

Where's the value in breeding for feed efficiency

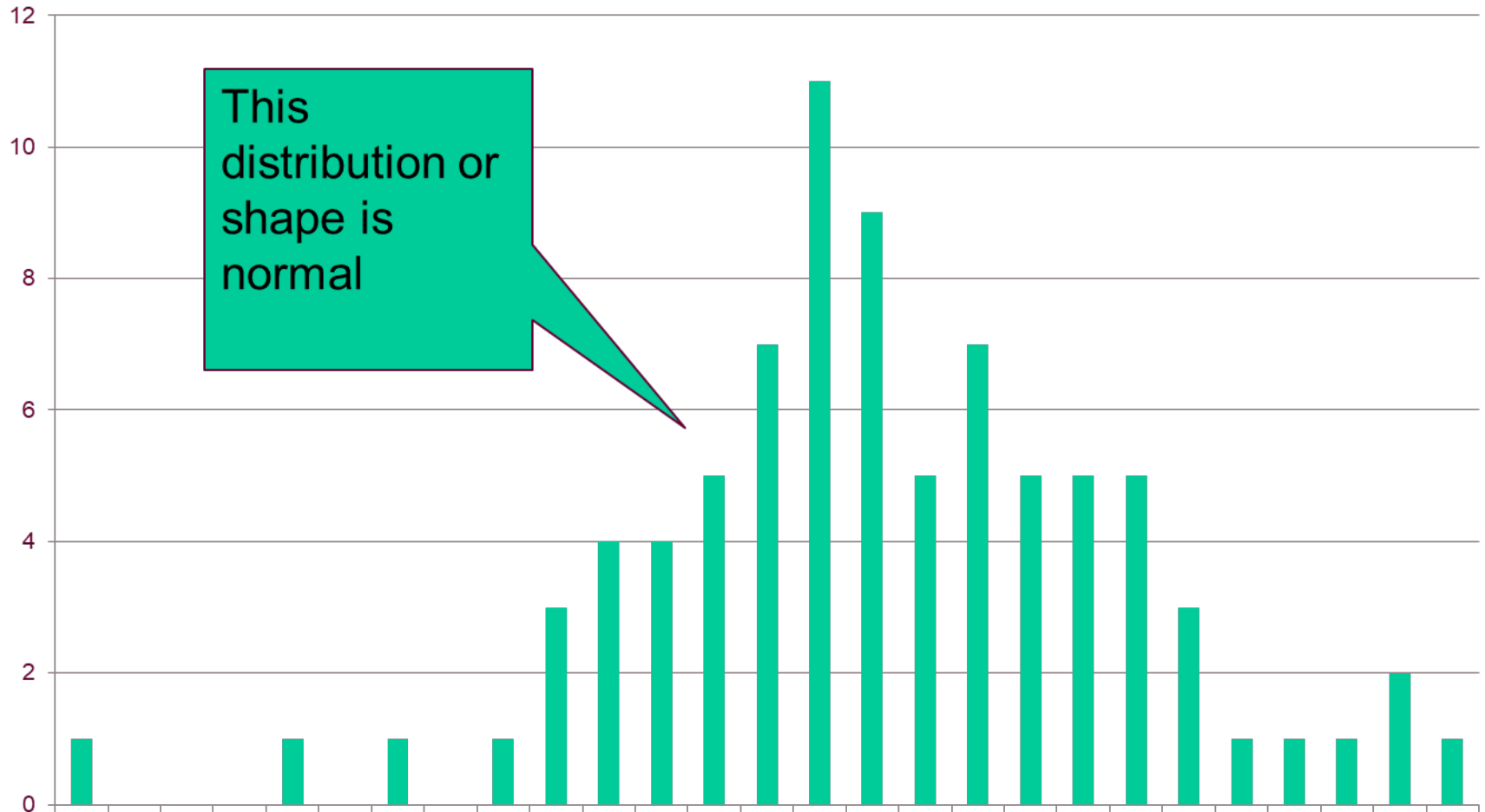
Dr Duncan Pullar

Pullar Livestock Consulting Ltd

Value of feed efficiency

- Reduced maintenance costs....
 - of breeding cows
 - AND finishers
- Reduced costs of live weight/ carcass gain

For any given sire and dam there is a spread



Maintenance

60-70 % of feed in a suckler system is associated with the breeding cow herd.....

Growth

10-20% of feed in a suckler system is associated with supporting growth...

Energy cost of finishing

Finisher Start (bull 300kg, heifer 270kg at 8 months) Finish Steer 680kg (16 mo) heifer 600kg (18 mo)	Steer	Heifer
Maintenance MJ	14,800	21,300
Growth MJ	16,200	16,450
Total	31,000	37,750
-growth %	53	46

Potential for 20% reduction through selection on NFE
3,500 MJ (1 t barley at £110/t) is £40 per head.

