

UK Beef Production



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The UK Beef Industry

- Industry Structure

- Economics

- Growth & Nutrition

- Breeds & Sex

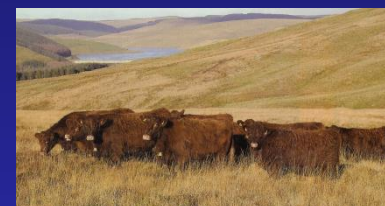
- Carcase classification & selection for slaughter

- Cattle Housing



UK Beef Production

- Beef production in the UK is extremely diverse with cattle being reared on a number of different production systems utilising many different breed types and feeds from farms situated in the hills, uplands and lowlands



- Hills & Uplands (SDA)

- Suckled calf production with calves sold after weaning to lowland finishers
- A primary enterprise with sheep



- Lowlands

- Intensive and extensive finishing systems of dairy-bred and weaned suckled calves
- Suckled calf production on 'marginal' land
- Pedigree beef herds producing breeding bulls for suckler producers and dairy herds



UK Cattle Industry Structure – 2017

475k replacements (inc imports)

240k replacements

1.89 mn Dairy cows



80k beef x dairy females

1.59mn Suckler cows



94% cross-bred (Todd et al, 2011)

641k Cull Cows

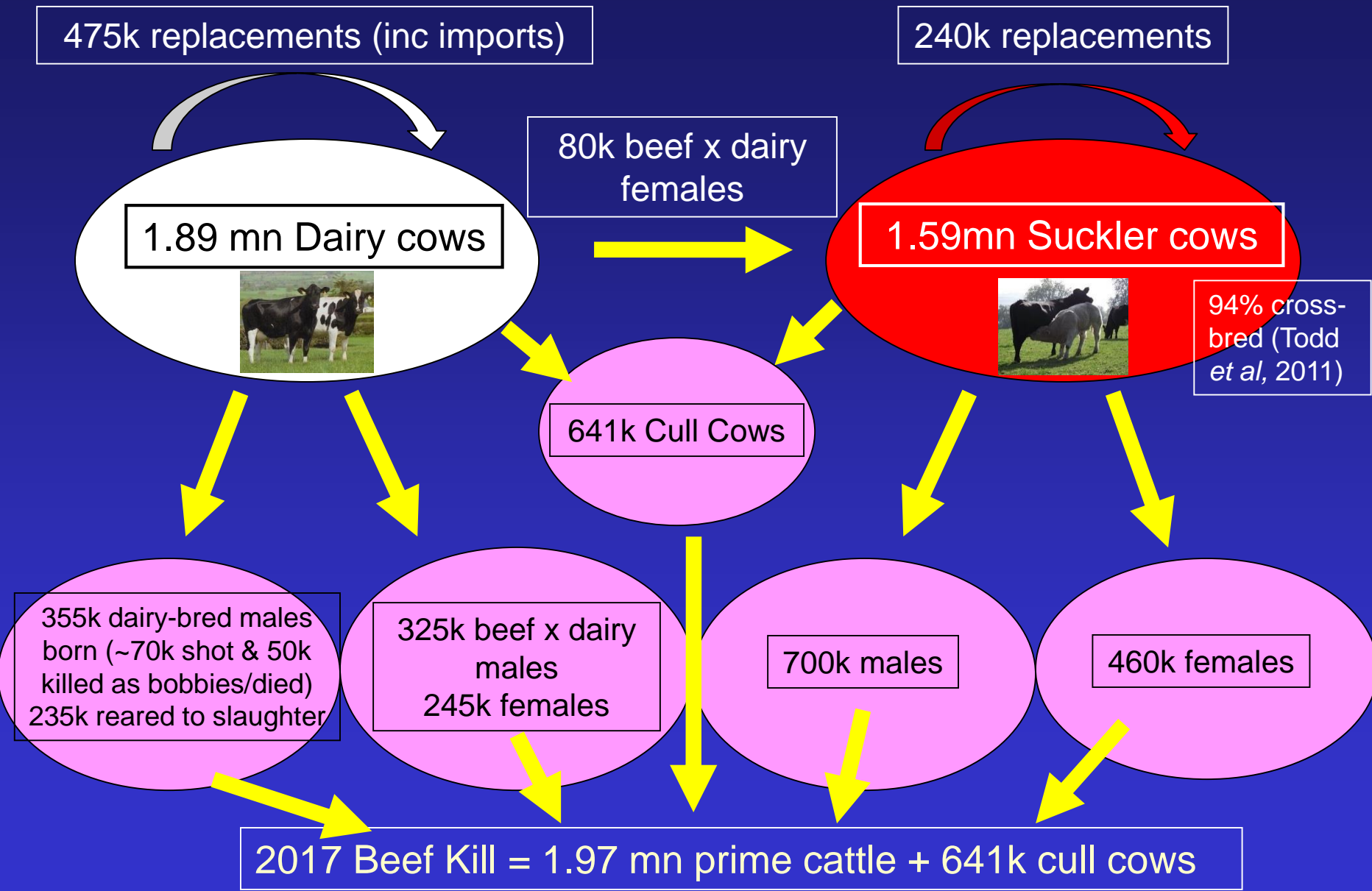
355k dairy-bred males born (~70k shot & 50k killed as bobbies/died) 235k reared to slaughter

325k beef x dairy males 245k females

700k males

460k females

2017 Beef Kill = 1.97 mn prime cattle + 641k cull cows



Economics of Beef Production

AHDB recorded 'average' producers 2016/17

£/head	Beef Stores	Beef Finishing	All Sucklers
Gross margin	201	222	291
Fixed costs	233	203	304
Non-cash costs	74	106	166
Net Margin	-106	-88	-180

Non-cash costs includes unpaid family labour, rental value of owned land and depreciation



(Source: AHDB Farmbench 2016/17)

Economics of Beef Production

AHDB recorded 'top 25%' producers 2016/17

£/head	Beef Finishers	All suckers
Gross margin	467	471
Fixed costs	137	255
Non-cash costs	118	132
Net Margin	212	84

Top 25% producers had improved physical performance, increased output AND reduced fixed costs



(Source: AHDB
Farmbench 2016/17)

The UK Beef Industry

- Beef production is often a 'secondary enterprise' in the lowlands, but a 'primary enterprise' in the hills and uplands - WHY?
- 52% of UK beef is sourced from the dairy herd
- 80.5% of the UK's beef produced from 'prime (clean) cattle' with 19.5% from cull cows and bulls
- 'There are as many beef production systems as there are beef farmers'



- Main production systems include:
 - Suckled calf production
 - Intensive 12-15 month cereal or silage beef
 - Semi-intensive 18-22 month beef
 - Extensive 24-30 month



- There are 25 British & 15 Continental beef breeds in the UK. Commercial beef production is based on cross-breeding
- The increased use of Holstein genetics in the dairy herd has created significant problems within the UK Beef Industry



Dairy Cow Breed Substitution

Dairy Shorthorn



British Friesian



1940's



1960's

Dairy Cow Breed Substitution

British Friesian



Holstein



<1970's

>1970's

The UK Beef Industry - Statistics

June census	1990	2000	2017
Dairy cows (mn)	2.85	2.34	1.89
Beef cows (mn)	1.60	1.78	1.59
Prime cattle slaughtering's (mn)	2.82	2.27	1.97
Total cattle (mn)	12.06	10.88	10.00

(Source: D Wyatt, Lead Analyst – Red Meat, AHDB Beef & Lamb)

- In 2013 there were 60,735 holding with beef cows with an average herd size of 28 cows (102,400 holdings averaging 19 cows in 1975). There were 2,800 herds with over 100 cows



