

Reducing the age at first calving for suckler heifers – a key profit driver for beef farms

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- The path to successfully reducing age at first calving
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 - Care of in-calf heifers
- Case study



Introduction

- 24% of beef heifers calve between 23 and 26 months of age
- reducing age at first calving from 36 to 24 months
 - 0.6 t reduction in CO₂eq per cow
- Major economic benefits in grass-based suckler systems
- Weight for age
- Bull selection



Common misconceptions

- Difficult to calve
- Won't go back in calf
- Will be stunted her whole life
- Won't last long in the herd

Age at first calving and lifetime suckler cow performance*						
Age at first calving (months)	Average subsequent calving interval (days)	Calving for a second time (%)	Average calving difficulty of bulls used (%)	Heifers calving unassisted (%)	Heifers reaching 5 th parity (%)	Mature cow weight (kg)
23-26	383	82	4.7	50	39	708
27-30	394	83	5.1	53	20	
31-35	392	87	5.2	58	4	
36-40	386	86	5.2	57	0	692
*Replacement heifers born in 2011 (131,077)						

Source: ICBF 

It's win-win!!

40ha, Spring-calving, calf-to-weaning system

- economic and environmental performance when calving heifers at 24 versus 36 months of age

Economics

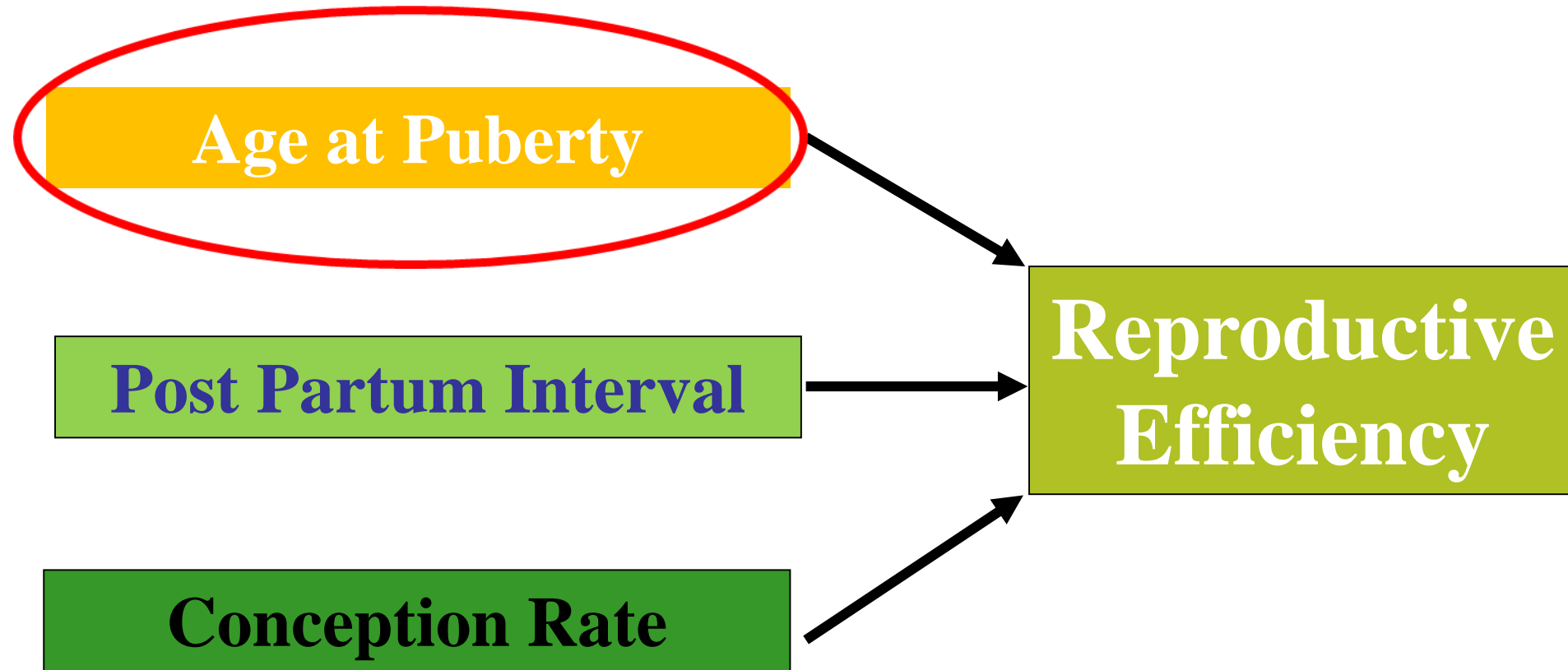
- 75% difference in net margin per cow
- reduced gross output
- €38/cow versus €152/cow

