

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

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- Advantages of reduced age at first calving
- The path to successfully reducing age at first calving
  - Age at puberty
  - Calving date
  - 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 CO<sub>2</sub>eq 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 <sup>th</sup> 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

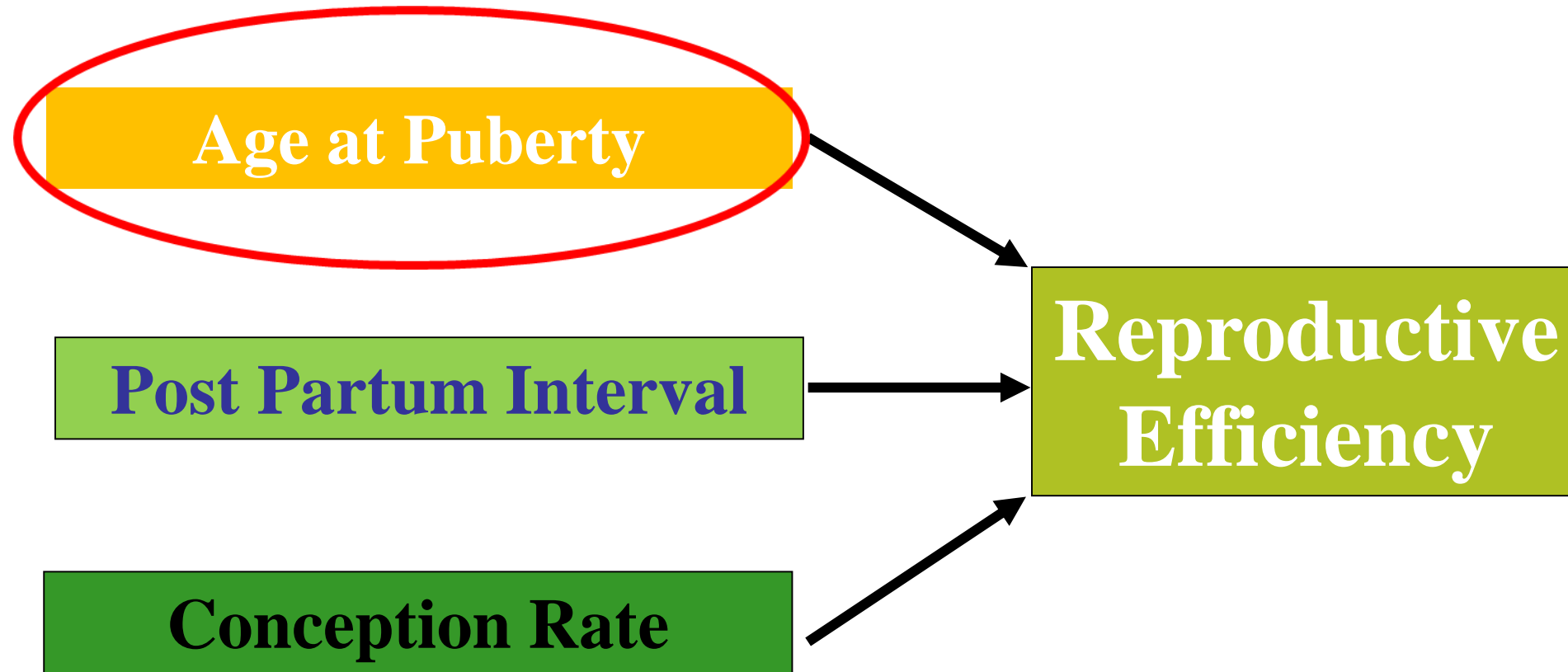
- 75% difference in net margin per cow
- reduced gross output
- €38/cow versus €152/cow

## Environmental

- 12% difference in carbon footprint
- 11.2 versus 12.7 kg CO<sub>2</sub>eq/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