The UK Beef Industry – Statistics 2013-2017

June census	2013	2014	2015	2016	2017
Dairy cows (mn)	1.78	1.83	1.90	1.90	1.89
Beef cows (mn)	1.61	1.58	1.58	1.60	1.59
Prime cattle slaughtering's (mn)	1.93	1.86	1.94	1.97	1.97
Total cattle (mn)	9.84	9.83	9.92	10.03	10.00

(Source: D Wyatt, AHDB B&L)



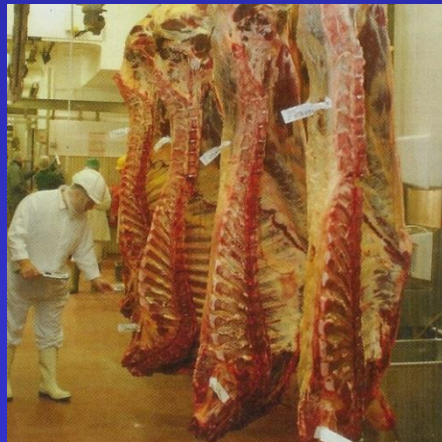
The UK Beef Industry - Statistics

June census	1990	2000	2017
Beef meat ('000t carcass wt)			
Home fed	1,001	708	902
Imports	174	205	339
Exports	124	0	130
Consumption	983	958	1,112
Self sufficiency (%)	102	74	81

UK Imports origins (fresh/frozen) 2017

- 69.7% Ireland
- 7.3% Netherlands
- 5.5% Poland
- 4.3% Germany
- 1.7% Australia
- 1.1% Spain
- 10.4% Others

(Source: D Wyatt, AHDB B&L)



UK Exports 2017

- 32.8% Ireland
- 23.9% Netherland
- 8.0% France
- 5.0% Italy
- 3.2% Germany
- 3.0% Belgium
- 24.1% Others i.e. HK

The UK Beef Industry – Statistics 2013-2017

INCLUDES processed beef products

June census	2013	2014	2015	2016	2017
Beef meat ('000t carcass wt)					
Home fed	848	878	888	912	902
Imports*	389	409	431	423	441
Exports*	132	141	132	153	142
Consumption*	1,106	1,161	1,092	1,191	1,202
Self sufficiency (%)*	77	78	75	76	75

(Source: D Wyatt, AHDB B&L)



The UK Beef Industry - Statistics

June census	1990	2000	2017
Average carcass wt (kg)	289	309	349
Finished beef price (£/kg livewt)	1.07	0.90	1.94

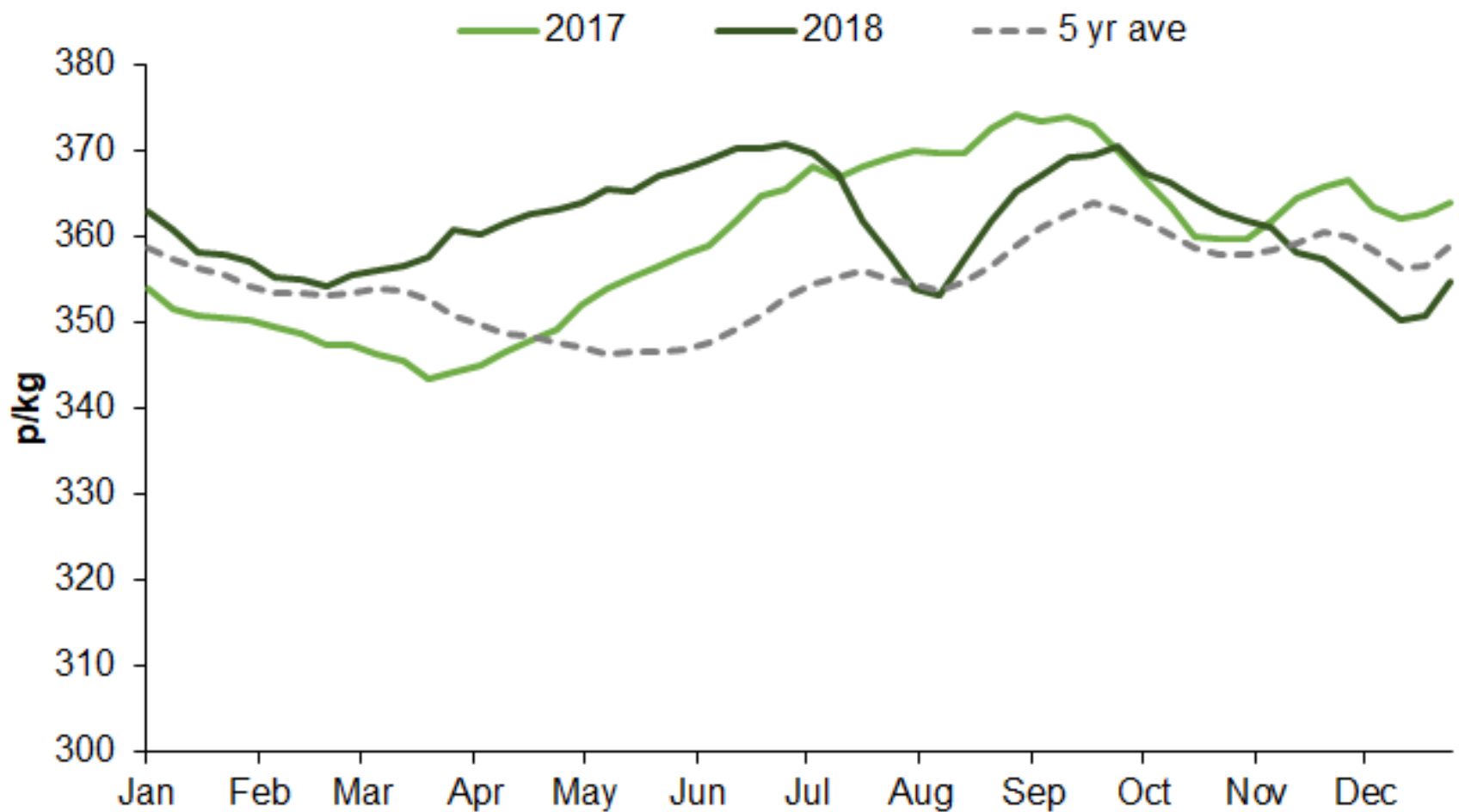
(Source: D Wyatt, AHDB B&L)

June census	2013	2014	2015	2016	2017
Average carcass wt (kg)	338	346	356	342	349
Finished beef price (£/kg livewt)	2.04	1.83	1.89	1.83	1.94

Average beef prices (29 Dec 2018)

- Dead wt = All Steers @ £3.56/kg, Heifers @ £3.56/kg, Young bulls @ £3.27/kg & Cull cows @ £2.10/kg
- Live wt = All Steers @ £1.96/kg, Heifers @ £2.07/kg, Young bulls @ £1.83/kg & Cull cows @ £0.98/kg
- Carcass conformation and fat class has a significant effect on price

GB all prime average deadweight cattle price



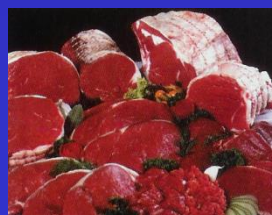
Source: AHDB

Meat Consumption (kg/capita)

	1990	1996	2000	2017
Beef & veal	17.5	12.6	16.0	18.2
Mutton & lamb	7.5	6.2	6.5	4.5
Pork & Bacon	21	21.4	21.0	25.9
Poultry	19.3	26.7	28.6	36.3

(Source: D Wyatt, AHDB B&L)

	2013	2014	2015	2016	2017
Beef & veal	17.3	17.8	18.2	18.2	18.2
Mutton & lamb	4.7	4.6	5.0	4.8	4.5
Pork & Bacon	24.1	24.4	25.0	26.2	25.9
Poultry	31.2	33.1	35.8	37.3	36.3