Environmental

- 12% difference in carbon footprint
- 11.2 versus 12.7 kg CO₂eq/kg liveweight



Factors affecting reproductive efficiency



Puberty in heifers

- **Definition:** The onset of sexual maturation
- **Major factors affecting age at puberty**
 - Breed
 - Plane of nutrition
 - Heterosis
- **Moderate Heritability** ➡ Can improve through genetics



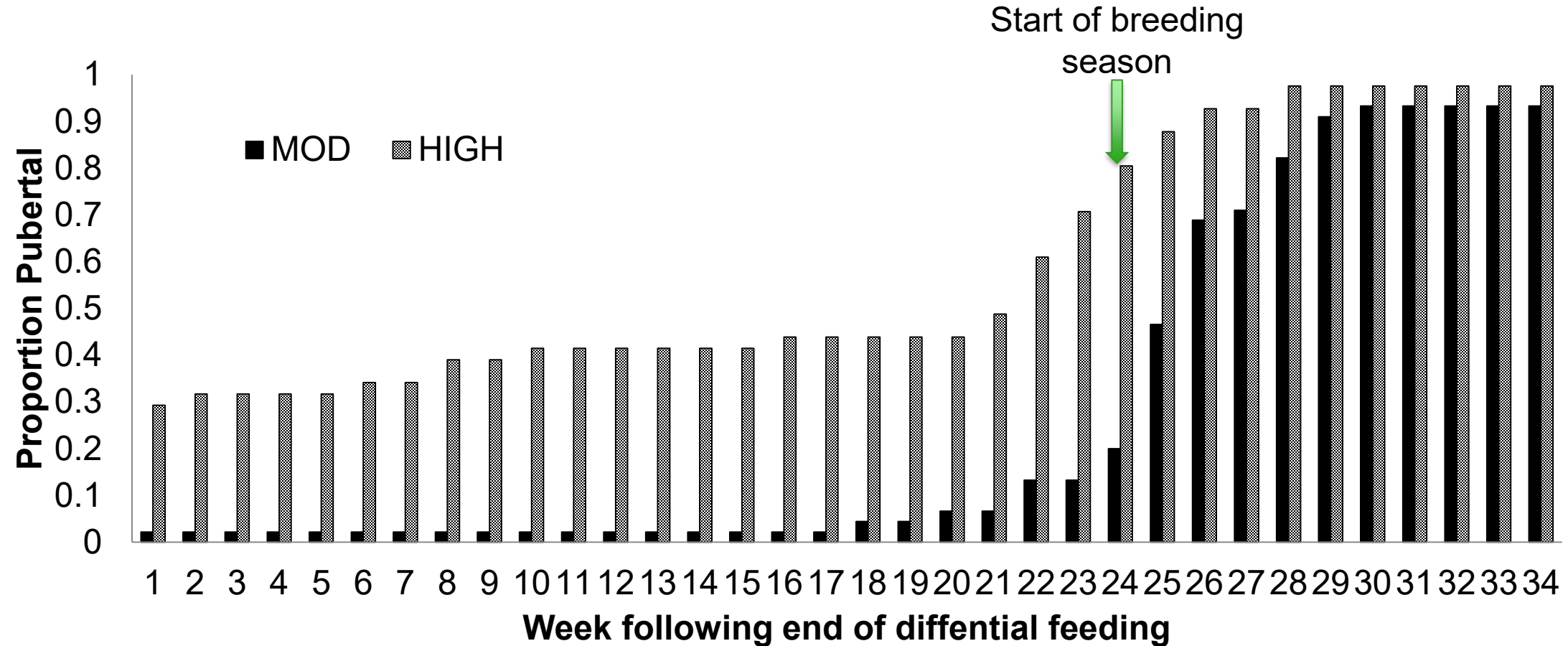
Effect of puberty status prior to breeding season on cumulative pregnancy rate (%) after 6, 8, 10 or 12 weeks of breeding

