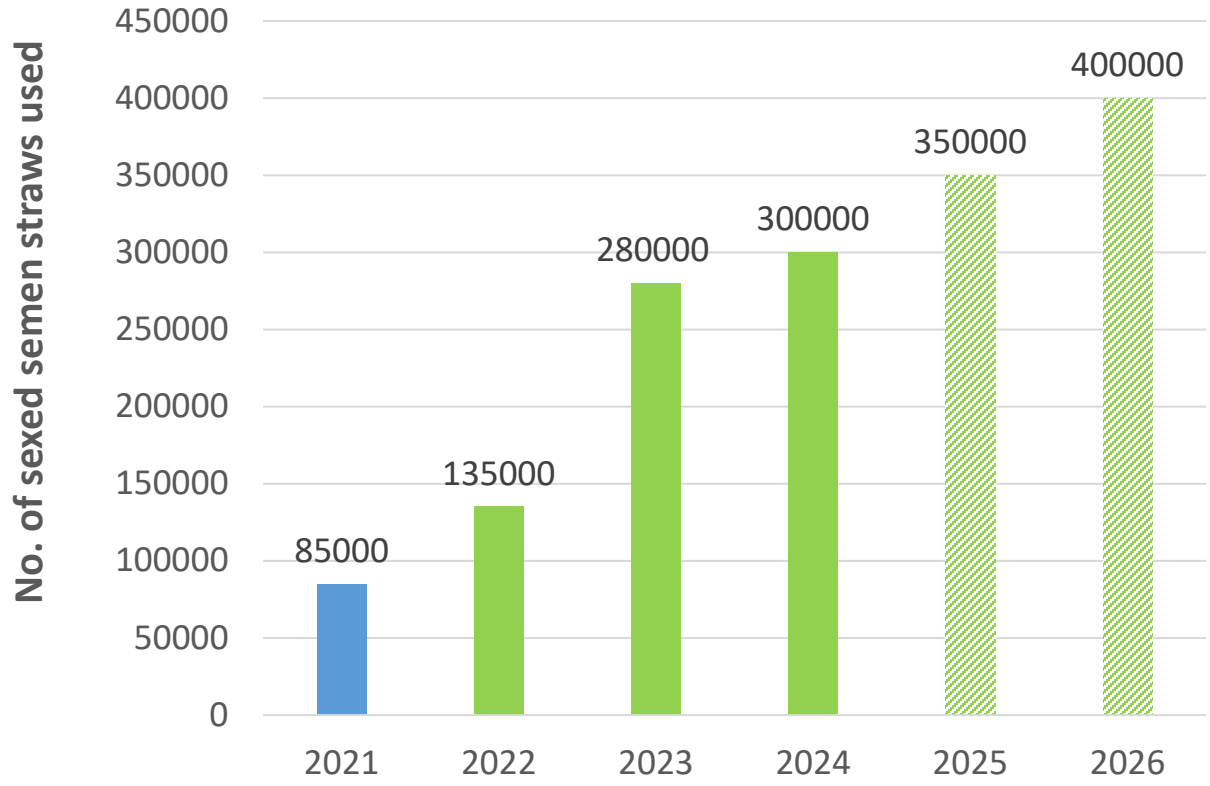


Changing herd breeding strategy

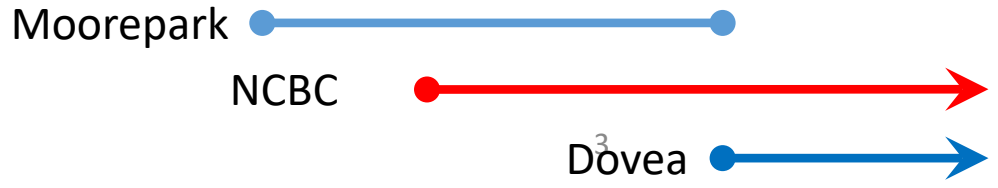
 Conv. dairy semen
  Conv. beef semen
  Sexed semen



