

Beef Improvement Group

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Current UK (EU) Industry

- Highest global cost of production
- Why?
- Supported by high subsidy payments
- Led to proliferation of inefficient breeds and systems
- Fragmented supply chains
- Winter housing of cattle – high cost





The Challenges

- Minimise variable costs
- Control fixed costs
- Increase output
- Feed inputs
- Herd replacement
- Veterinary
- Labour per cow
- Winter housing
- Kgs of calf wt weaned per cow mated
- Maximise carcass value

Optimise costs/output balance to maximise profit

Research Support

- Breeding programme design
- Genetic evaluation
- Breed Improvement - organise breeding strategies within breed to optimise terminal sire and maternal traits simultaneously
- Measure residual feed intake (RFI)
- Measure meat eating quality
- Future – genomics?



BREEDING PROGRAMME DESIGN

STABILISER

- 4 – breed composite
- Designed at MARC, Nebraska, US by Keith Gregory & Larry Cundiff
- 50% British native 50% maternal Continental breeds
- Maximise profits from cow/calf operations and feedlot performance

Without government subsidy support

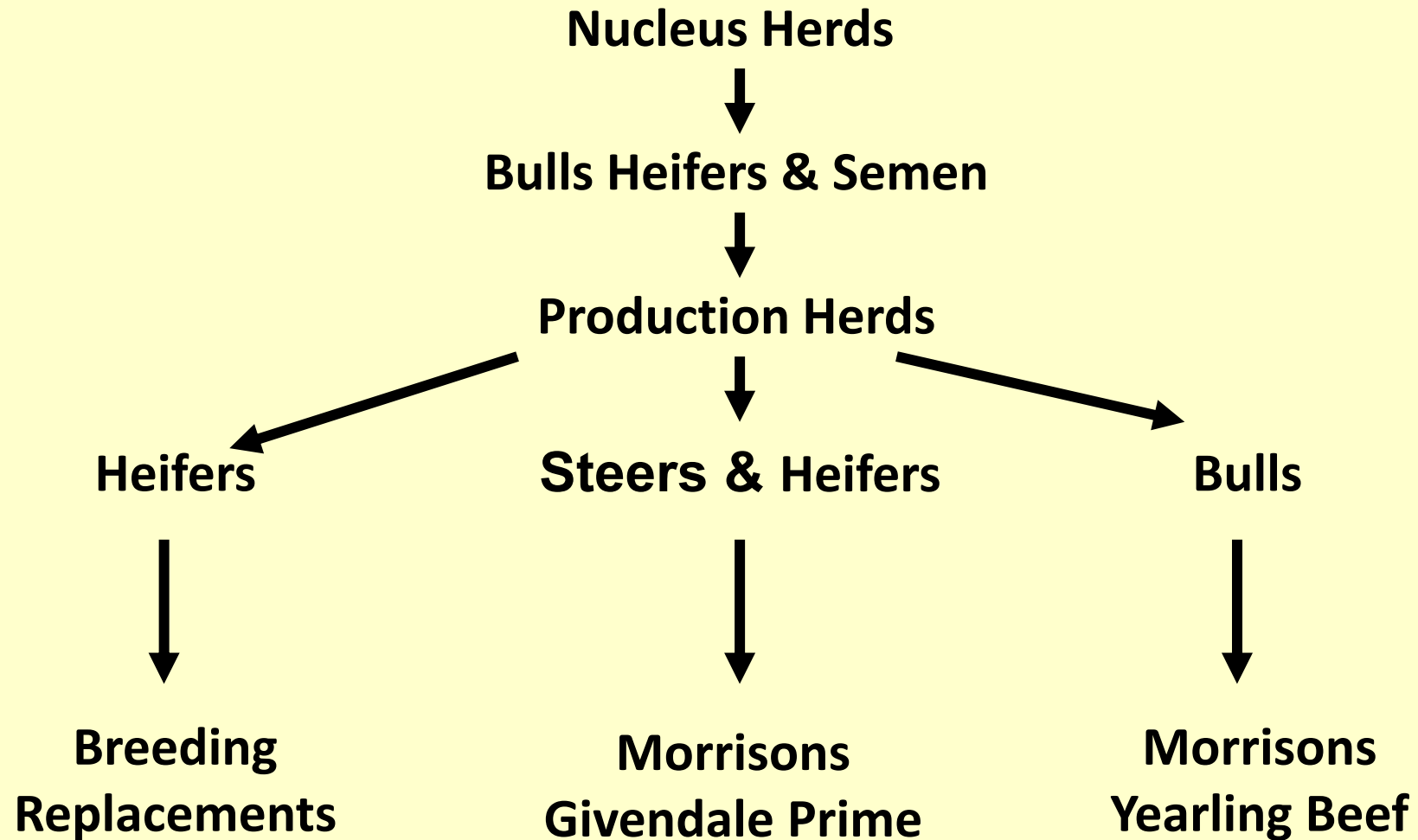


Stabiliser Breeding Programme

- First UK calves born 1999
- 8,000 Signet recorded cows in 64 herds
- 24,400 females on BCMS database
- BIG manages breeding programme and markets all pure Stabiliser genetics
- 450 + farmers using Stabiliser genetics
- All herd sires selected on EBVs
- New bloodlines regularly imported from USA