Weeks Pubertal	No. heifers	6	8	10	12	1 st service conception rate
Yes	68	68	82	90	94	56
No	243	55	70	78	86	60

Heslin *et al.* (2018)

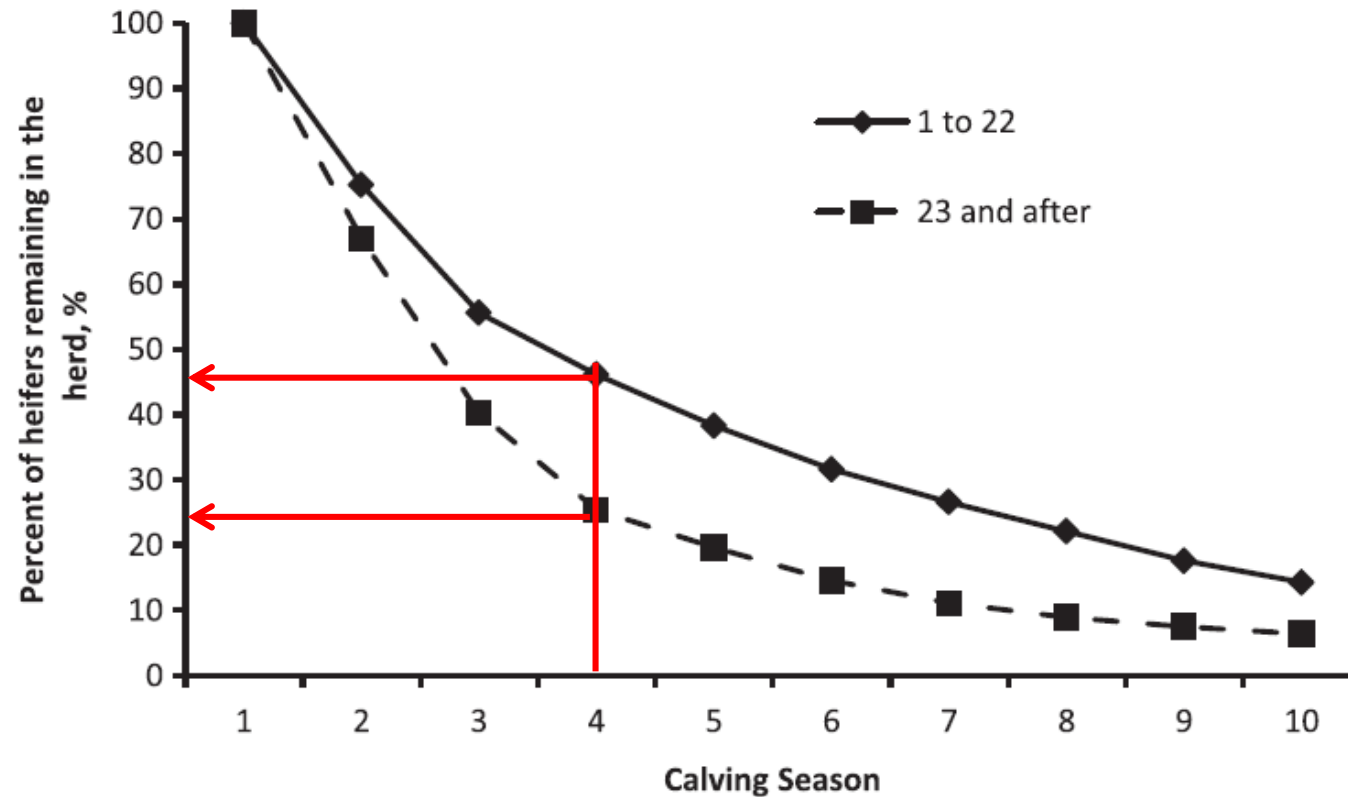
Similar results reported by Roberts *et al.* (2017) using data on 3623 peri-pubertal beef heifers collected over 10-16 years