Net Feed Efficiency – what is it ?

NFE – it is a biological measure of feed use efficiency also known as RFI)

NFE :-

- **scales feed intake to the size of the animal (metabolic LW) its rate of growth (DLWG)**
- **is a measure of feed efficiency derived “NET” for a given animal size (kg); growth rate (kg/d) or carcass fat levels (mm)**

Wold Farm - NFE project

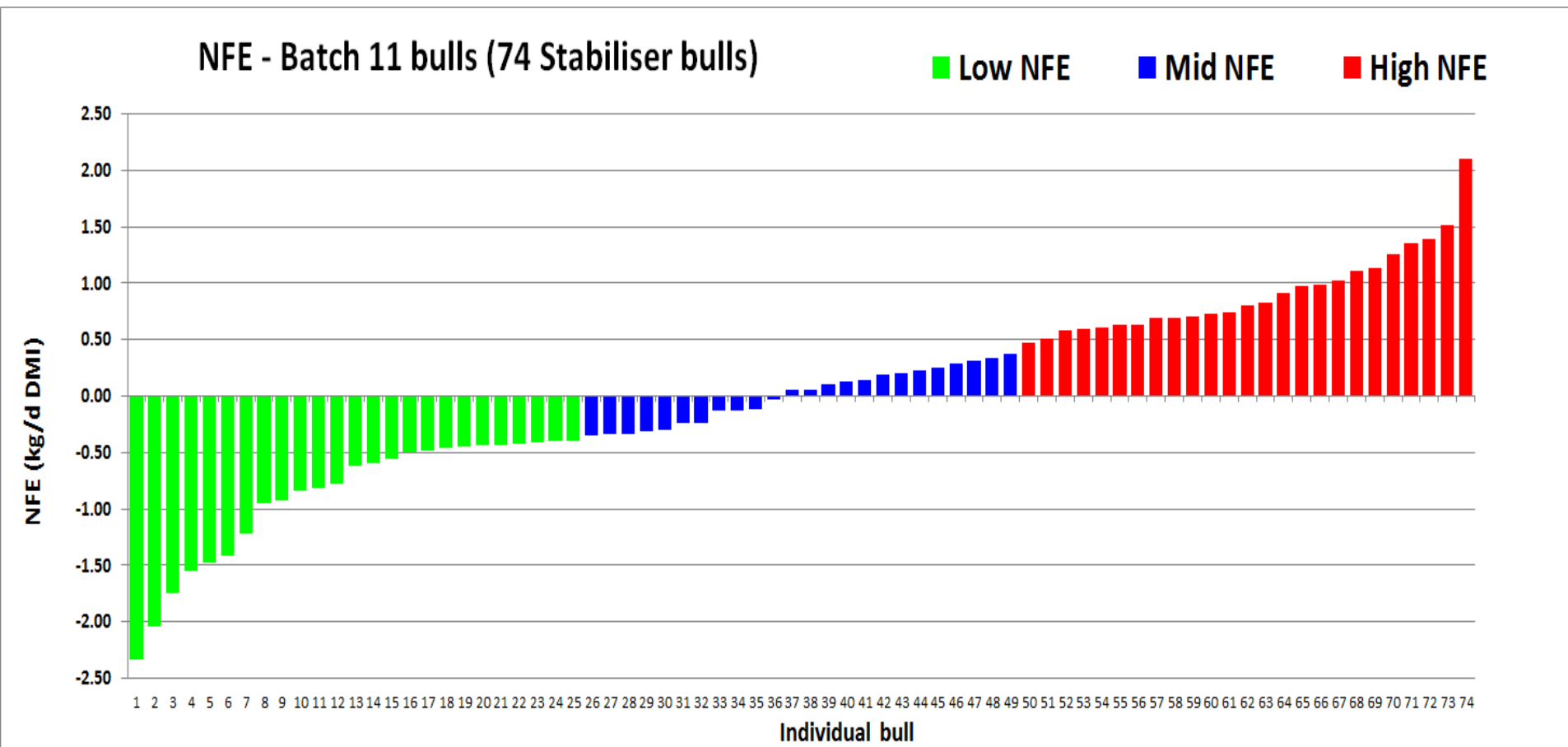
NFE – measured in young breeding bulls and finishing steers over an eight week period

