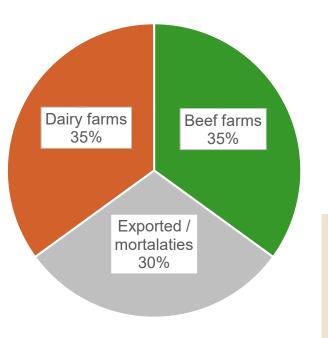




1.15m dairy beef calves available per annum



Beef farms

- > 10,076 farms
- > 37 calves

Challenge

- High attrition rate of farms rearing calves
 - Over a 5 year period 39% of farms continued rearing calves!



Benefits of improved dairy-beef

Dairy

Beef

- Increased demand
- ✓ Social acceptance
- ✓ Increased selection intensity

- ✓ Increased availability
- ✓ Greater efficiency
- ✓ High quality product

Irish Agriculture

- Enhanced sustainability
 - Economic, environmental and social





• Bull selection





Cow selection



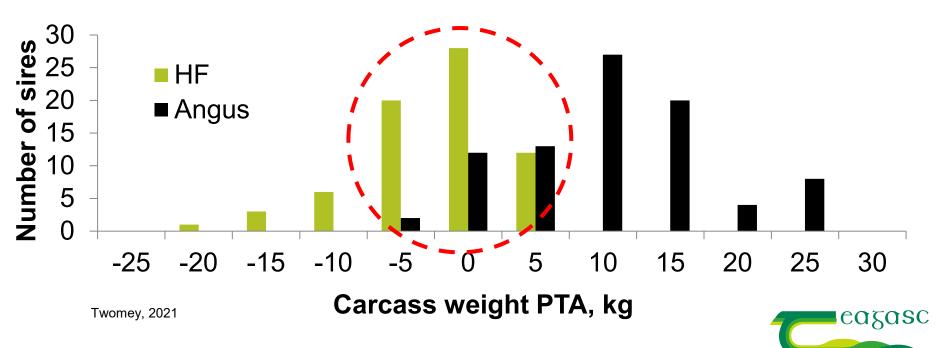


Timing



Are beef bulls always better?

Distribution of active Angus and Holstein Friesian sires



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

Slaughter performance

	<u>HF</u>	HIGH AA	LOW AA		
Carcass/slaughter performan	<u>ce</u>				
Age at slaughter (days)	686 (22.8 mth)	656 (21.8 mth)	657 (21.8 mth)		
Carcass weight (kg)	300	305	300		
Carcass conformation (1-15)	3.8 (O-)	5.3 (O=)	5.1 (O=)		

8.4(3=)

8.9(3+)

*Base price of €3.70/kg on the QPS grid; €0.20/kg QA payment and €0.10/kg breed bonus

9.2(3+)

€1,123

Carcass fat (1-15)

Carcass value* €1,065 €1,156

COSOSC

AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

⁶

System performance

	HF	HIGH AA	LOW AA
Calf purchase price (€/ha) ¹	€192	€512	€512
Carcass output (kg/ha)	960	976	960
Gross output (€/ha)	€3,408	€3,699	€3,594
Total variable costs (€/ha)	€1,962	€1,715	€1,728
Gross margin (€/ha)	€1,446	€1,984	€1,866
Fixed costs (€/ha) ²	€752	€752	€752
Net margin (€/ha)³	€502	€720	€602
Net margin (€/kg)	€0.52	€0.74	€0.63
Cost of production (€/kg)	€3.03	€3.05	€3.12

Cost of production (ϵ/kg) $\epsilon 3.05$ $\epsilon 3.12$

AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

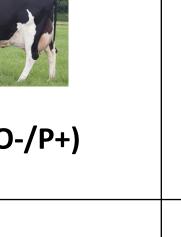
¹ Net margin (€/ha) assuming a calf purchase price of €60 and €160 per head, respectively, for Holstein Friesian and Angus sired bull calves.

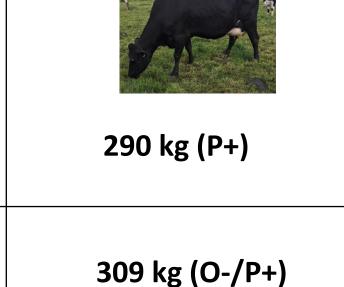
² Fixed costs are based on Teagasc eProfit Monitor results from dairy calf-to-beef farms. ³ Net Margin excludes land and labour charges.

age at slaughter

28 month



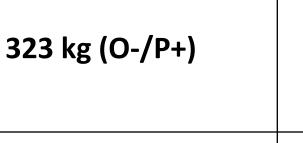


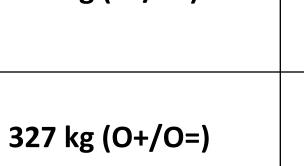


314 kg (O=)

Berry et al. 2018











New approach needed!