UK Beef Industry Trends

- No. of dairy cows & prime cattle slaughtering has declined
- UK 81% self sufficient in beef (75% inc. processed beef)
- Beef prices & consumption fell post BSE (1996) but are now recovering
- Export markets re-opened in 2006
- In 2017 in GB ~70,000 dairy bull calves were euthanised and ~50,000 were slaughtered as bobby calves or died
- The beef market now has two tiers:
 - Niche 'top shelf' usually with native breeds
 - Commercial 'best value' beef



UK Beef Industry Trends



- Carcase weights increasing
 - Dairy breed substitution (Friesian → Holstein)
 - Beef breed substitution (British → Continental)
 - Shift from 18 month to 24-30 month (extensive) beef production
 - Breed improvement (use of EBV's etc.)
- In 1985 65.8% of beef came from the dairy herd. In 2000 this fell to 43.8% due to BSE. In 2017 it was 52%
- In 2017 10.3% of prime cattle (16.4% of males) were finished as bulls i.e. intensively finished
- In 2015 46.2% of prime cattle were finished @ 24-36 months old in Great Britain
 - Dunbia - average age at slaughter = 28.7 months

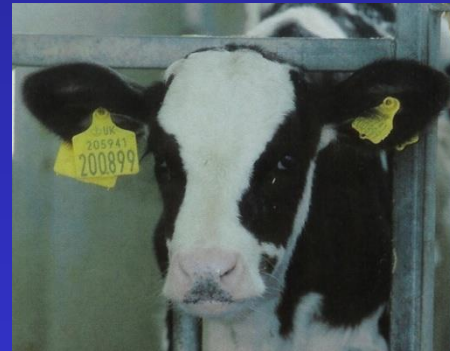
Beef Exports & BSE

- Due to BSE a ban on the export of British beef and was enforced in 1996 and the Over Thirty Months Slaughter Scheme (OTMS) was created. OTMS ended on 20th January 2006
- Cattle born pre August 1996 cannot be sold into the UK beef market
- The ban on the export of British beef and bovine products was lifted on 3 May 2006



Farm Assurance

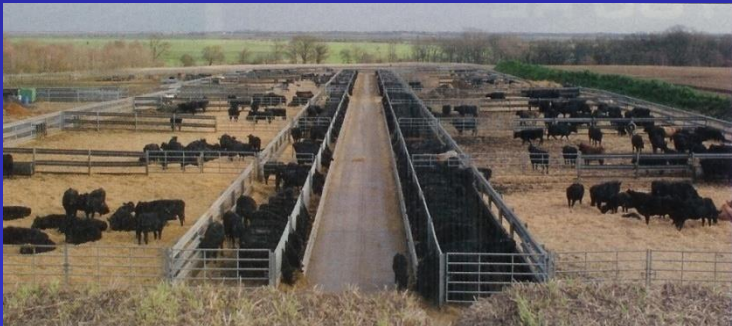
- The Assurance Schemes require that there is traceability of the beef produced
- The British Cattle Movement Service (BCMS) administers the Cattle Tracing System (CTS). Traceability requires that there are **Cattle Passports**. The birth, death and movements are recorded with **Double Tagging** of cattle



- “UK beef has a high welfare, provenance and production integrity compared to imports” (NBA quote 28/08/10)

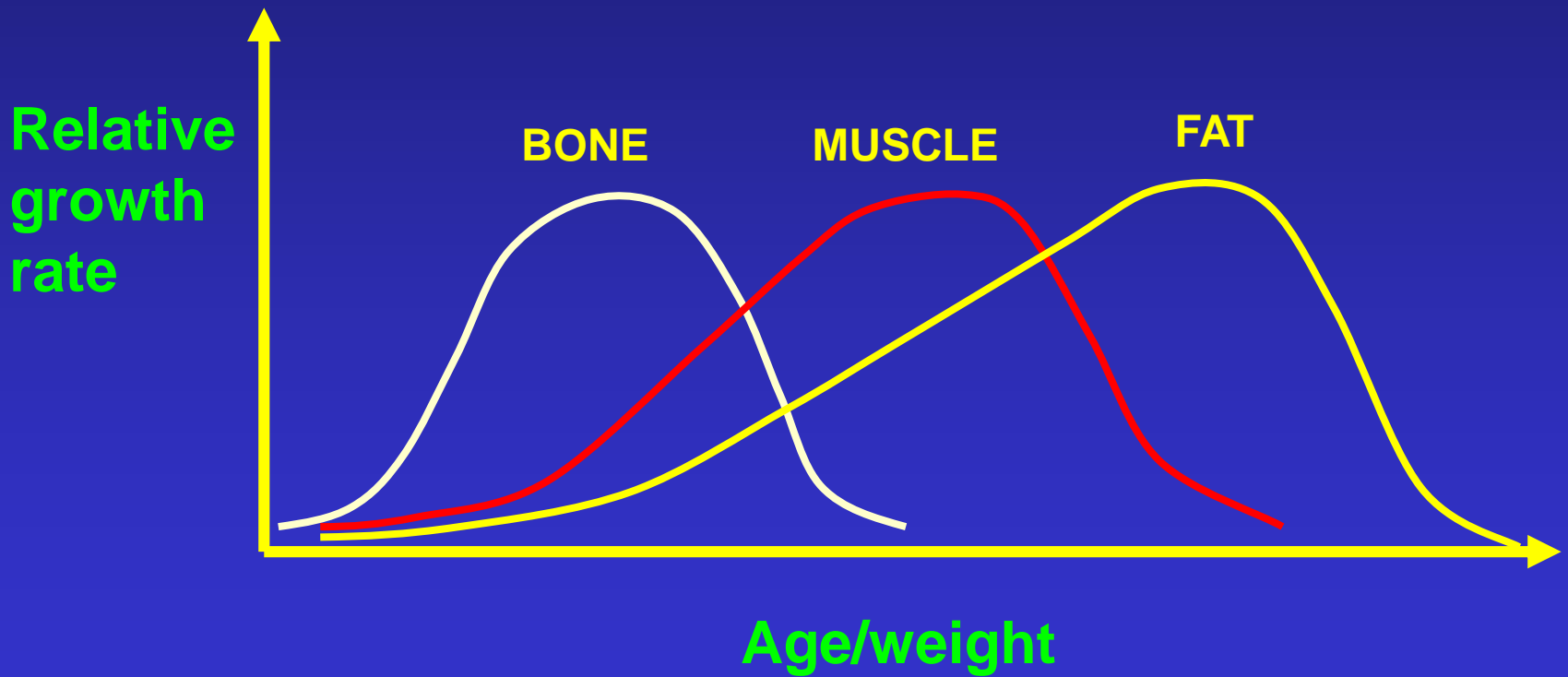
Profitable beef production is dependent upon:

- Correct choice of production system
- Breed selection/improvement
- 'Relative prices' for calves and finished beef i.e. focus on marketing
- Minimising feed costs and utilisation of home grown feeds
- High standard of management
- Low fixed cost structure



