

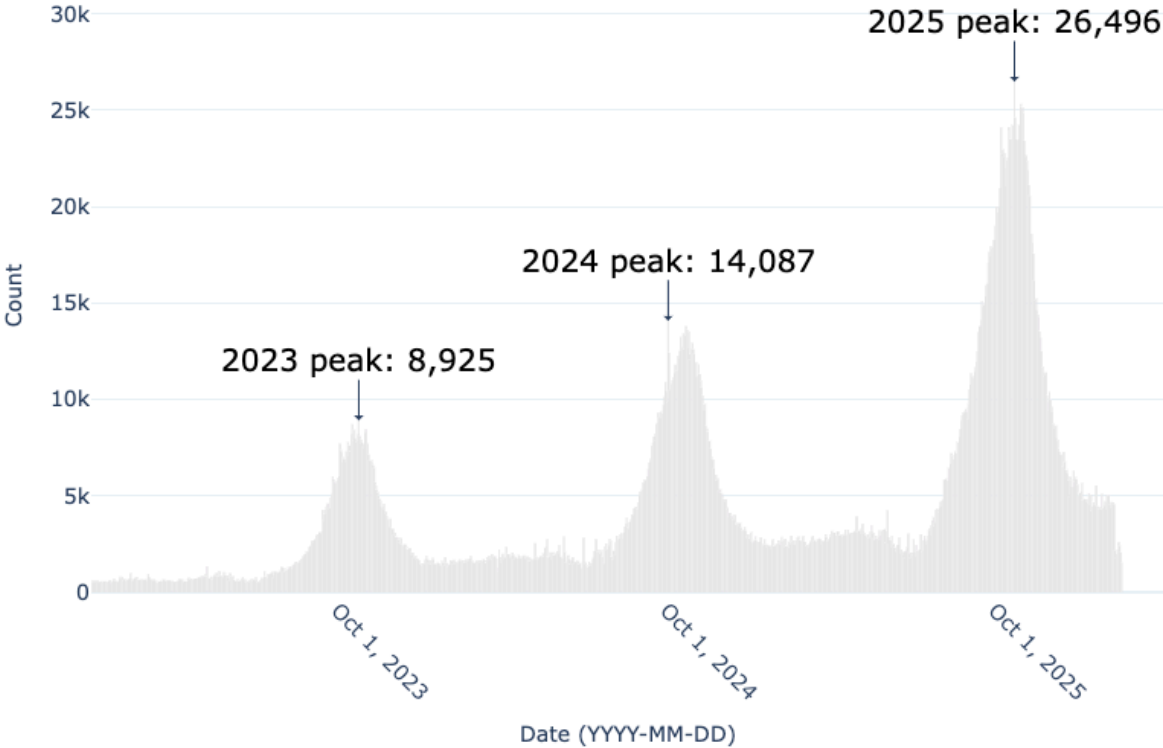
PPAI Informed Fertility EBVs

**Melissa Stephen, Ahmed Ismael,
Ric Sherlock, Bevin Harris**



Exponential Uptake On-Farm

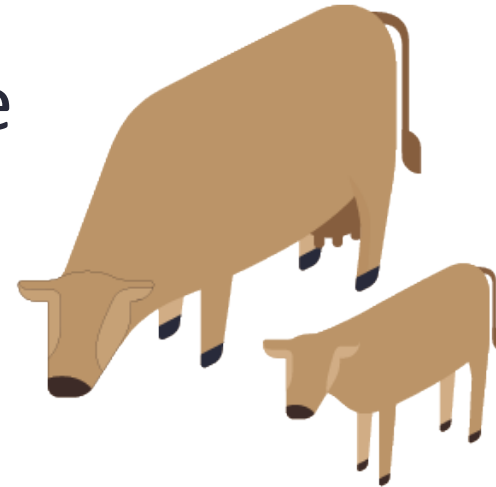
Count of Heat Events Received by Date



2025 681,558

Farmer motivations

- Hands-off farm management
- Re-enabling individualized animal care
- Improved reproduction performance
- Genetic evaluation