Greater integration of dairy & beef industries





Age at slaughter systems study

Objective:

 Quantify the gains achievable in reducing the age at slaughter through genetic selection and optimum grassland nutrition

Study design

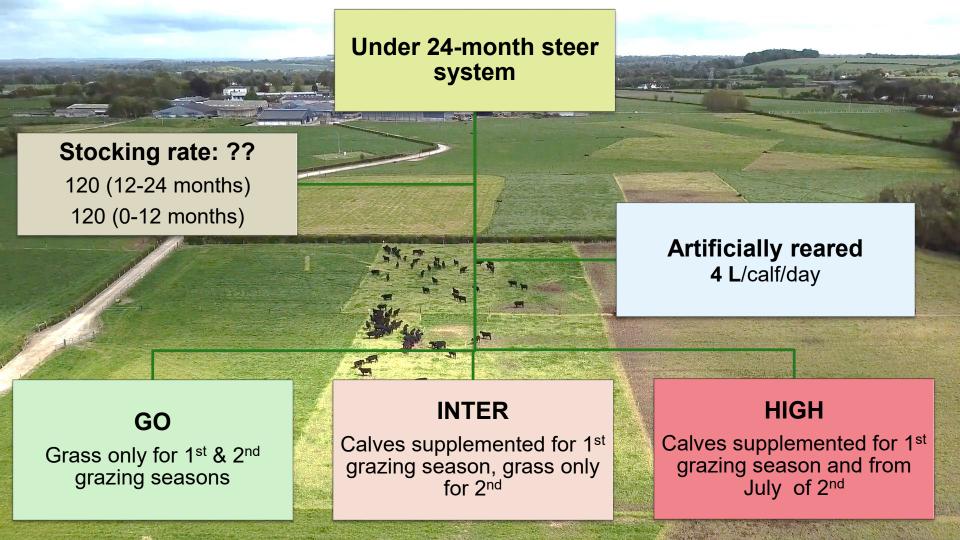
- 3 x 3 factorial design
 - » Three genotypes: EARLY and LATE age at slaughter AA, & HF (Top 4 EBI sires)
 - » Three feed management systems
 - » 120 males calves purchased in 2020 & 2021 (n= 240)



Age at slaughter EBV

- Generated from national dairy-beef population
- Steer and heifer systems
- Age at slaughter EBV corrected for:
 - Carcass weight (unadjusted for age)
 - Conformation
 - Fatness
- To identify animals which can produce an in-spec carcass at a reduced age





Animal measurements

- Growth (fortnightly weighing)
- Intake
 - N-alkane method to measure individual animal DMI at pasture (x 2)
 - Substitution rate
 - Group intake indoors (1st and 2nd winter)
- Grazing behaviour
- Linear and skeletal measurements
- Muscle and fat depth (ultrasound scanning)
- Carcass performance
 - EUROP
 - Kidney and channel fat
 - Primal cut yield





Liveweight performance

54

89

245

319

507

NS

NS

NS

NS

NS

NS

NS

NS

NS

NS

NS

easasc

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Liveweight periormance									
Liveweight (kg)	EARLY	HF	LATE	Geno	Feed	Geno*feed			

55

91

256

328

527

58

93

269

348

548

Arrival

Weaning

Housing

Turnout

16

Housing (27

September)

**

NS

NS

NS

NS

NS

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NS

End of second grazing season								
Muscle & fat depth	EARLY	HF	LATE	Geno	Feed	Geno*feed		
Rib fat (mm)	5.0	3.2	5.1	***	NS	NS		
Lumbar fat (mm)	3.5	3.1	3.5	NS	NS	NS		

49.0

6.1

5.5

3.2

55.5

6.2

8.4

3.6

55.6

6.5

7.8

3.5

Muscle depth (mm)

Rump Fat (mm)

IMF (%)

BCS (1-5)

17

2021/22 slaughter performance

Slaughter performance	<u>GO</u>			INTER			<u>HIGH</u>		
Slaughter performance	EARLY	LATE	HF	EARLY	LATE	HF	EARLY	LATE	HF
Age at slaughter (months)	22.1	22.4	24.7	22.0	22.0	24.4	20.5	20.4	24.4
Finishing days (indoors)	75	79	145	73	65	138	0	0	138
Finishing concentrate (kg)	367	387	720	360	322	685	471	427	1051
Carcass weight (kg)	328	304	328	325	297	326	306	269	344
Carcass conformation	O=/O+	O=/O+	O-/O=	0+	0+	O-/O=	O=	O=/O+	O-/O=
Carcass fatness	4-	3+	3+/4-	4-	3+	3+	4-	3+	4-
Carcass value*	€1443	€1337	€1361	€1440	€1316	€1353	€1337	€1192	€1427

^{*}Base price of €4.25/kg on the QPS grid; €0.20/kg QA payment and €0.10/kg breed bonus



Conclusion

- Future proof
 - Dairy and beef
- High merit beef genetics are a low cost and proven technology to improve sustainability
- Each herd has opportunity to add further value at very little cost
- What do dairy-beef systems need?