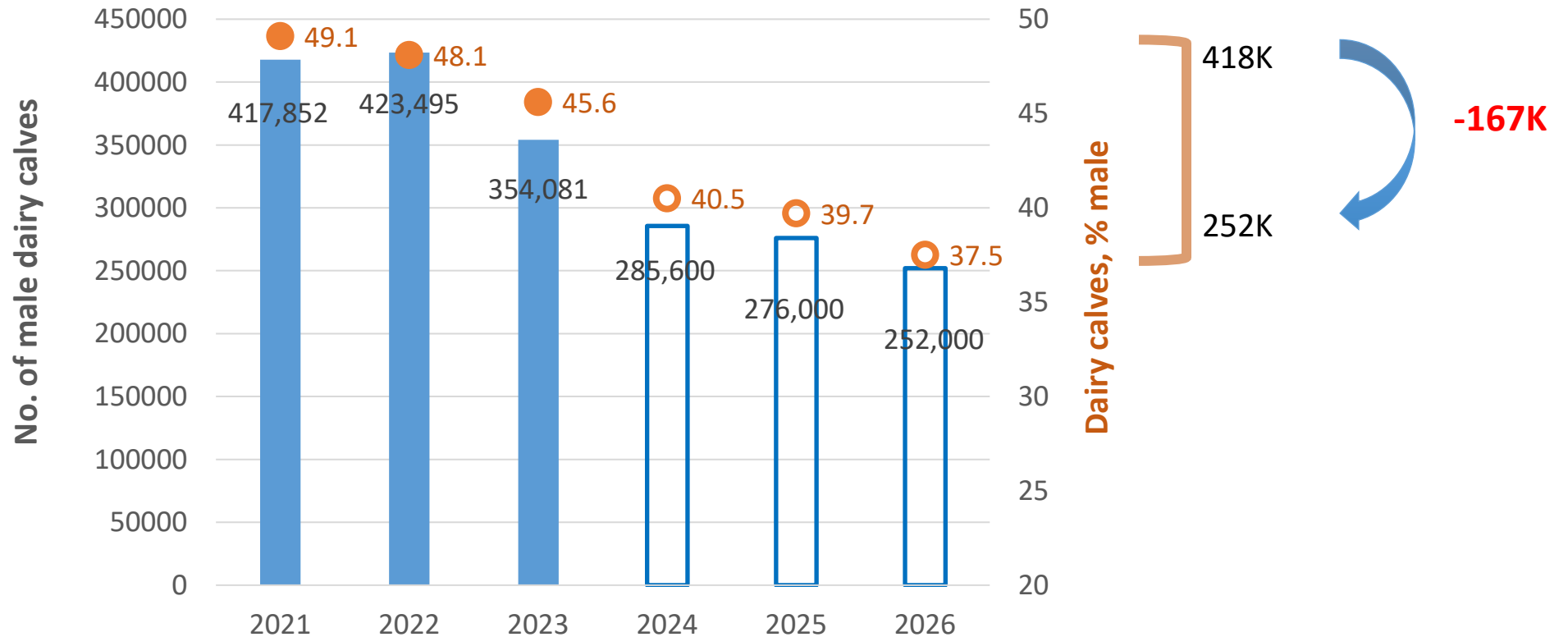
Recent trends in estimated sexed semen usage IE