Information Gaps in Fertility Data

Heifers

- Age at puberty
- Estrous cycle length

Milking Cows

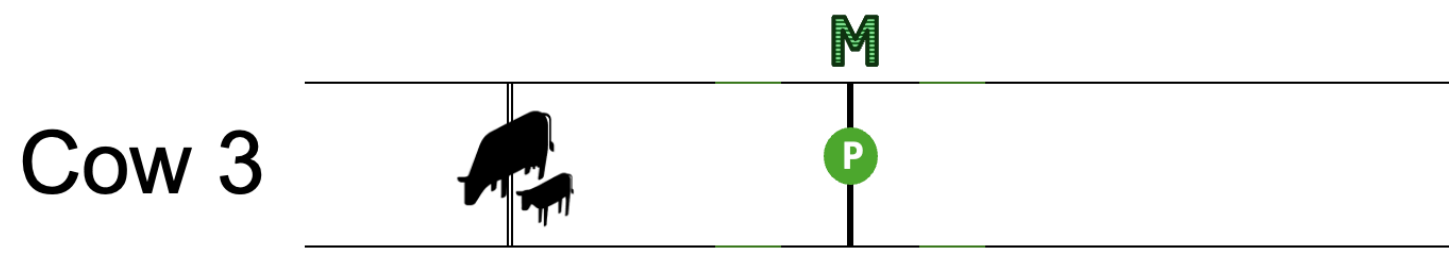
- **Pre-mating heats (calving to first heat)**
- Detection of management intervention
- **Early** pregnancy diagnosis
- Detection of pregnancy loss
- Identifying carry-over cows
- Identifying fertility-related culling
- Estrous cycle length