Three key measurements taken very accurately:-

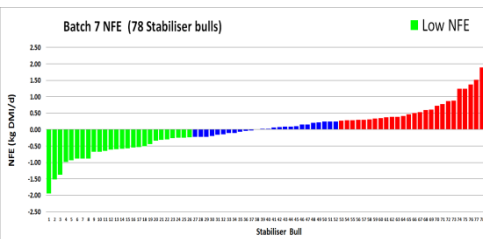
- **Dry matter intake**
- **Daily live weight gain**
- **Carcass fat depth**

Wold Farm NFE project example results

74 Stabiliser bulls



Example NFE results



NB: @ feed cost of £155/t DM - 12 weeks on Wold farm NFE test

	<u>Low NFE</u>	<u>Mid NFE</u>	<u>High NFE</u>
Mean LW (kg)	591	575	579
DLWG (kg/d)	1.76	1.66	1.73
Fat depth (mm)	5.4	4.9	5.4
DMI (kg/d)	10.8	11.2	12.4
FCR (DMI:LWG)	6.2	6.9	7.2
NFE (kg/d)	-0.89	0.01	+0.92
£ Deviation	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> £21 difference between mean of low and high groups </div>		

Wold Farm NFE project results

Key findings :-

For same size animals, same DLWG, same fat depth:-

low NFE beef cattle.....

eat 14 % less feed

had 14 % better FCR

cost £21 less to feed over a 12 week period

.....compared to high NFE beef cattle

Genetics of NFE

- Net feed efficiency $h^2 = 0.37 (\pm 0.02)$
 - Wold farm NFE unit, 2015
- Average from around the world:-
 - $h^2 = 0.37 (\pm 0.08)$
 - Range in $h^2 = 0.18 - 0.50 (\pm 0.03 - \pm 0.13)$

Roehe, Hyslop, et al. 2015

Profit Driver: Feed Intake

A tale of two bulls...



- Same herd. 565 kg vs. 555 kg at 400 day
- 7.7 vs. 19.1 kgs of dry matter / day (4,148 kg / year).
- Converted 4 to 1 vs 10 to 1.
- 40% Heritable = 112 cows vs 75 cows on same grass.
- **Which bull's daughters do you want?**

Latest EBVs:



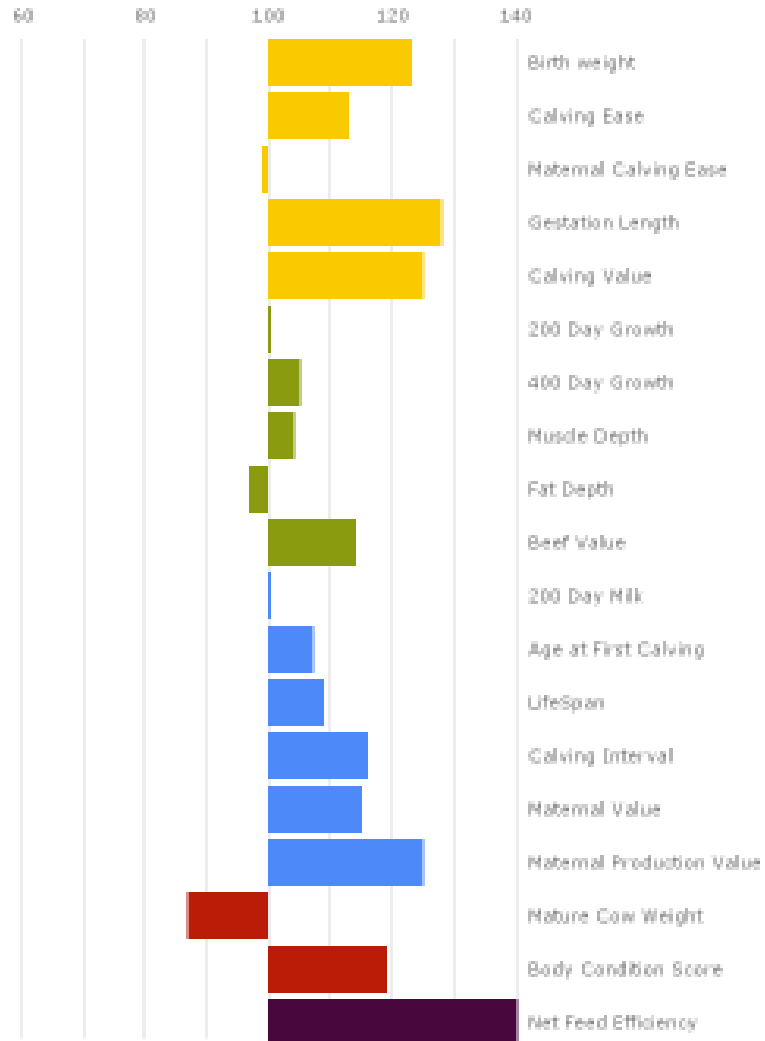
[go to breeder](#)