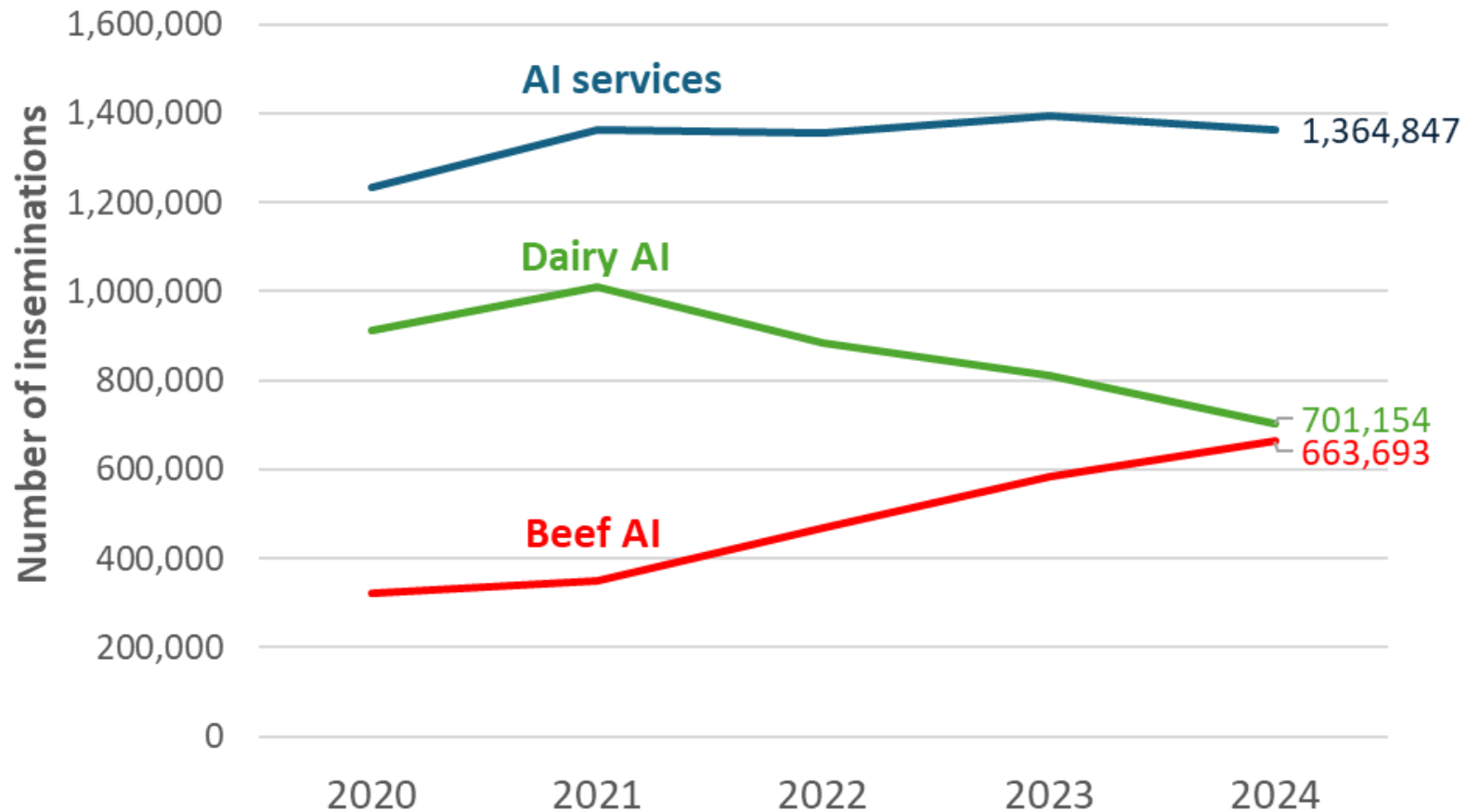
Sexing Technologies Labs



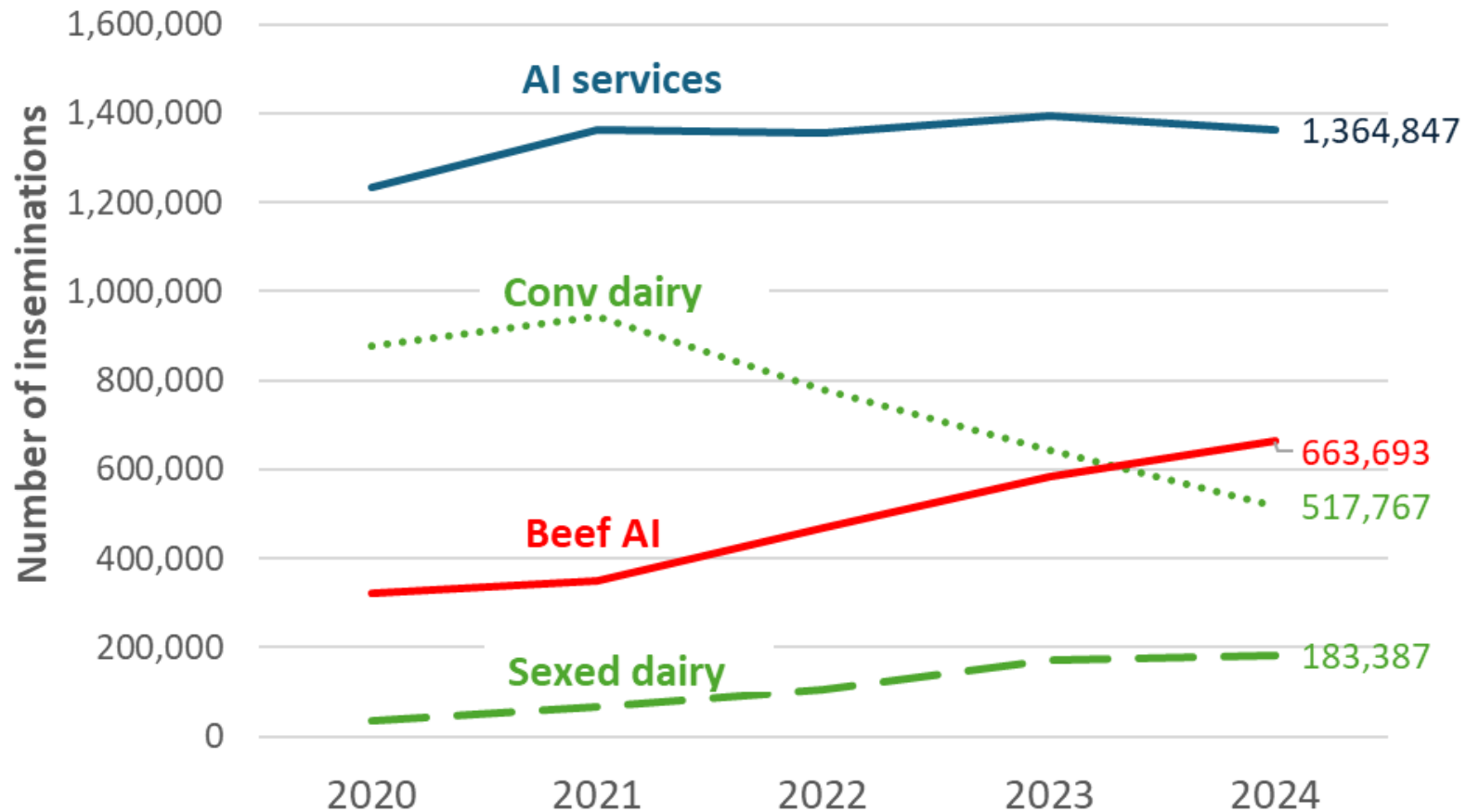
Impact on dairy calf crop: n and % male 2021 to 2026



