



The potential of strategic concentrate supplementation in reducing age at slaughter in pasture-based dairy-beef systems

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Dairy cow numbers up 40% in 10 years

Dairy cow numbers continue to rise



Dairy beef calf numbers to hit 1m – Teagasc

The growth in dairy beef calf numbers is occurring in Ireland and the US, with simultaneous decline in suckler numbers.



Dairy beef challenges from a beef farmer's perspective

Adam Woods takes a look at dairy beef from a beef farmer's perspective and what needs to change to make the system a success.



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- Policy ambition to reduce slaughter age (3-3.5 months)
 - Climate Action Plan 2023
 - Teagasc MACC 2023

Rapid Communication: Large exploitable genetic variability exists to shorten age at slaughter in cattle¹

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Experimental design



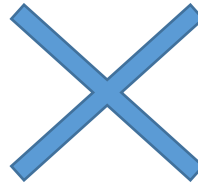
Holstein-Friesian (HF)

N=80



Angus x HF (AAX)

N=160



Grass-Only

N=80



INTER

N=80

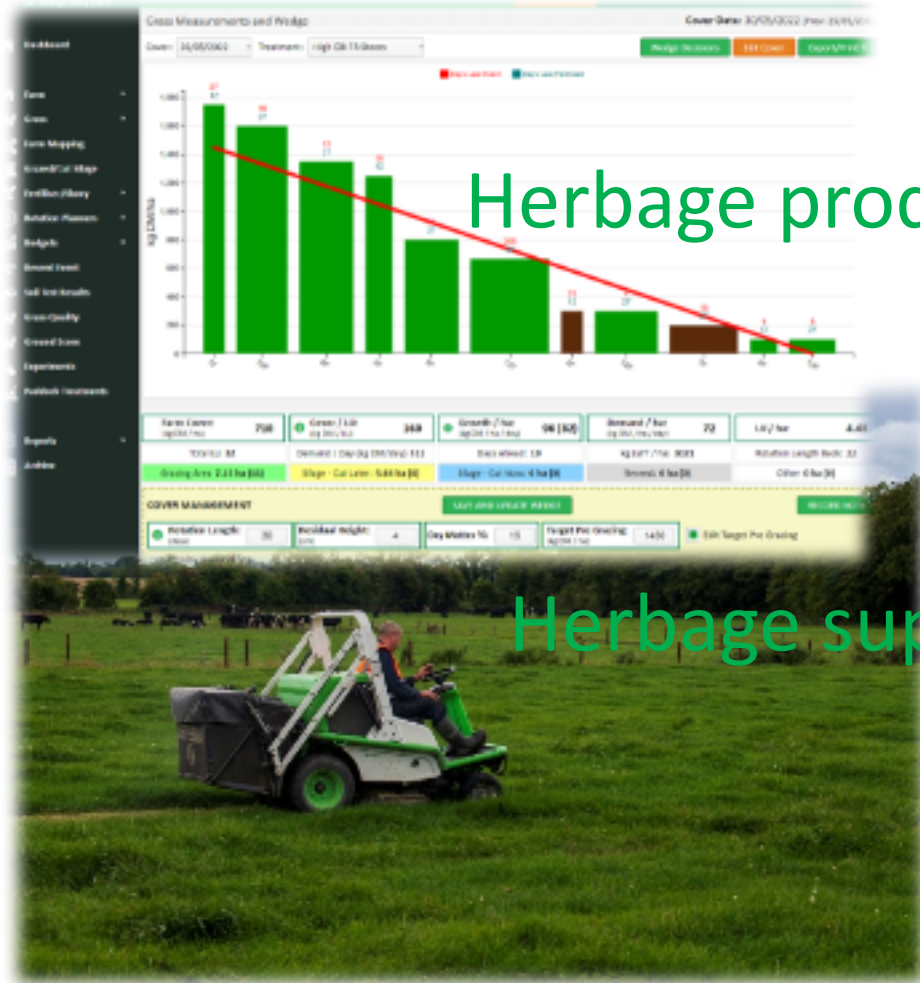


HIGH

N=80

Treatment	Calf rearing	Summer GS	Autumn GS	1 st winter	Second GS	Finishing period
 Grass-only (GO)	Milk replacer, <i>ad-lib.</i> Conc.	Pasture-only	1 kg concentrate	Grass-silage <i>ad-lib.</i> 1.5 kg concentrate	Pasture-only	Grass-silage <i>ad-lib.</i> 5 kg concentrate
 INTER	Milk replacer, <i>ad-lib.</i> Conc.	1 kg concentrate	1 kg concentrate	Grass-silage <i>ad-lib.</i> 1.5 kg concentrate	Pasture-only	Grass-silage <i>ad-lib.</i> 5 kg concentrate
 HIGH	Milk replacer, <i>ad-lib.</i> Conc.	1 kg concentrate	1 kg concentrate	Grass-silage <i>ad-lib.</i> 1.5 kg concentrate	3 kg conc. July 1 st - Aug. ^{14th} 5kgs conc. Aug.15 th	Grass-silage <i>ad-lib.</i> 5 kg concentrate (HF only)