PM21	PR42	PPAI
Yes	-	-

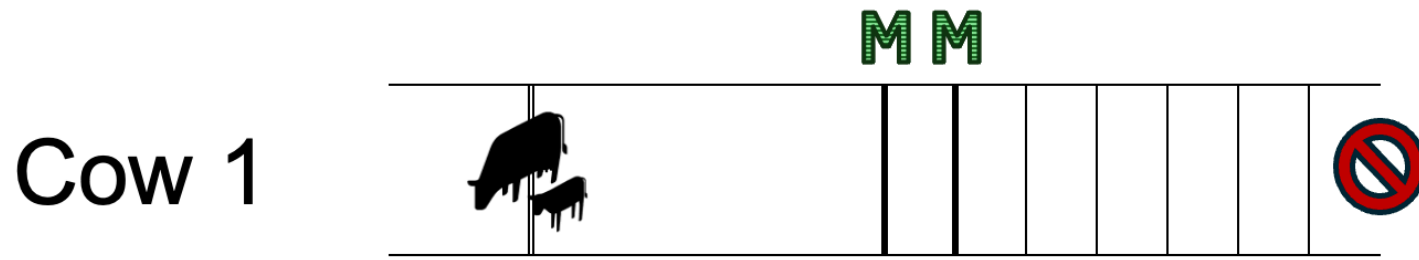


Yes	Yes	-
-----	-----	---



Yes	Yes	-
-----	-----	---

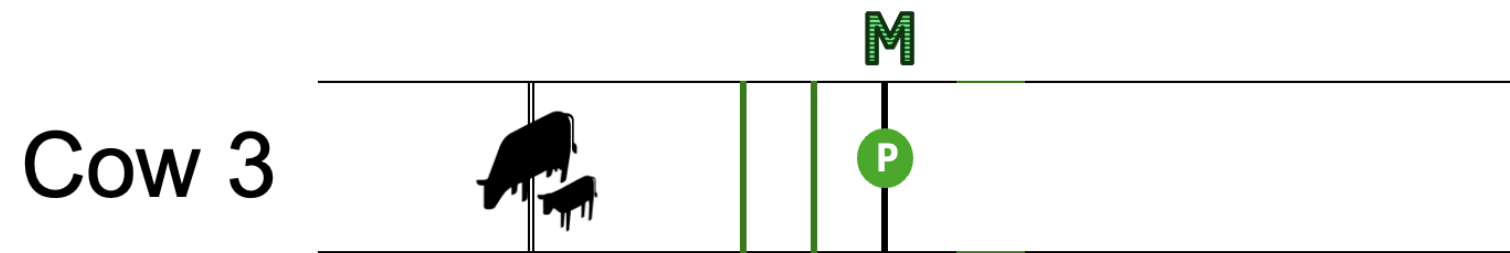
PM21 = Presented for mating within 21d
 PR42 = Conceived within the 42d of the mating period
 PPAI = Post-partum anestrus interval