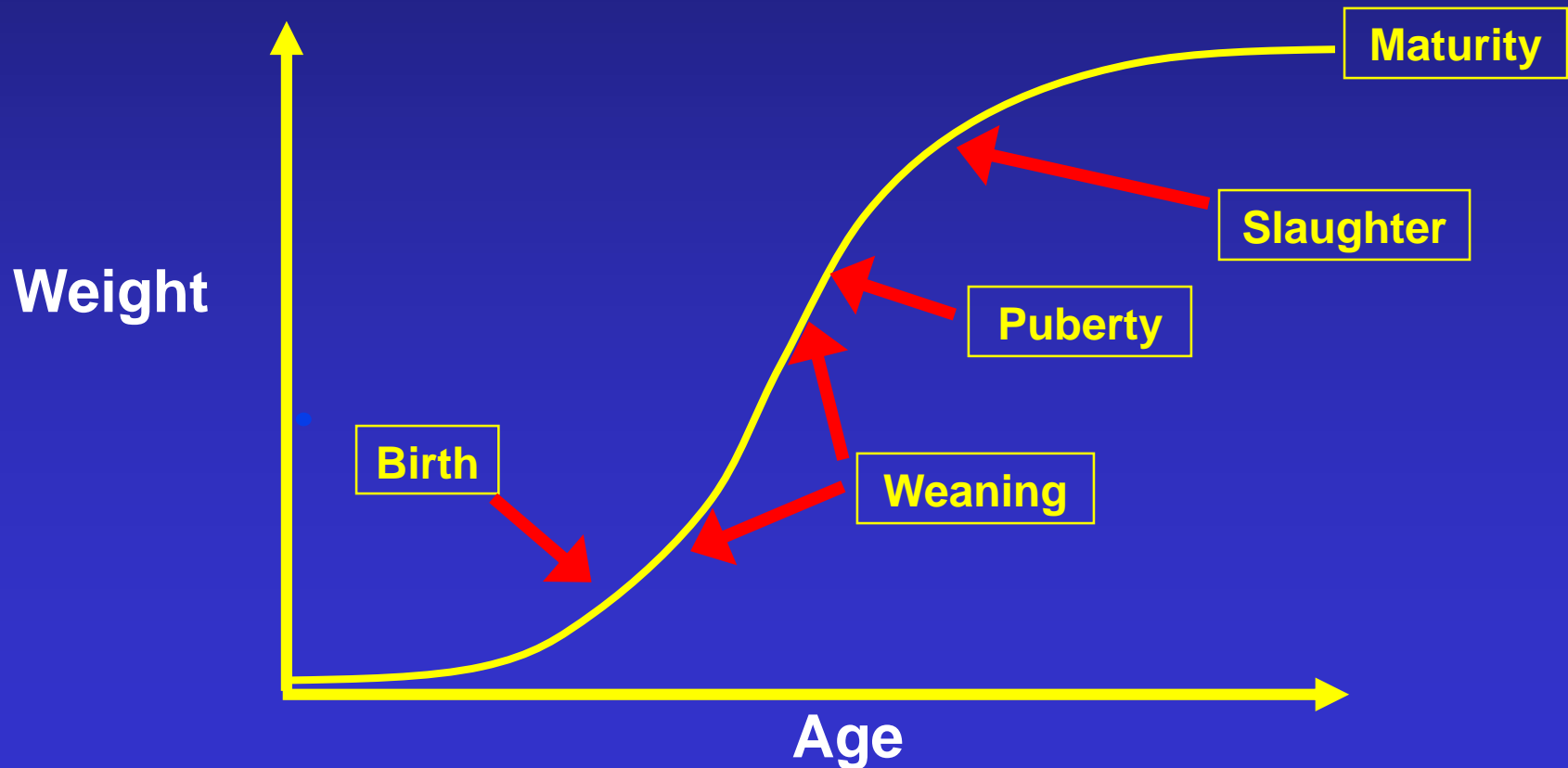
- Increased interest in 'integrated supply chains' i.e. ABP
Blade Farming, Co-op/Dunbia

Growth & Development



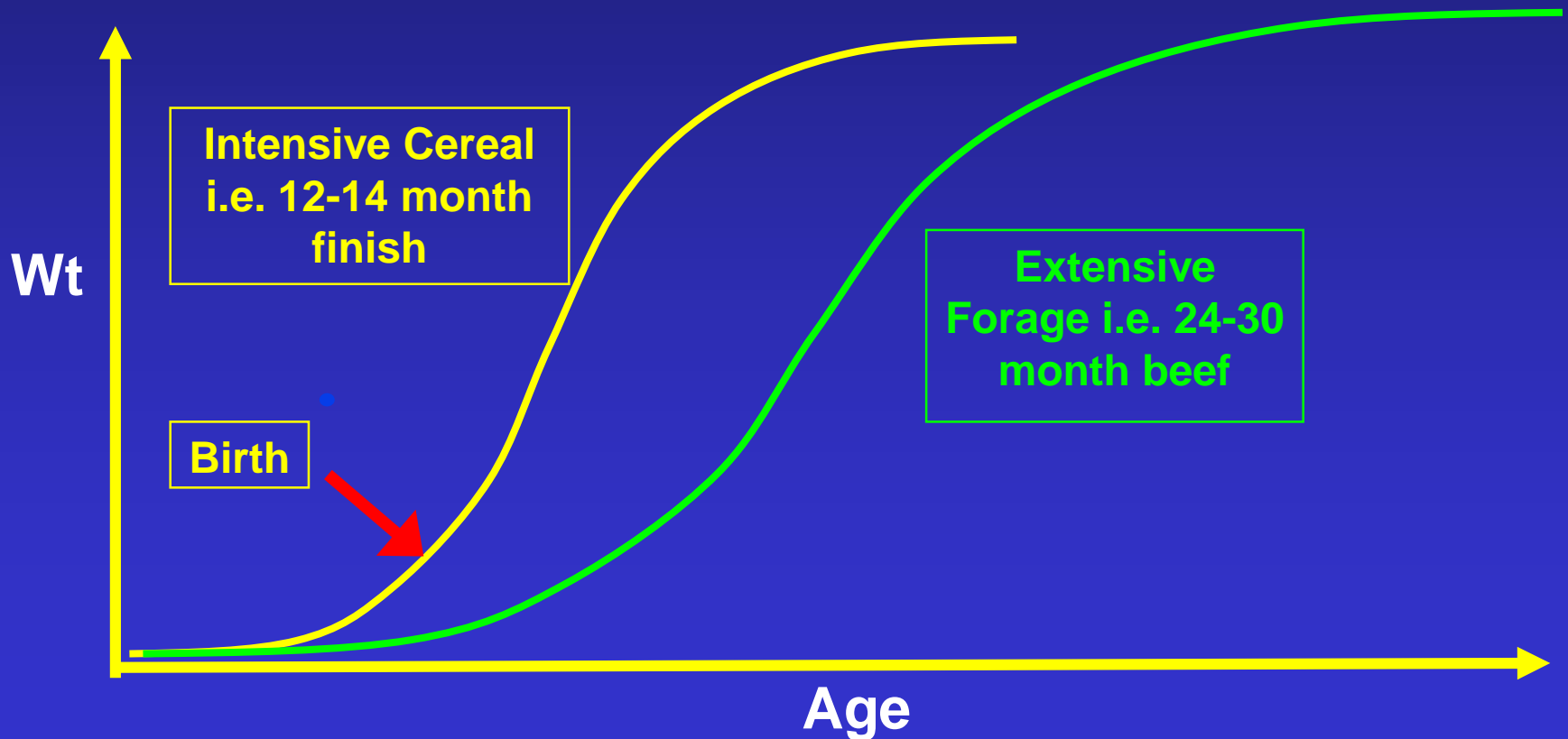
Sigmoidal growth curve

The growth pattern of cattle when fed *ad lib* throughout life will be **SIGMOIDAL** i.e. Cereal bull beef with dairy-bred calves



Effect of feed on the Sigmoidal growth curve

The sigmoidal growth curve is altered by nutrition. Concentrate feeding increases the rate at which animals mature