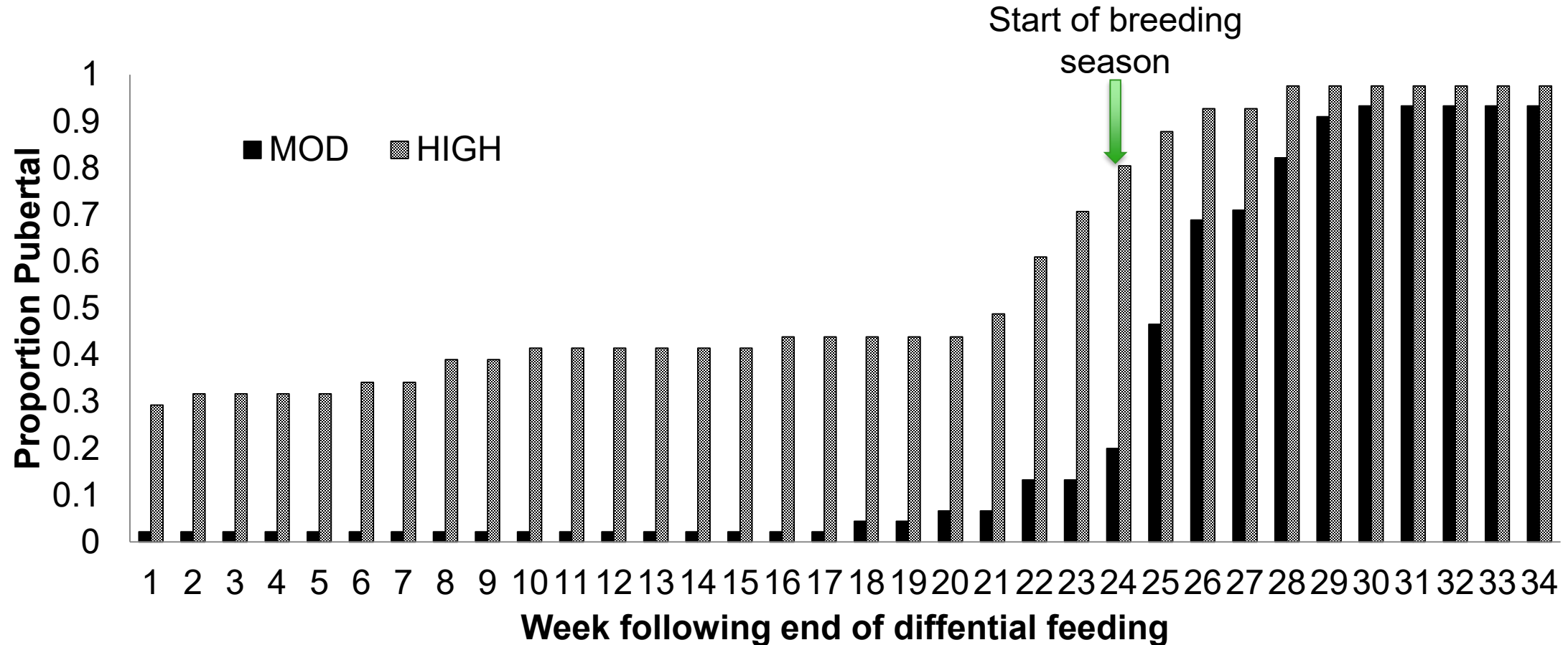
Weeks	No. heifers	6	8	10	12	1 <sup>st</sup> service conception rate
Pubertal						
Yes	68	68	82	90	94	56
No	243	55	70	78	86	60