AI services 2020 to 2024 – HerdPlus

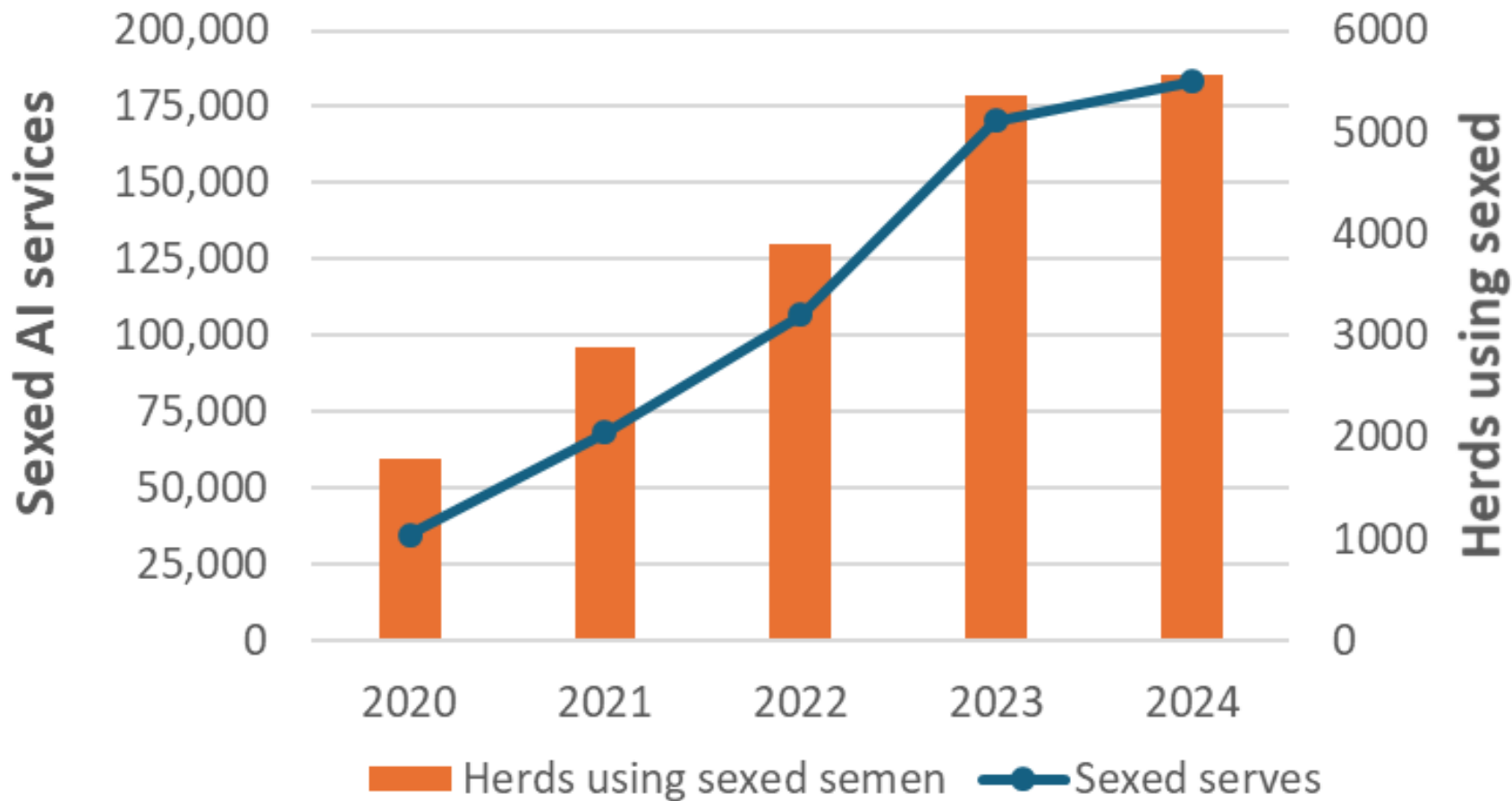


AI services 2020 to 2024 – HerdPlus