PM21	PR42	PPAI
Yes	-	100



Yes	Yes	120
-----	-----	-----



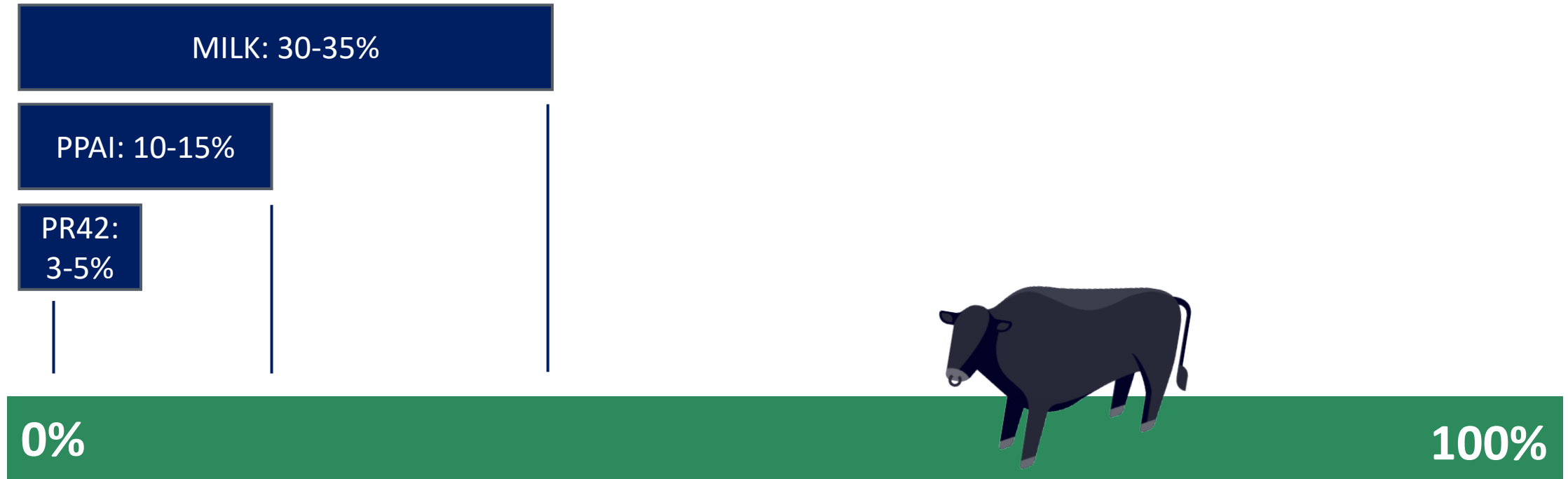
Yes	Yes	60
-----	-----	----

PM21 = Presented for mating within 21d

PR42 = Conceived within the 42d of the mating period

PPAI = Post-partum anestrus interval

Heritability



PR42 = Conceived within the 42d of the mating period

PPAI = Post-partum anestrus interval

Genetic Correlations

Traits	Genetic Correlation
PPAI with PM21	-0.64
PPAI with PR42	-0.84



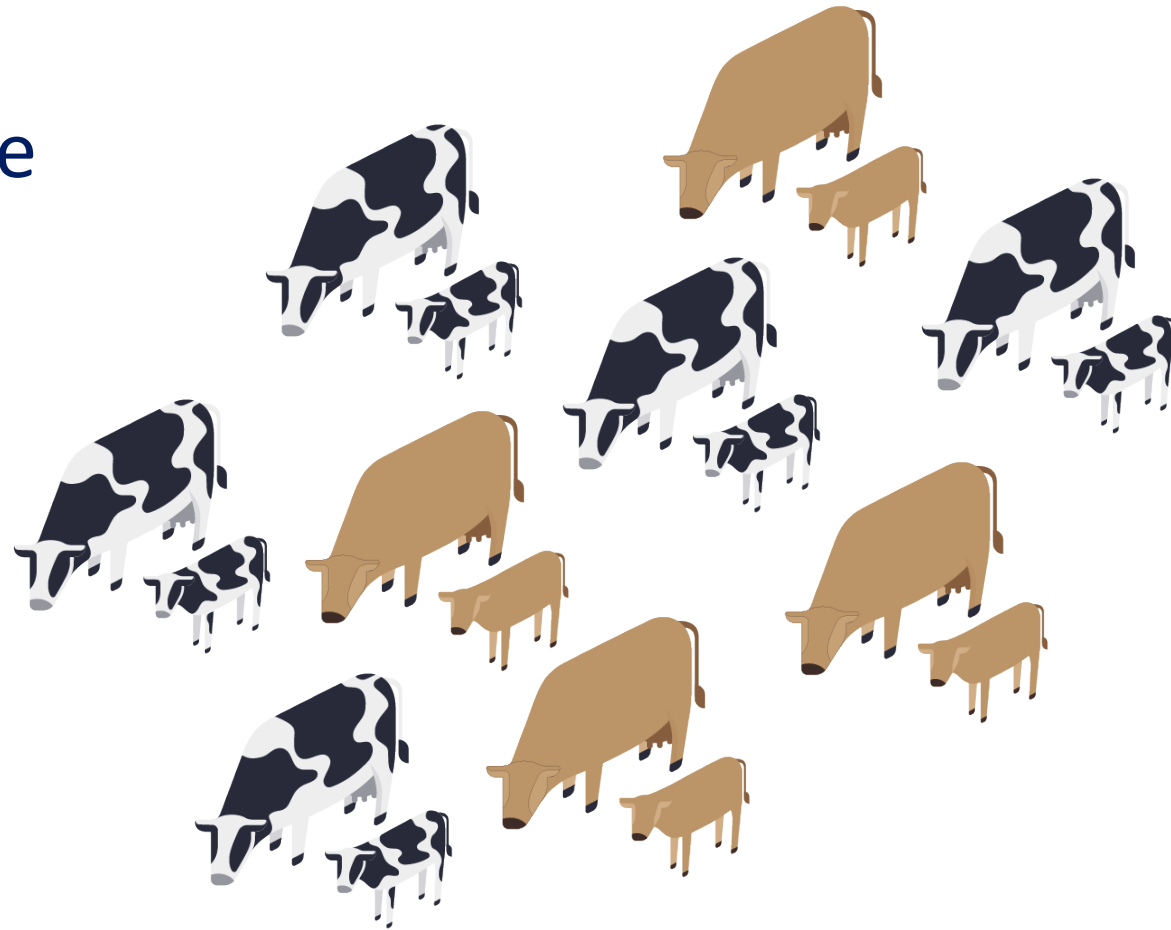
PM21 = Presented for mating within 21d

PR42 = Conceived within the 42d of the mating period

PPAI = Post-partum anestrus interval

Genotype/Phenotype cross over

- Around **200k cows** are equipped with wearables and genotyped



Next Steps

- Research gEBVs for internal use and testing
- Potential for national Implementation