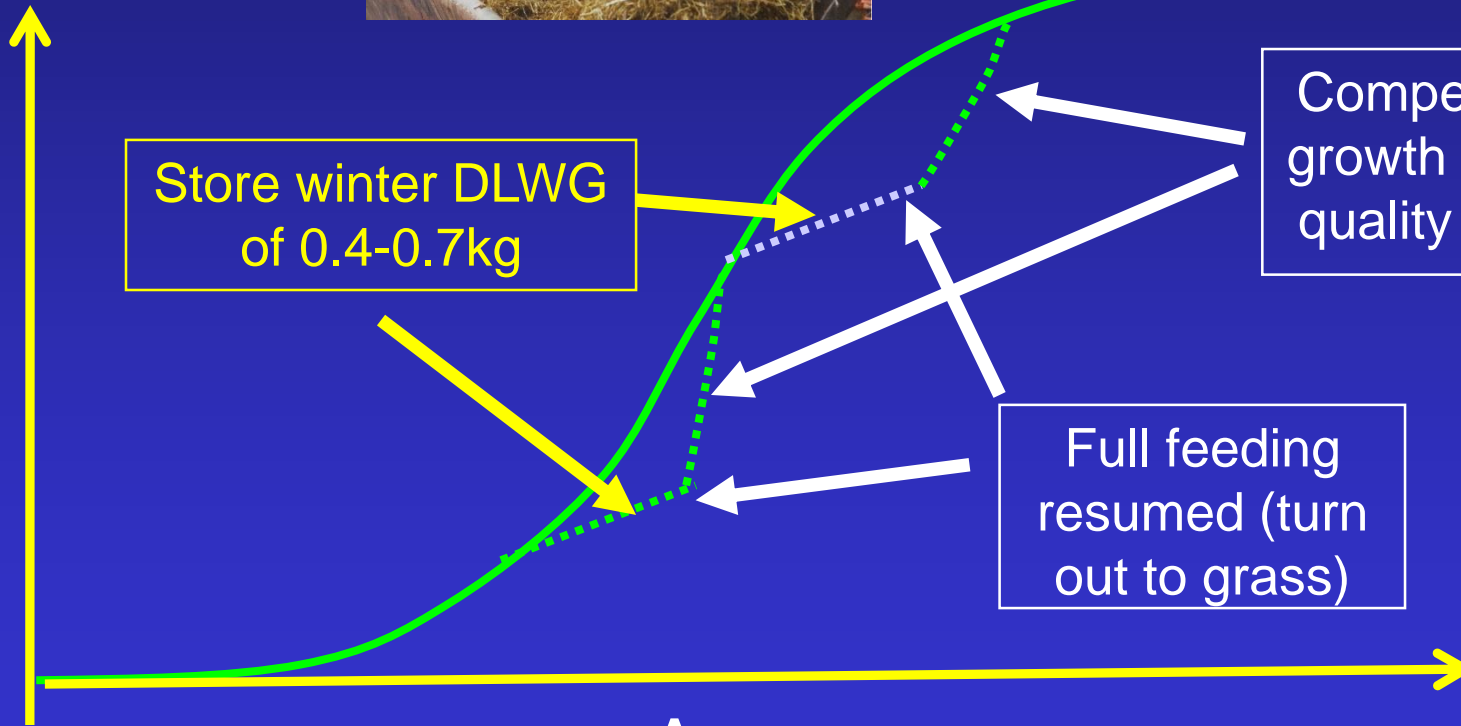
Compensatory Growth

- If beef cattle have their energy intake restricted, which leads to a slow rate of growth. Then if full feeding is resumed, an increased growth rate is achieved. This is greater than would have been achieved if normal feeding had been carried out during growth and results in the beef cattle being ready for sale at a similar age on a 24+ month system
- To take advantage of this, medium quality (65D/10.4ME) silage can be fed during the winter months (called the store period and hence store cattle) and then the cattle turned out onto high quality grass in the spring, compensatory growth with increased growth rates is achieved. Utilising compensatory growth reduces feed costs
- The objective of a store period which is (part of the growing phase) is to 'grow frame', especially with early maturing breeds, with DLWGs of 0.4-0.7kg prior to the finishing phase. Store rations should be high in fibre (from forage) and low in starch

Compensatory growth on a 24+ month beef system



Weight



Store winter DLWG
of 0.4-0.7kg

Full feeding
resumed (turn
out to grass)

Compensatory
growth on good
quality grazing

Age

Factors affecting growth

- **Breed**
 - **Early maturing breeds**
 - i.e. Native/British
 - **Late maturing breeds**
 - i.e. Continental
- **Sex**
 - **Bulls**
 - **Steers**
 - **Heifers**
- **Nutrition**
 - **High feed (intensive)**
 - **Low feed (extensive)**

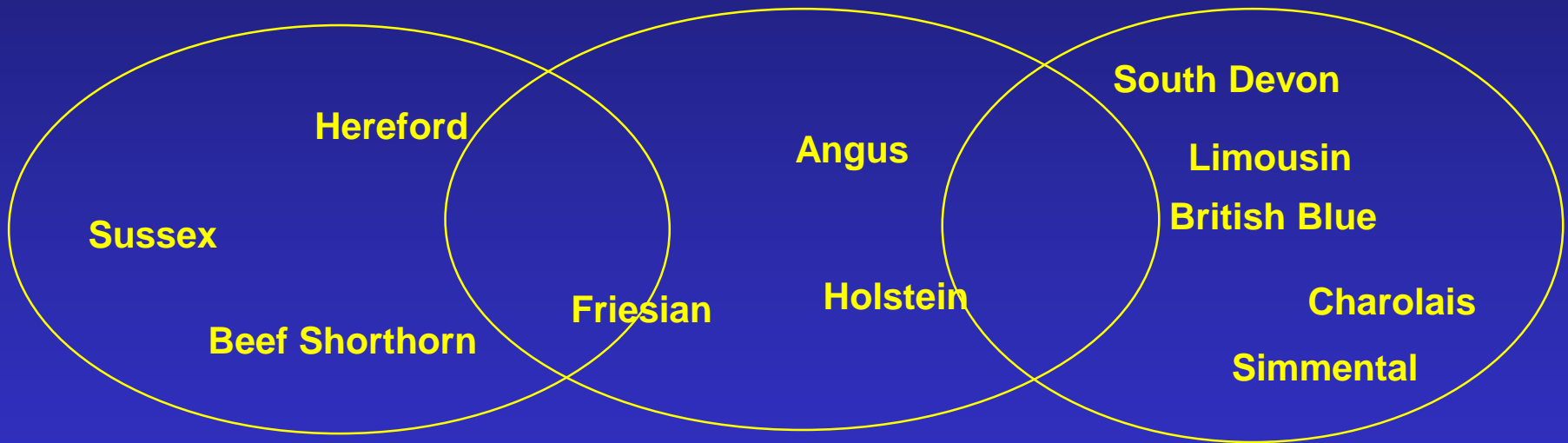


Factors affecting growth

a) Breed

Early Maturing

Late Maturing



Breed maturity when reared on the same system

- If LATE and EARLY maturing beef breeds were reared on an intensive system the LATE maturing breed would record the HIGHEST DLWG and HEAVIEST CARCASS WEIGHT when slaughtered at an identical fat class
- EARLY maturing breeds have easier calving's and finish easily off forage based diets. They are suited to grass based 'extensive' production systems finishing at 20-30 months old



Early versus late maturing beef breeds

	Early maturing	Late maturing
Breeds	Native/British	Continental
Mature size	Smaller	Larger
Birth weight	Light (35-45kg)	Heavy (40-55kg)
Gestation length	Short (~282 days)	Long (~287 days)
Ease of calving	Easy (1-3%)	Difficult (5-10%)
Potential growth rate	Average	High
Carcase weight	Light	Heavy
Carcase Fatness	Fatter (3-4H)	Leaner (2-3)
Carcase Conformation	Average (O+/R)	Good (R/U)
Total daily feed intake	Average	High
Proportion of concs in ration	Low	High
Length of finishing period	Short	Long
FCR	Same	Same
Suitable system	Grazing/Forage	Intensive

Cattle Breeds



- *Bos indicus*
i.e. Nelore, Brahman



- *Bos taurus*
 - 'British' e.g. Hereford, Angus,
 - 'Continental' e.g. Charolais, Limousin