Stabiliser Breeding Pyramid



GENETIC EVALUATION

Multi-trait BLUP Model

- Calving ease – gestation – birth weight
- Growth – 200 & 400 day growth
- Muscle & fat depths
- 200 day milk
- Age at first calving
- Scrotal circumference
- Calving Interval
- Longevity
- Cow Mature Weight (maintenance cost)



BREED IMPROVEMENT

Central Performance Testing



How we accessed research to help with breeding programme

- Visited USDA MARC in 1997
- Utilized UK Signet Breeding Services to lead research into BLUP evaluations
- Utilized geneticists at SRUC to design programme to optimize genetic gain for maternal & terminal sire traits simultaneously
- Continue to develop new production EBVs with Signet & SRUC



Financial Gains Per 100 Cows

Increase Output	£
• Reduced calving interval from 18 to 9 wks Plus 12% more calves reared= 5,300kg extra calf weight at weaning @£2.10	111
• Heifers calve at 2 years (12% replacement)	90
Savings	
• Reduce Replacement rate from 20% to 12%	12
• Feed, vet and labour	<u>170</u>
	383

**Total gains £383 per cow = £38,300 per
100 cows**



RESIDUAL FEED INTAKE

North America
GrowSafe Calgary



BIG Residual Feed Intake Project

5 year project testing >1000 Stabilisers

Consortium Partners

- BIG – lead applicant & project manager
- JSR – provide infra-structure & labour
- SAC – data collection & genetic evaluation
- Keenan – feed analysis & ration formulation

Contributing Organisations

Morrisons/Woodheads

Eblex/Signet

Funded by Technology Strategy Board (£1.2m)