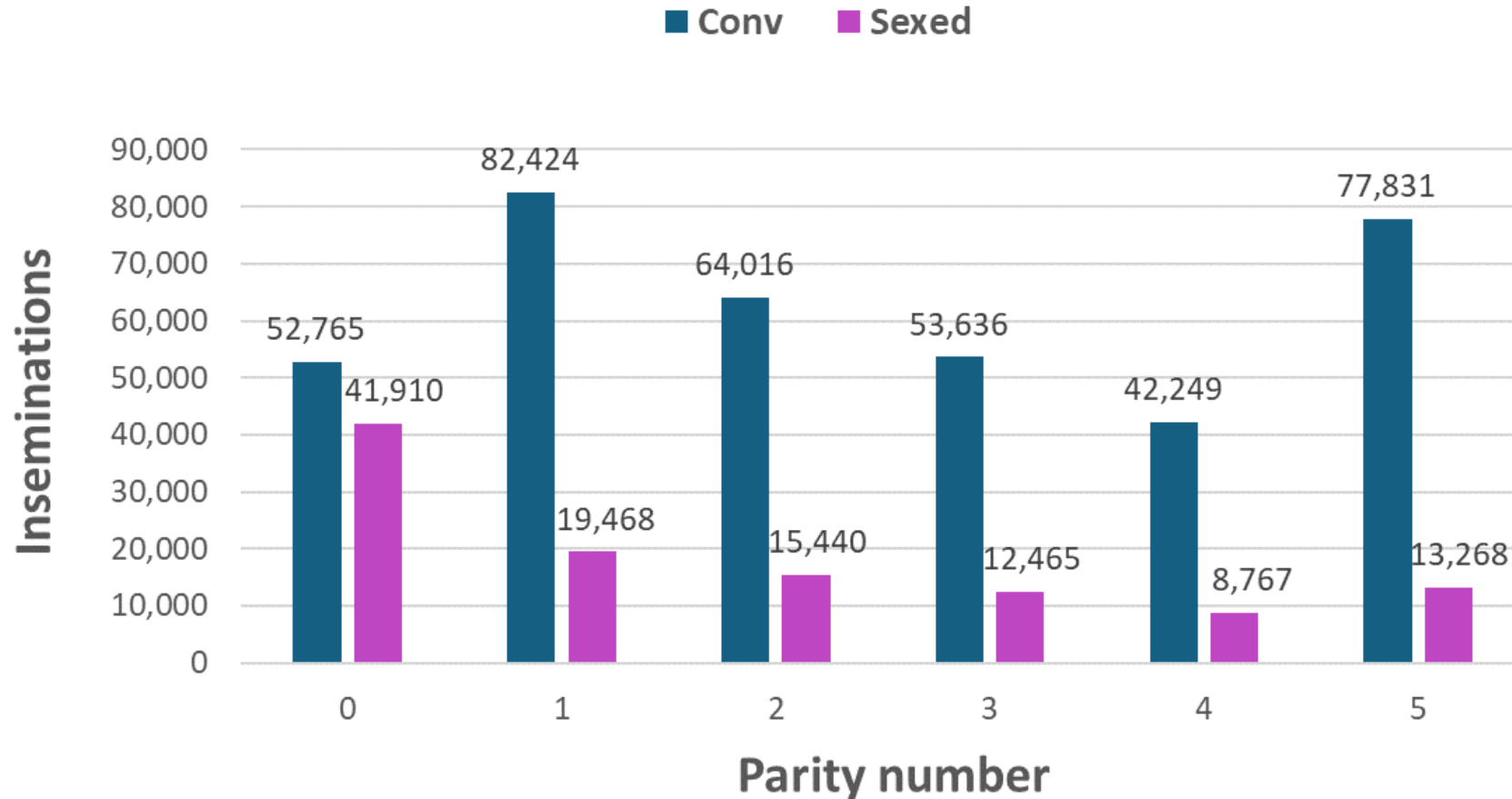


- Sexed Semen increasing
- More beef AI
- Trend expected to continue

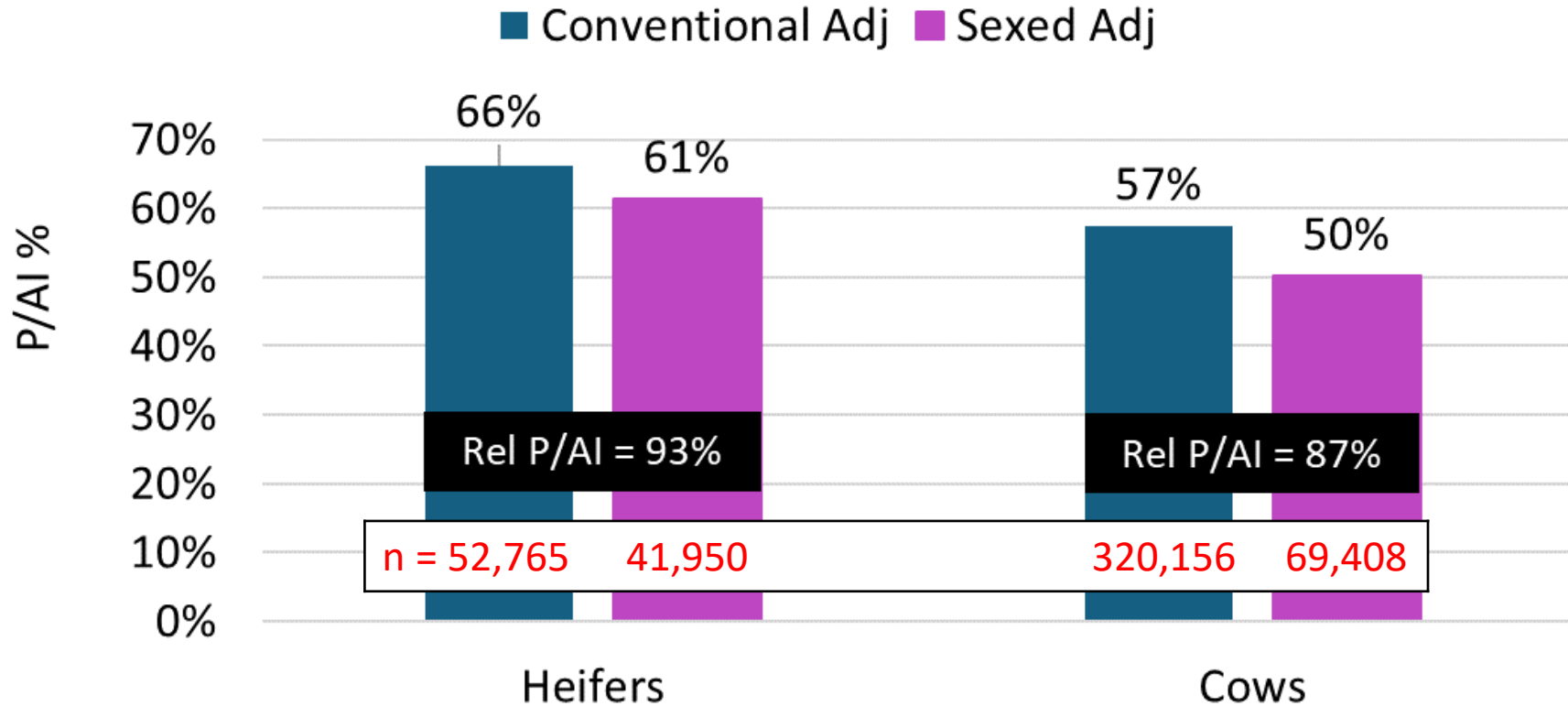