[go to pedigree](#)

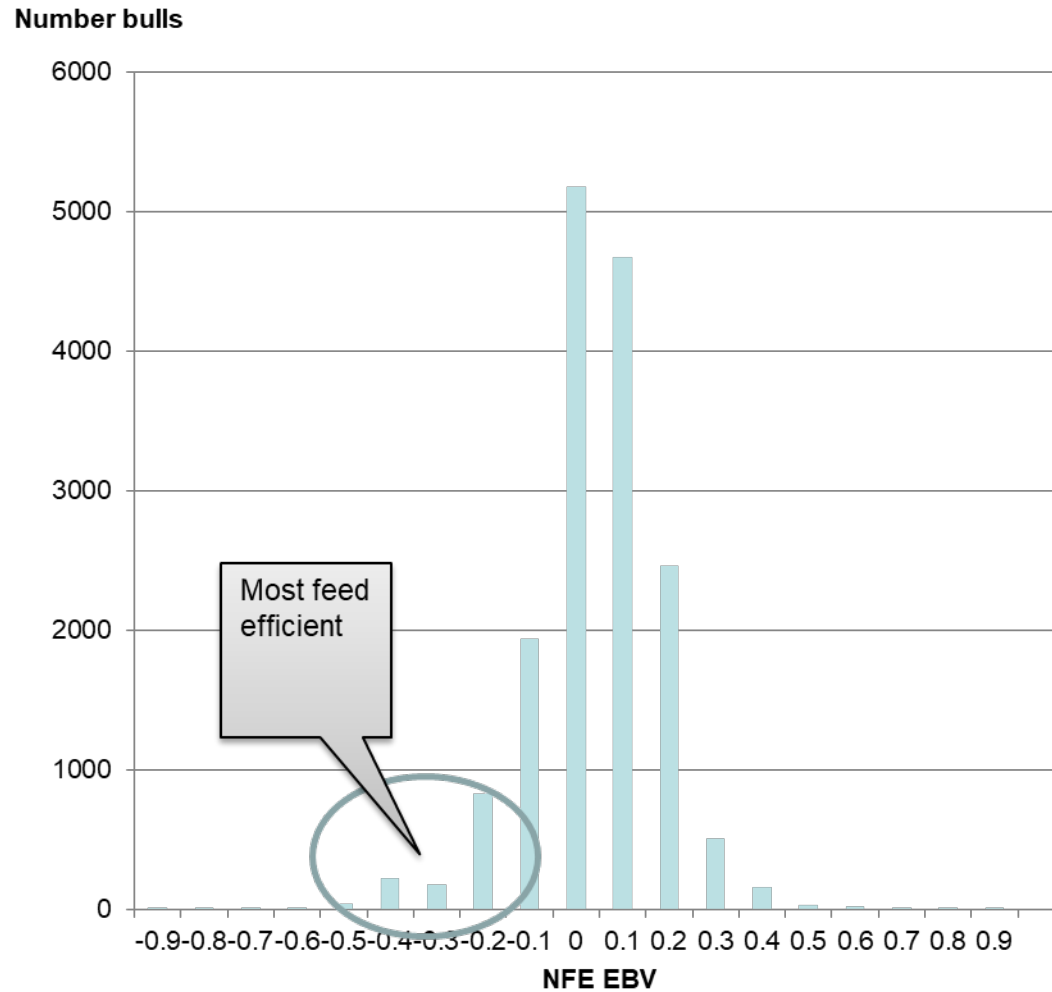
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Analysis date: 10/03/2017

	EBV	accuracy
Birth weight	-2.30	75%
Calving Ease	0.80	70%
Maternal Calving Ease	-0.10	57%
Gestation Length	-3.20	61%
Calving Value	6.00	69%
200 Day Growth	14.00	78%
400 Day Growth	34.00	78%
Muscle Depth	1.60	77%
Fat Depth	0.10	73%
Beef Value	30.00	70%
200 Day Milk	0.00	67%
Age at First Calving	-0.11	67%
LifeSpan	0.50	53%
Calving Interval	-2.80	53%
Maternal Value	21.00	61%
Maternal Production Value	36.00	67%
Mature Cow Weight	30	65%
Body Condition Score	0.13	54%
Net Feed Efficiency	-0.71	47%



Distribution of NFE EBV in Stabiliser Bulls



Where's the value?

- Cow maintenance – up to £100 per cow calf unit to weaning with 20% improvement (and that variation is already in the cattle!!)
- Finishing up to £40 per head from weaning to slaughter with 20% improvement.

Thank You – Questions?