- There are 25 British (Native) & 15 Continental cattle breeds in the UK



- Commercial beef production in the UK is predominantly based on cross-breeding

Beef Breeds



Charolais



Simmental



British (Belgian) Blue



Limousin



Hereford



Aberdeen Angus

BCMS Registrations (GB)	Number (2017)	Change from 2016	%
Limousin	484,497	-9,126	26
Angus	333,652	+22,681	18
British Blue	237,686	+15,267	13
Charolais	200,134	-7,633	11
Simmental	157,031	-2,721	8
Hereford	152,416	+6,524	8
Shorthorn	46,722	+27,886	3
Stabiliser	24,475	+3,989	1
Other beef breeds	214,868		12

Beef Breeds



Blonde d'Aquitaine



Beef Shorthorn



Stabiliser



Sussex

Beef Breeds



Welsh Black



Saler



South Devon



North Devon

Beef Breeds



Highland



Belted Galloway



Luings



Sim-Luings

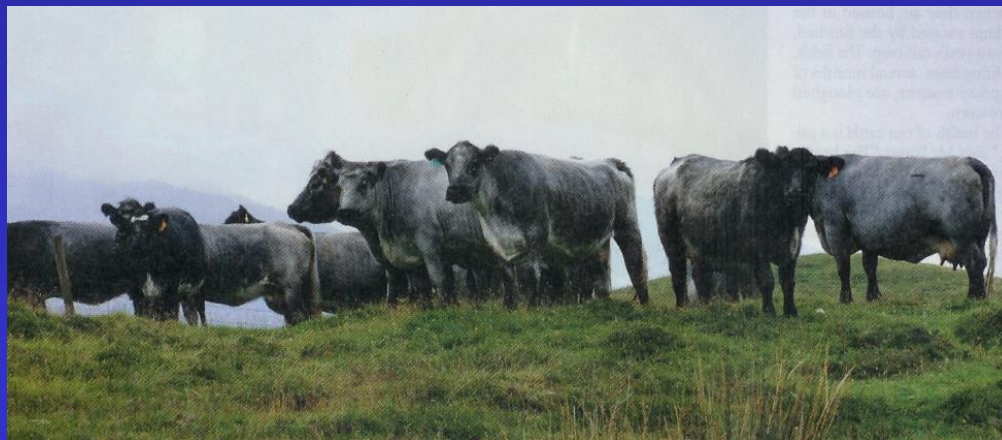
Beef Breeds



Galloway



Whitebred Shorthorn



Blue Grey

Beef Breeds



Lincoln Red



Longhorn



Murray Grey

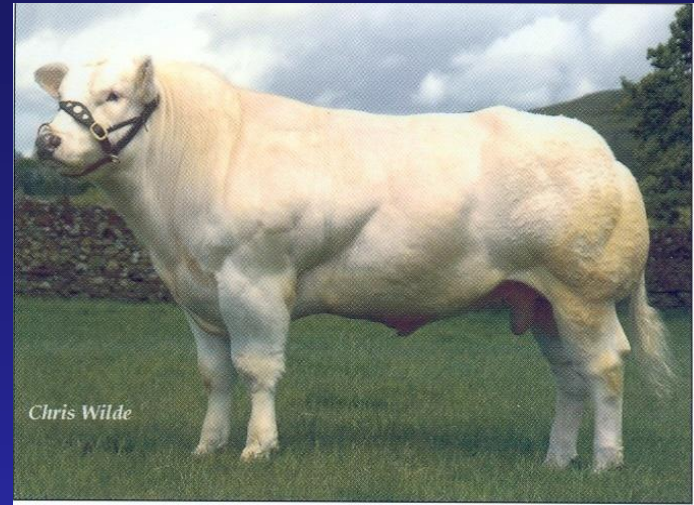


Red Poll

Beef Breeds



Black Limousin



British Blue



Red Angus



Bazadaise

Beef Breeds



Gascon



Parthenaise



Piedmontese



Speckle Park
(Angus/Shorthorn/White Park)

Beef Breeds



Wagyu



Wagyu calf



Wagyu steaks

Beef Breeds



Dexter



White Park



Irish Moiled



Blue Albion

Beef Breeds



Romagnola



Meuse Rhine Issel



Gelbvieh



Fleckvieh

Beef Breed Registrations in GB (%)

Breed	2003	2014	2015	2016	2017	% Change 2003-2017
Limousin	35.2	28.1	27.7	26.6	26.2	-25.6
Angus	9.4	17.1	16.6	16.9	18.0	+91.4
British Blue	9.4	11.3	11.5	12.1	12.8	+36.1
Charolais	19.2	12.4	12.1	11.3	10.8	-43.7
Simmental	11.9	9.4	9.0	8.7	8.5	-28.6
Hereford	4.7	6.6	7.4	7.9	8.2	+74.4
Shorthorn	N/A	0.6	0.8	1.0	2.5	N/A
Stabiliser	N/A	0.7	0.8	0.9	1.3	N/A
Other breeds	5.7	11.8	12.3	14.6	11.6	+172

(Source: BCMS, May 2018)

1,728,388 Beef sired calves registered in 2014

1,755,357 in 2015

1,845,296 in 2016

1,851,481 in 2017

'Other breeds' which have increased include Sussex, Longhorn and Devon. Blondes in decline.



Beef Breed Substitution

British Breeds



Continental Breeds



i.e. Hereford

<1970



i.e. Limousin

>1970

Since ~2010 there has been a gradual switch back to native breeds, especially Angus, Hereford and Beef Shorthorn



A historic occasion at Perth in 1963 when Lindertis Evulse sold for the breed record price of 60,000gns. (L to R) Charlie Gorn at the halter, buyers Gar Douglas and Jack Dick of Black Watch Farms, New York, USA, Lee Leachman, Ankony Farms, New York, leading buyer, Clint Tomson, Chicago, and sellers, Sir Torquil and Lady Munro, Lindertis, Kirriemuir



Trueman Jagger sold for 140,000 gns at Carlisle, October 2015 to a consortium of buyers

The majority of 'prime' beef cattle and suckler cows are cross-bred

- Note that the sire breed is always the first named breed for a cross-bred i.e. Limousin cross Holstein