Sexed semen use 2020 to 2024 - HerdPlus



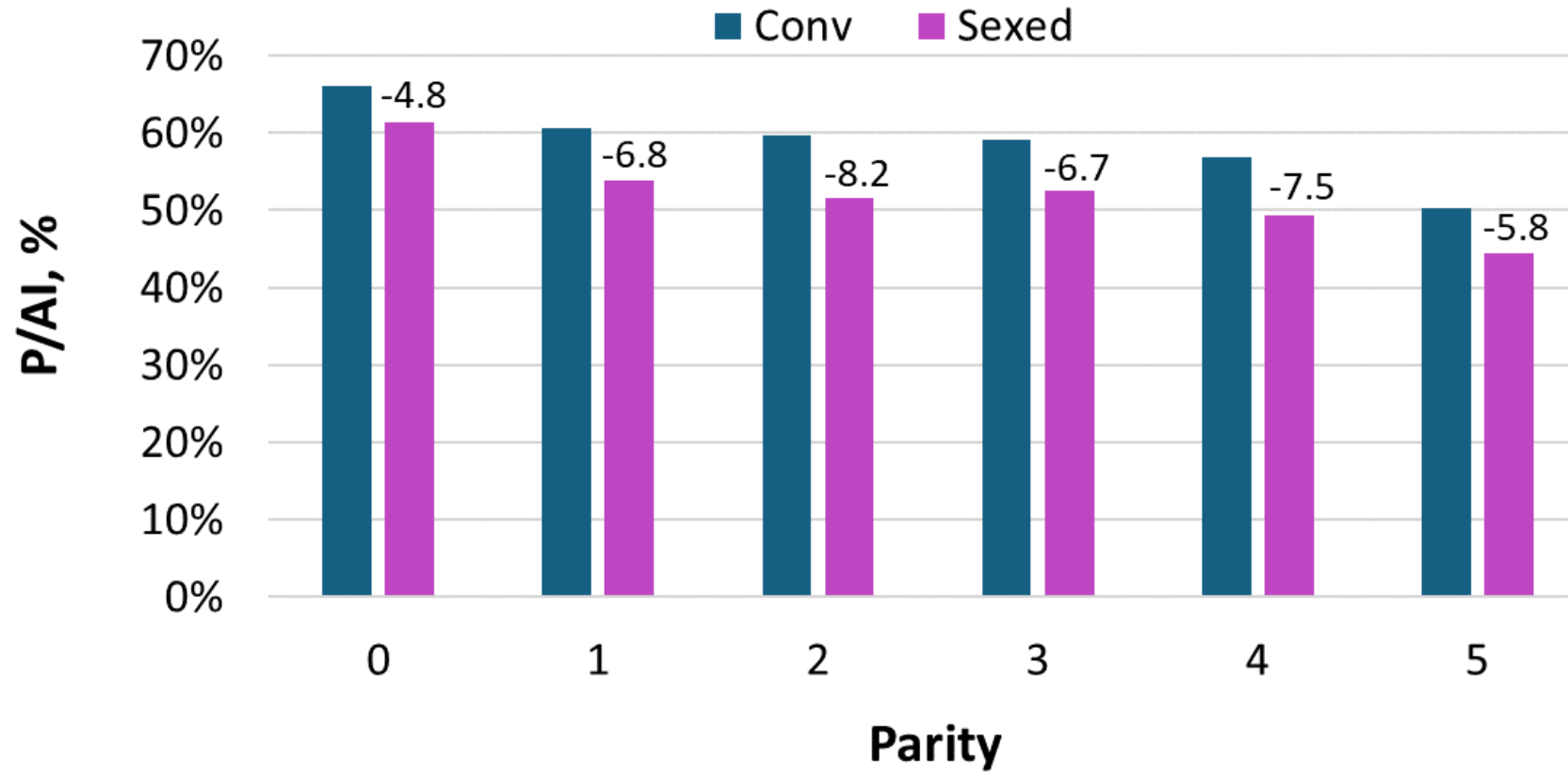
HerdPlus 2023 dairy sire first insemination counts