Effect of plane of nutrition between 4.5 to 9 months of age on timing of puberty onset in Angus X Holstein-Friesian heifers



Heslin *et al.* (unpublished)

Effect of timing of first calving (24 months) on cow longevity



Cushman *et al.* (2013)

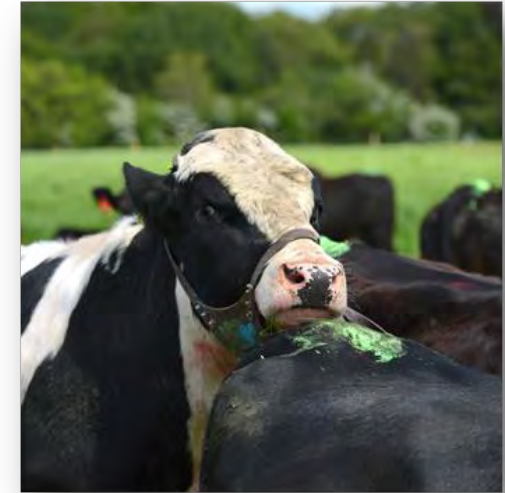
Rearing your replacement heifer

- Aim for pre-weaning average daily gain of 1.2 kg/day
- Cow must be 'milky'
- Pre-weaning is the most important time for influencing age at puberty

Differential feeding period	High plane of nutrition ADG	Low plane of nutrition ADG	Difference in age at puberty
Four to eight months of age	1.2	0.6	70 days
Eight to thirteen months of age	1.0	0.6	13 days
ADG = average daily gain (Heslin <i>et al.</i> , 2020).			

Breeding

- Target weight of 380 – 420 kg
- Bull selection is critical
- <8% calving difficulty with > 80% reliability
 - Stock bull vs AI
 - Good heat detection



Pre- and post-calving care

➤ Feeding pre-calving

- Moderate quality grass silage to appetite (65- 70% DMD)
- Minimum body condition score 2.75
- Pen separately to cows

➤ Post-calving and breeding

- Monitor body condition score
- Turn out to grass as soon as possible
- Good quality grass silage (> 70% DMD)
- Give priority to 1st calvers and thin cows



Summary

- Risks associated with reduced age at calving can be managed
- Early life growth and weight for age
 - Aim to calve early in the calving season
- Reduced carbon footprint
- More profitable



Shane Keaveney

Ballinlough, Co. Roscommon

Farm system

- 35.5 ha
- 37 Spring Calving Suckler Cows
 - Bulls <16months
 - Heifers <21-22 months
- Stocked at 160Kgs organic N/ha



Local Advisor : Charlie Devaney

Programme advisor: Gabriel Trayers

100% heifers calving between 22 – 26 months of age

Breeding 2022

- 12 Maiden heifers average 410kgs
- Vasectomised Bull + Chin Ball (hired)
- 10 sexed straws

Results

- 10 Heifers in Calf to AI (6 weeks)
 - 6 to sexed semen
 - 9 sexed straws used
 - 4 conventional AI

Cost

- €42/sexed ; €300 bull hire; €25 techn
- 2023 AI on some Mature cows ?

HerdPlus®
Profit through Science

Weaning Performance Report

Animals born between 01/01/2021 - 01/12/2021

Print

22-FEB-2022

Herd Owner:

SHANE KEAVENEY

Herd Number:

icbf



- Grass Focus – early turn out
- Forward Creep Grazing + 1kg
- Vaccinations & Dosing
- Gradual Weaning/Nose pads
- 2 Priority Groups
- Bulls 351kgs 1/11/22
- Females 312kgs 16/11/22
- Housed – lots space >3 m²
 - 73 dmd silage and 1kg meal

20340	9	287	1.23	569	€93	★★★★
40350	4	287 (Twin)	1.23	181	€115	★★★★★
40342	3	285	1.22	233	€131	★★★★★



Thank you,
Any questions?