System measurements



Herbage production and quality

Herbage supply and



Animal measurements



Regular live-weight measurement



Body condition scoring

BCS ≥ 3.75 → drafted for slaughter



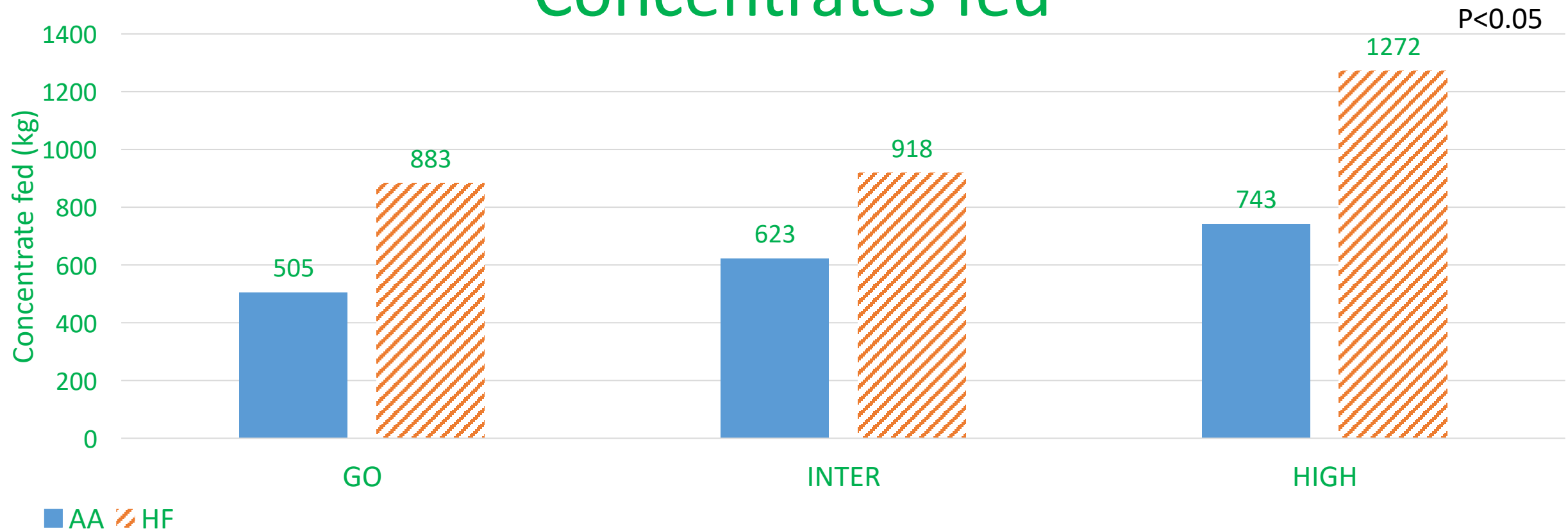
Ultrasound scanning of fat and



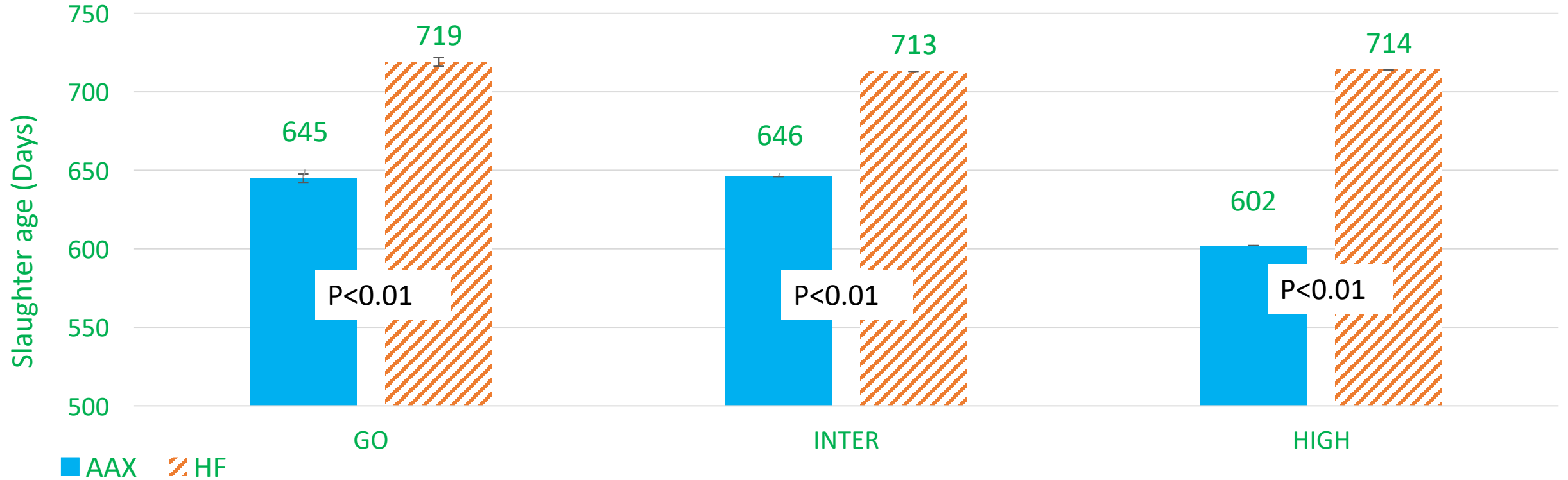
Statistical analysis

- Analysed using linear mixed models (version 9.4; SAS Institute Inc., Cary NC).
 - Fixed effects:
 - Genotype (AAX and HF),
 - Feed treatment (GO, INTER, HIGH)
 - Dam parity (1, 2, 3, 4, ≥ 5)
 - Dam beef genetic merit
 - Year (2021 and 2022)
 - Day of birth within year was included as a fixed effect in all models except slaughter age