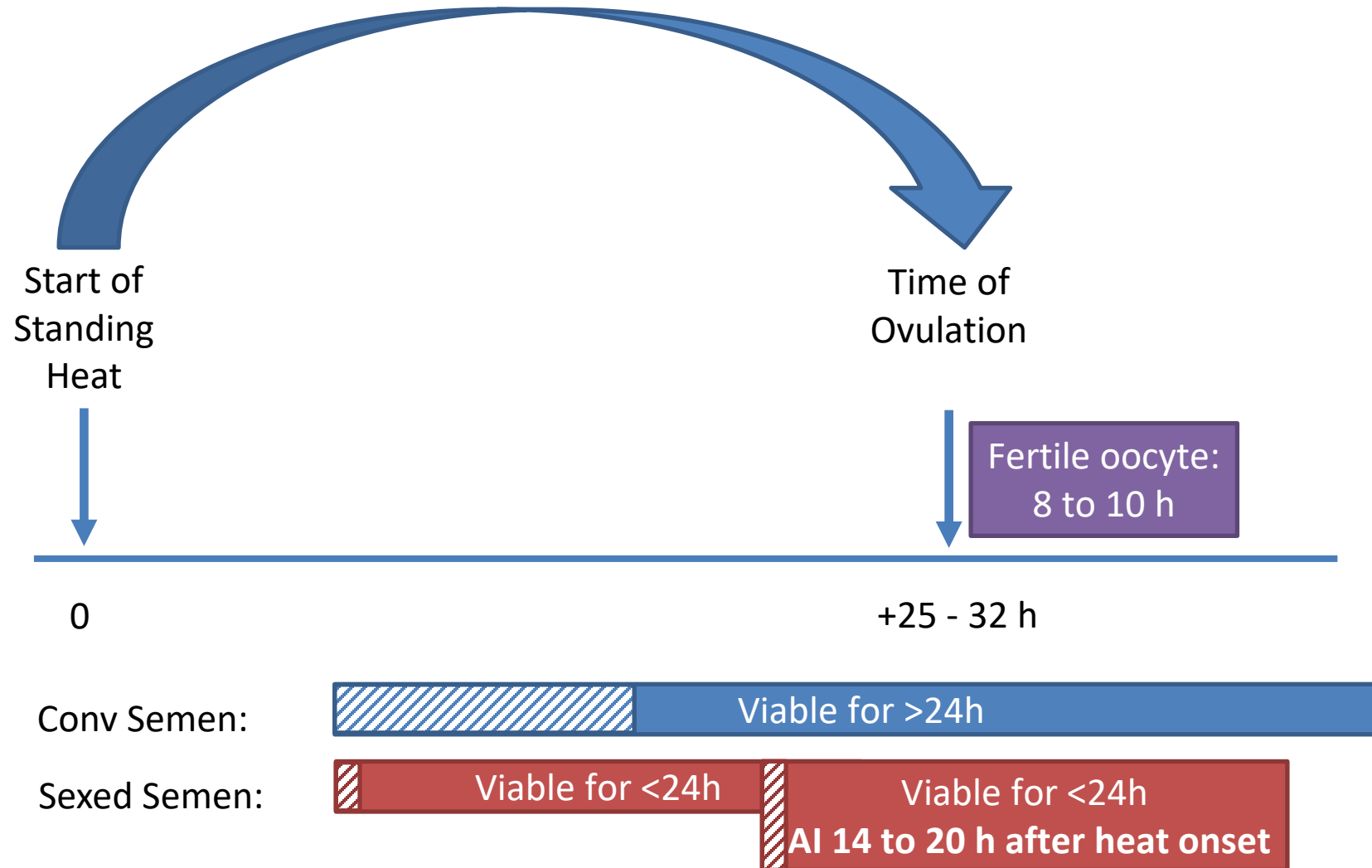
Pregnancy/AI at first service 2023 - HerdPlus