British Blue x
Holstein-Friesian bulls



Hereford x
Friesian steers



Limousin x Holstein-Friesian
suckler cows



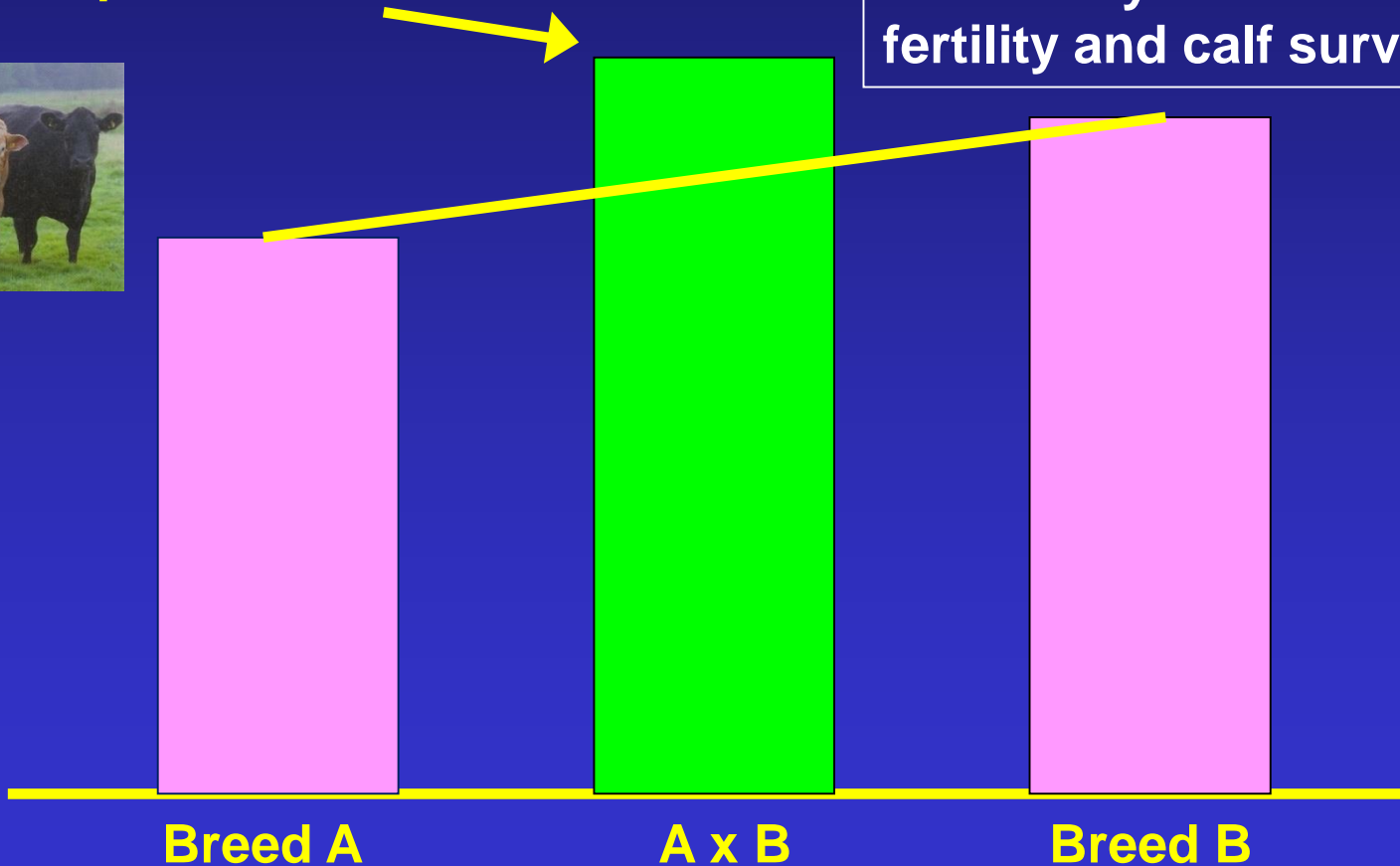
Angus x Friesian
suckler cow

Hybrid vigour, the advantage to crossbreds over the average of the parent breeds

Hybrid vigour = extra performance above mid-parent mean



Hybrid vigour particularly improves traits with low heritability such as fertility and calf survival



(adapted from Simm 1998)

Factors affecting growth

b) Sex

Heifers are early maturing, steers are intermediate and bulls are late maturing. **Sex overrides beef breed regarding maturity i.e. a Continental x heifer is an early maturing beef animal**

Performance of bulls, steers and heifers reared on an intensive cereal beef system

	Bulls	Steers	Heifers
Age at slaughter (mo)	13.8	13.2	13.0
Slaughter wt (kg)	583	534	488
DLWG (kg)	1.44	1.36	1.26
Carcase wt (kg)	317	283	261
Carcase grade	R/-U 4L	R 4L	O+/R 4L/4H
FCR (kg feed: kg LWG)	5.43	5.69	5.81

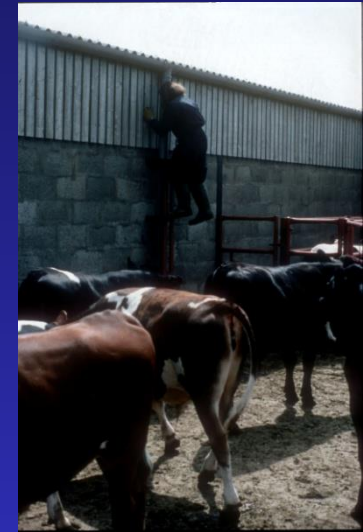
(HAU Beef Unit - Trial Report 1997a)

Effect of sex on beef cattle performance

Bulls v Steers

Bulls

- grow 10% more quickly
- have 8-10% better FCR
- are 10% heavier at the same fat class
- have superior conformation
- and are more temperamental!

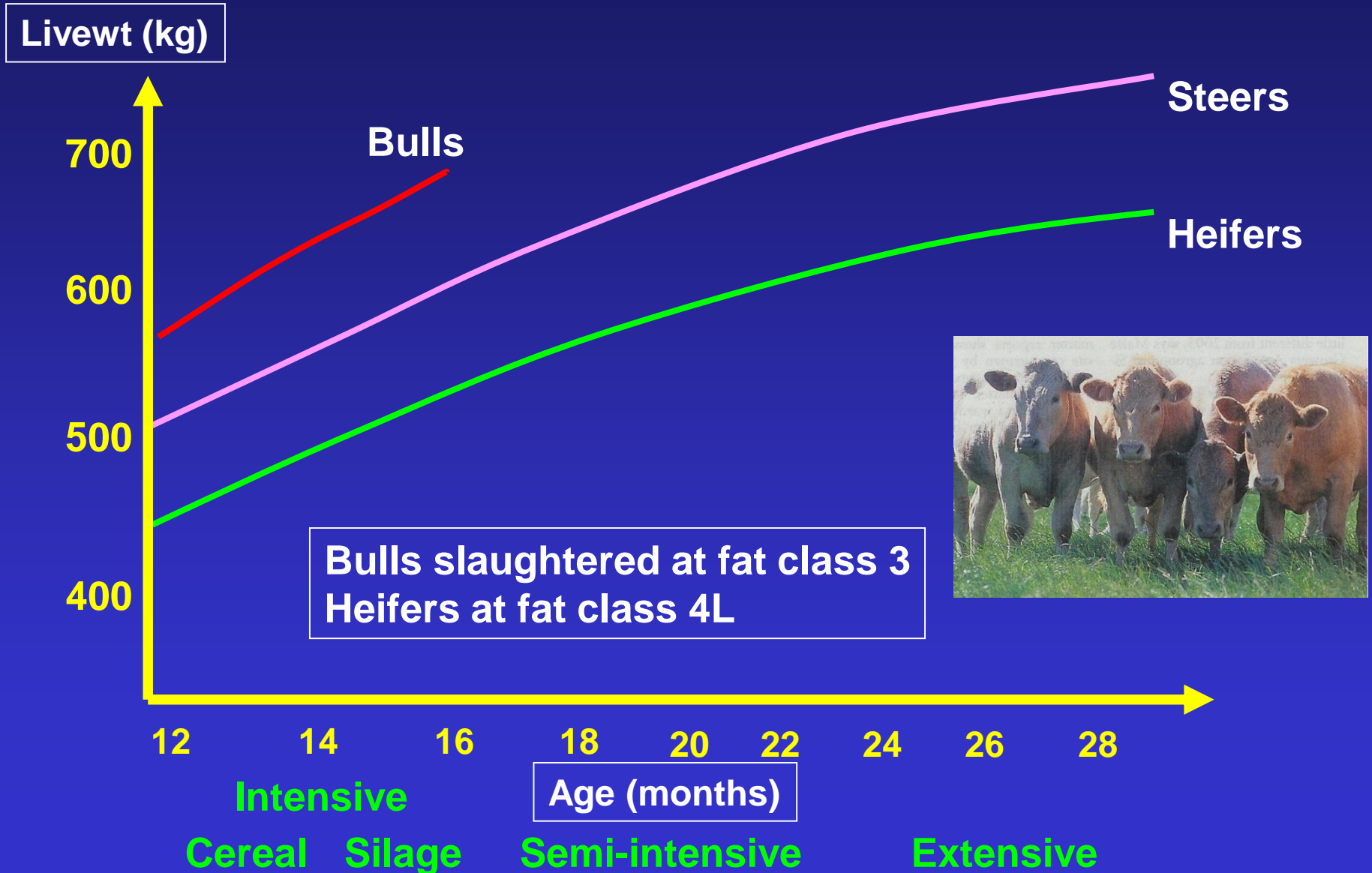


Steers v Heifers

Heifers

- grow 10% more slowly
- convert feed to live weight gain less efficiently
- are 10% lighter at the same fat class
- have poorer conformation