 - Sire was included as a random effect for all traits

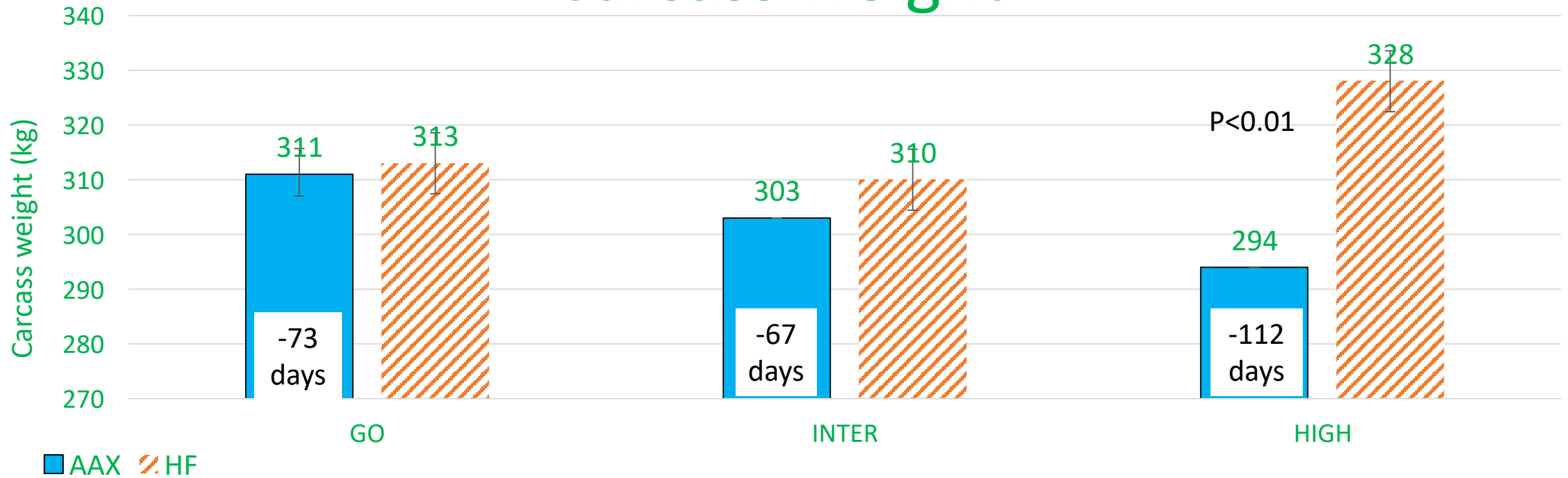
Concentrates fed



Age at slaughter



Carcass weight



Conclusion

- Supplementation over the first grazing season had no effect on lifetime performance
- Supplementation during the second grazing season allowed AAX achieve a reduced slaughter age whilst still producing market acceptable carcass
- HF steers were unable to achieve a reduced slaughter age
- Correct genotype and correct management

Thank You !!



**An Roinn Talmhaíochta,
Bia agus Mara**
Department of Agriculture,
Food and the Marine