Parity effect on P/AI at first service 2023

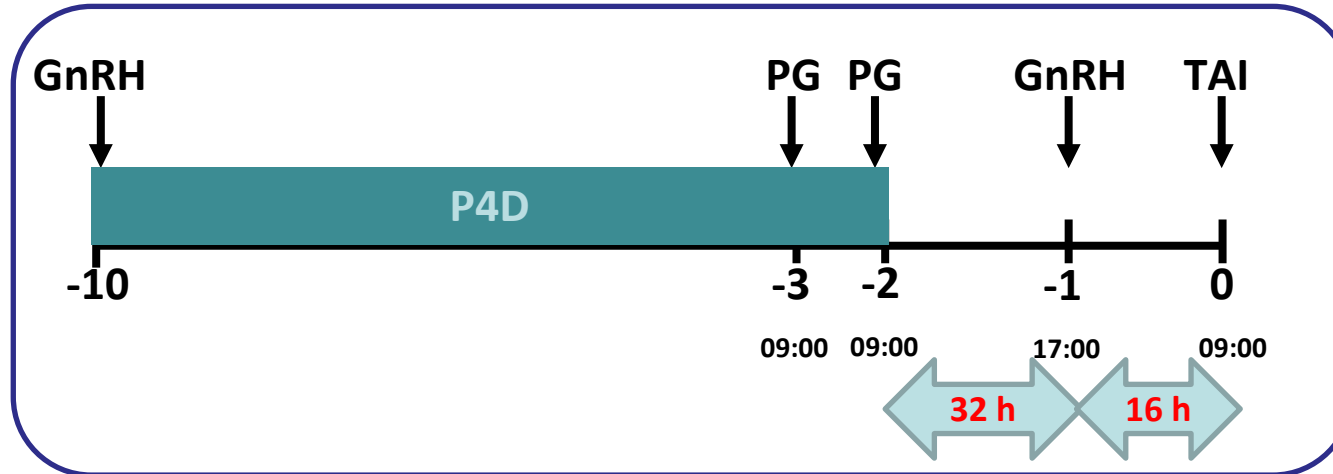


Heat behaviour and time of AI



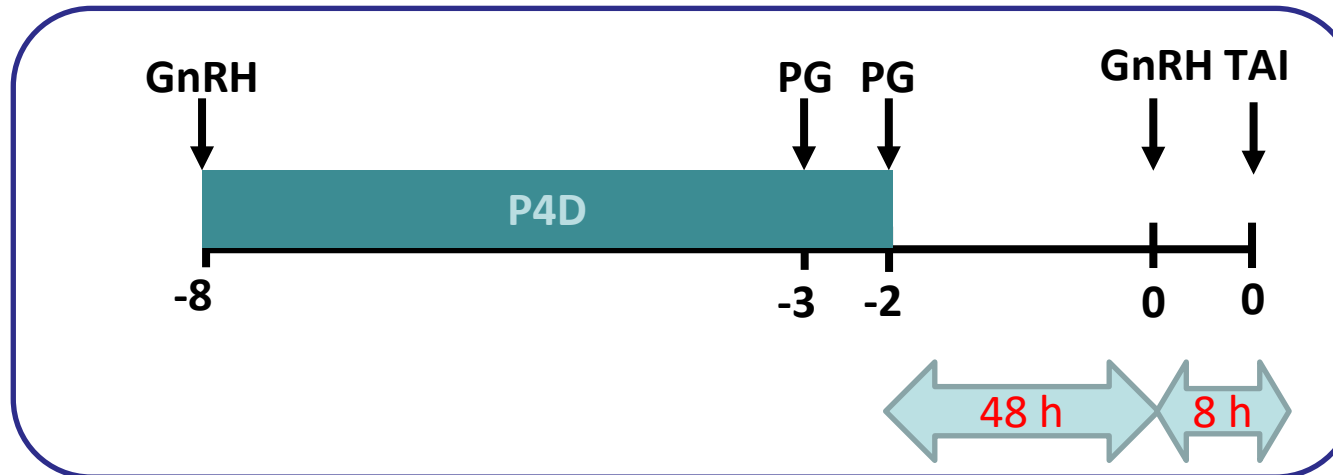
Timed AI protocols

COWS



5 interventions
4 injections, 1 P4D

HEIFERS



5 interventions
4 injections, 1 P4D

- GnRH:** Gonadotropin releasing hormone (e.g., Ovarelin, Receptal)
- PG:** Prostaglandin F_{2α} (e.g., Estrumate, Syncroprost, Enzaprost, Lutalyse)
- P4D:** Progesterone device (e.g., CIDR, PRID)
- TAI:** Timed artificial insemination

Advisory messages for dairy farmers

Sire and dam choice

- **Bulls**
 - Pick highest EBI bulls available
 - Use a large team of bulls
- **Dams**
 - **Top 50% of herd based on EBI**
 - Heifers
 - Target live-weight and BCS ≥ 3.25
 - Cycling regularly
 - Cows
 - Parity 1 to 4
 - >50 days in milk on day of AI
 - BCS ≥ 3.00
 - Cycling regularly
 - No postpartum disorders or uterine disease

When to use?

- First 3 weeks of the breeding season
- Within first 10 days if possible.

Timing of AI

- 14 to 20 h after heat onset

Fixed time AI

- Costly, but mitigates risk
- Facilitates targeted usage of sexed semen on MSD

Straw handling on day of AI

- Organise sexed straws into one goblet
- Thaw 2 sexed semen straws at a time MAX
- Thaw straws at 35 to 37 °C for 45 seconds
- Load straws into pre-warmed AI guns, keep warm.
- Deposit semen in uterine body
- Complete inseminations within 5 mins

Conclusion

- Sexing Technologies Laboratories in Ireland
 - ✓ Moorepark, now closed
 - ✓ NCBC, Naas
 - ✓ Dovea, Thurles
 - ✓ Rapid growth in availability and usage of sexed semen
- Sexed semen is key technology for the Irish dairy industry
 - ✓ Fragile product, requires careful use
 - ✓ Fewer male dairy calves
 - ✓ Better EBI replacement heifers
 - ✓ Better DBI non-replacement calves
 - ✓ Improved sustainability metrics
 - ✓ Order straws early.....2 straws per heifer required