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

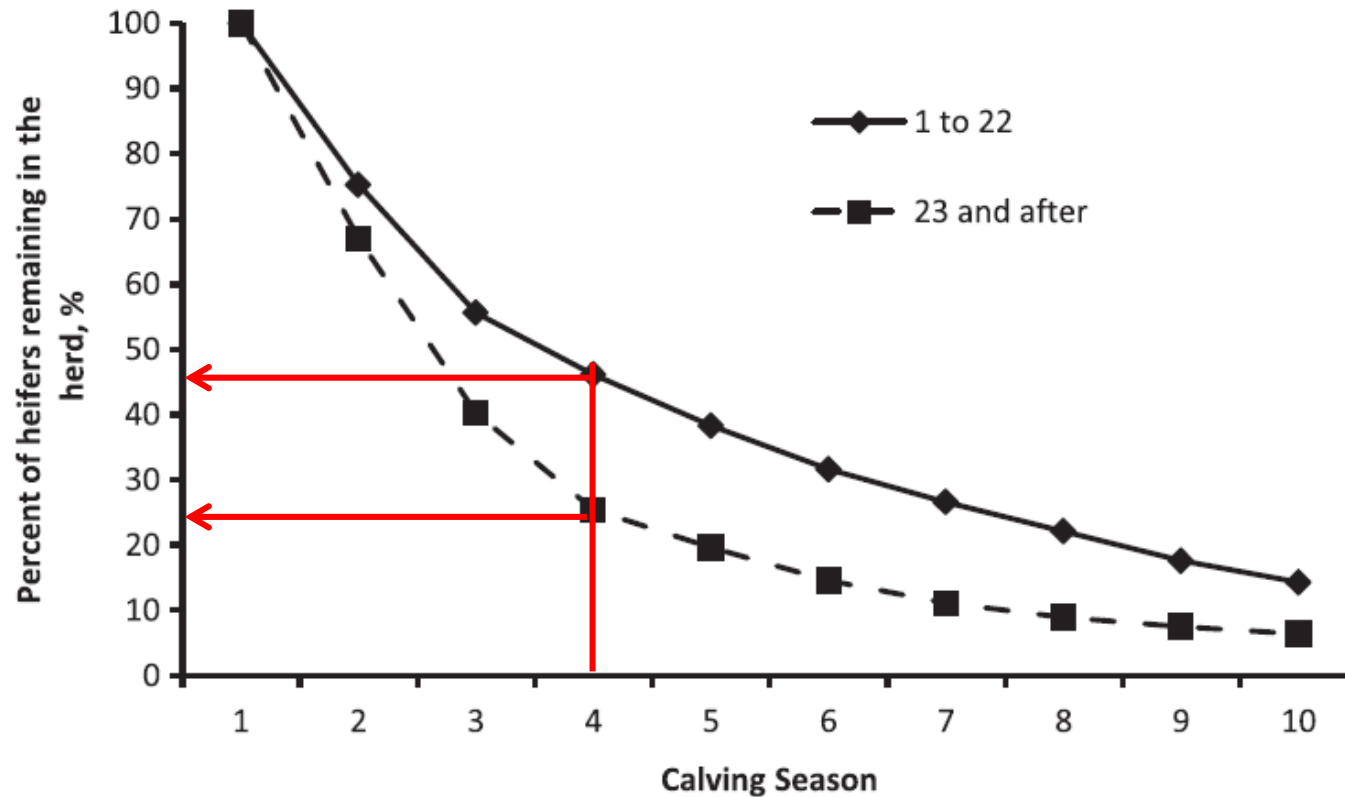


# Effect of plane of nutrition between 4.5 to 9 months of age on timing of puberty onset in Angus X Holstein-Friesian heifers



Heslin *et al.* (unpublished)

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



Cushman *et al.* (2013)

# Rearing your replacement heifer

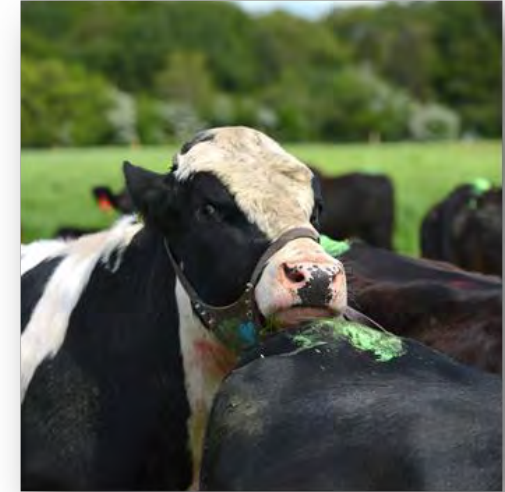
- Aim for pre-weaning average daily gain of 1.2 kg/day
- Cow must be 'milky'
- Pre-weaning is the most important time for influencing age at puberty

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 *et al.*, 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 ?



### Weaning Performance Report

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

Print: 22-FEB-2022  
 Herd Owner: SHANE KEAVENEY  
 Herd Number:



- 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 m<sup>2</sup>  
 - 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?