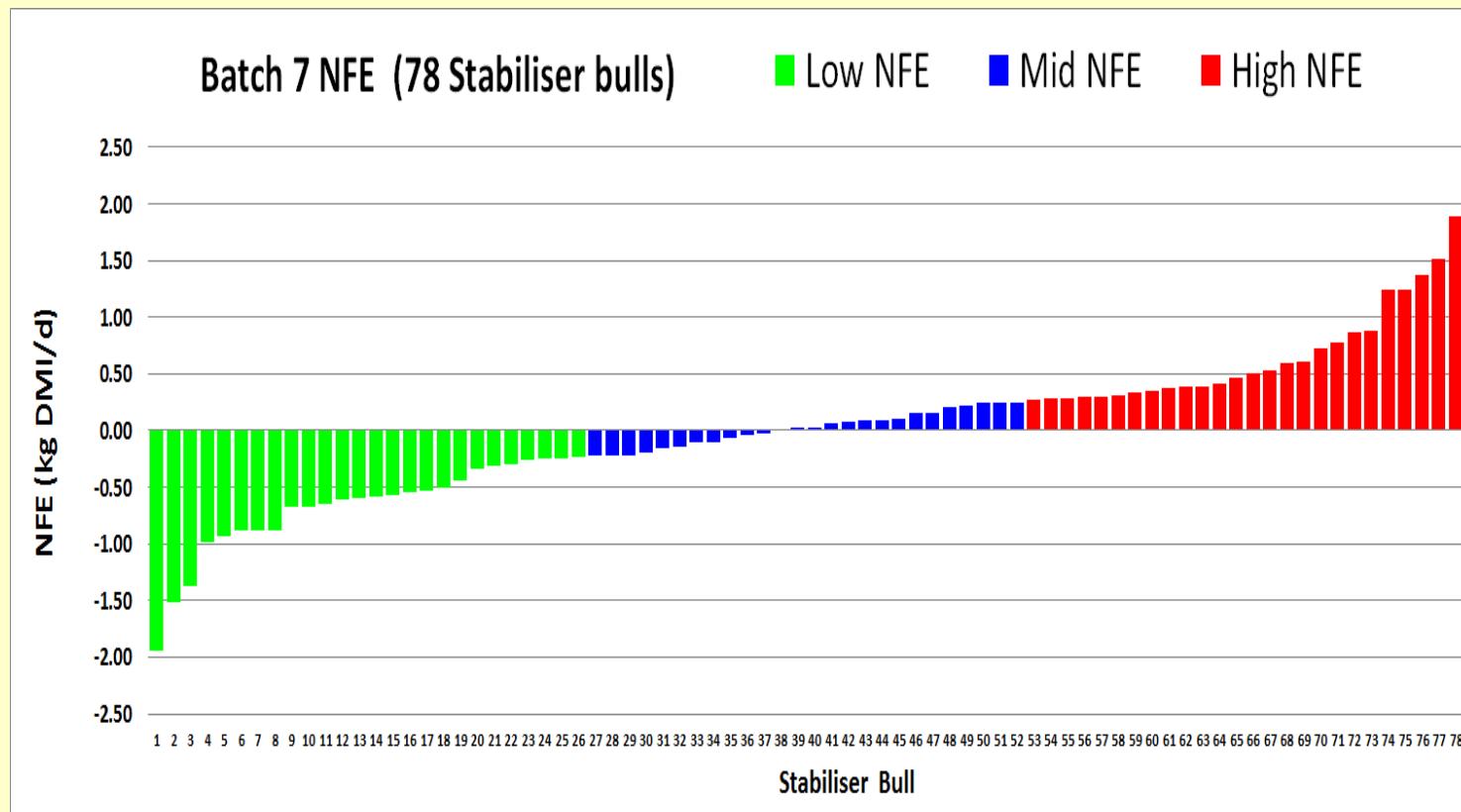


Project Aims

- Identify sire lines which are more efficient at converting feed into saleable meat
- Select more efficient breeding females
- Promote the uptake of more efficient breeding stock
- Reduce greenhouse gas emissions
- Improve profitability for producers



Typical RFI Distribution Values



Results of 78 Stabiliser Bulls

	Low RFI	Mid RFI	High RFI
• DLWG (kg/d)	1.54	1.64	1.63
• Mean LW ^{0.75} (kg)	103	102	106
• Fat depth (mm)	5.0	4.6	5.0
• DMI (kg/d)	9.4	10.1	11.1
• FCR (kg DMI:LWG)	6.2	6.3	7.0
• RFI (kg/d)	-0.68	0.02	+0.66
Cost deviation	-£10	0	+£14

£ per 12 weeks on test centre @ feed cost of £165/t DM

Low 1/3 RFI bulls consumed 17% less feed, had 13% better FCR and cost £24 less to feed than high 1/3 bulls



Meat Quality

JSR Food Quality Centre

Measures

- Shear Force
- Mirinz Compression

Bite Force

- Rank samples for tenderness



SUPPLY CHAIN DEVELOPMENT



BIG/Morrisons Plc Partnership

- Develop supply chain model
- Steers, bulls & heifers
- Improve production efficiencies
- Benefits from feed-back of carcass data
- Secure a strong supply chain for consistent high eating quality beef
- Rewards to producers for true carcass value



The BIG Production Model

- Disciplined breeding programme
- Defined production blueprint
- Optimising performance & costs
- To maximise profits
- Consistent high eating quality beef

Unique in the UK industry



Innovation

- Identify methods to improve production efficiency & profitability
- Research robust solutions to solve practical problems
- Select reliable academic/industry partners
- Secure adequate funding
- Always work hard to deliver planned milestones and outcomes



Thank you