Slaughter age/weight relationship in Charolais crosses



Ranking of cattle of different breed types in terms of slaughter weight and rate of maturity



Bulls

Charolais
Simmental

Limousin
South Devon

Holstein

British Blue

Angus

Steers

Hereford

Heifers



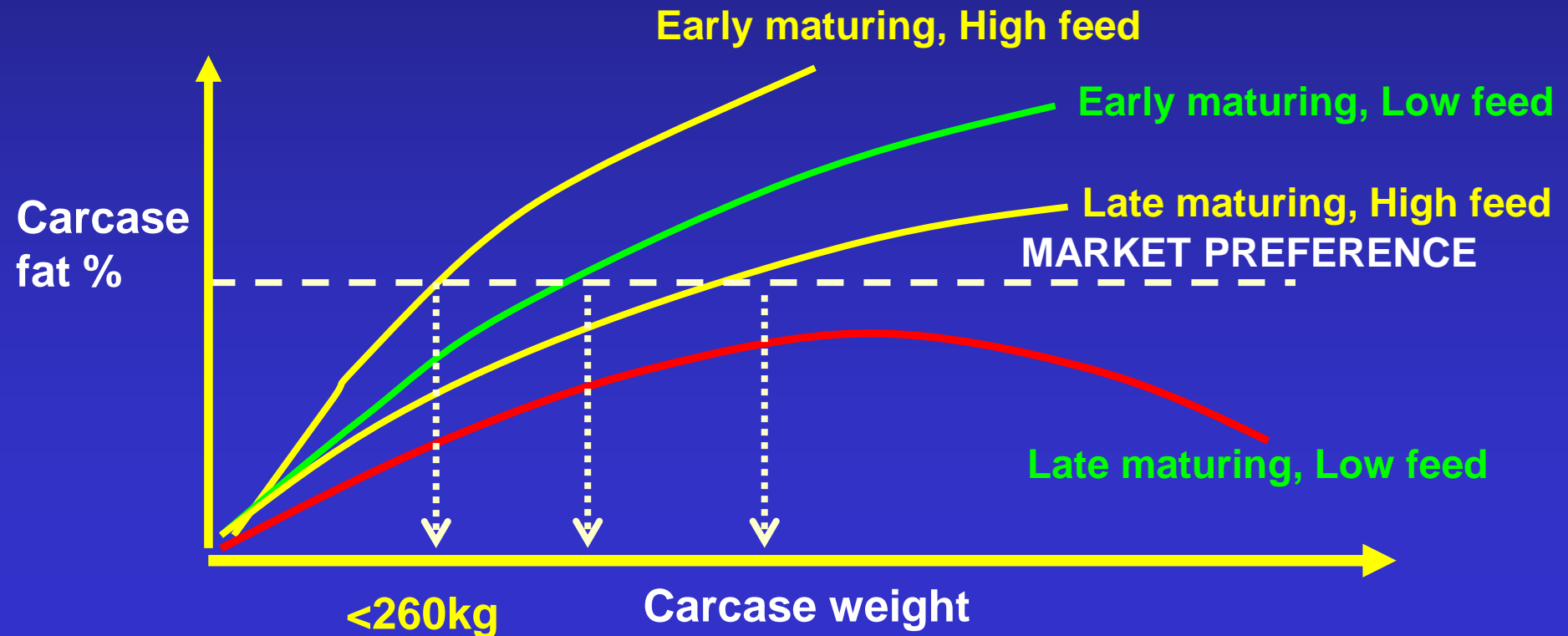
Increasing maturity and slaughter weight

Sex overrides beef breed regarding maturity i.e. a Continental x heifer is an early maturing beef animal

Factors affecting growth

c) Nutrition

A high plane of nutrition e.g. feeding concentrates leads to fat being deposited sooner. Conversely a low plane of feeding utilising forage means fat will be deposited later.



Choice of breed of Bull

The choice of bull is dependent on a number of factors:



(i) Assisted calvings & mortality

	Assisted calvings (%)	Calf mortality (%)
Charolais	9.6	4.8
Simmental	9.3	4.2
Limousin	7.2	4.4
Hereford	3.8	1.6
Angus	3.1	1.3

(Allen 1990)

The choice of beef breed is dependent on a number of factors:

(ii) Growth rate (kg) and conformation - which will affect sale price i.e. £/kg



(iii) Calf sales

- depends on calf weight (kg) and price per kg

Calf 200 day wts (kg)	Lowland Herds	Hill Herds
Charolais	240	205
Simmental	232	198
Limousin	225	186
Hereford	201	184
Angus	194	176



(Allen 1990)

Survey of commercial suckler herds in Northern Ireland – Bull Breeds

Breed of Bull	Dystocia score (1-5)	Carcase wt (kg)	Carcase conformation (1-5)	Carcase value (£)
Angus	1.46	306	3.12	505
Blonde	1.49	327	3.29	544
Limousin	1.50	318	3.34	535
Charolais	1.54	324	3.29	544
Simmental	1.58	318	3.24	531
British Blue	1.69	334	3.58	566

* Dystocia score: 1 = unassisted calving, 5 = caesarean



(Kirkland *et al.*, 2004)

Performance of various dairy-bred beef cattle on 24 month beef systems

Sire breed	DLWG (kg)	DMI (kg)	FCR	Slaughter wt (kg)	Slaughter age (days)
Friesian	0.67	4.65	6.7:1	559	768
Holstein	0.70	4.91	6.8:1	619	814
Hereford x Fr	0.66	4.21	6.2:1	515	714
Charolais x Fr	0.75	4.66	6.1:1	627	772
Limousin x Fr	0.72	4.37	5.9:1	587	760



(Southgate *et al.*, 1988)

Carcase results for various dairy-bred beef cattle on 24 month beef systems

Sire breed	KO %	Carcase wt (kg)	Conf class* (1-15)	Lean in carcase (g/kg)	Lean: Bone Ratio (g/g)
Friesian	50.3	282	4.52	612	3.66
Holstein	50.1	311	2.73	591	3.46
Hereford x Fr	50.6	261	6.19	618	3.88
Charolais x Fr	53.0	332	7.82	617	3.92
Limousin x Fr	53.0	312	8.09	633	4.30

(Kempster *et al.*, 1988)



Matching the animal to the system

- **BULLS and LATE maturing breeds** are suited to a high plane of nutrition and an **INTENSIVE 12-15 month system**
- **HEIFERS and EARLY maturing breeds** are suited to a low plane of nutrition and an **EXTENSIVE 18-30 month beef system**



Beef Breed Improvement

Charolais



Blelack Digger (TI+85 - Top 1%)

1970's



2014

Beef Breed Improvement - Simmental



Overhall Allendorf. First Simmental bull ever sold at auction, realising 2,400 gns.



1972



**Bel Dhu Capercaillie. Sold @
Stirling Feb 2013 for 45,000gns**

2013

Beef Breed Improvement

Hereford



Normanton 1 Eastern Promise

1970's



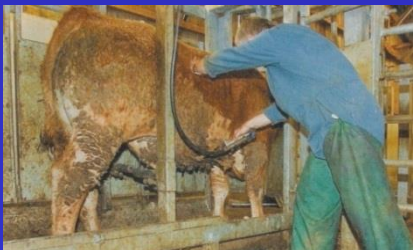
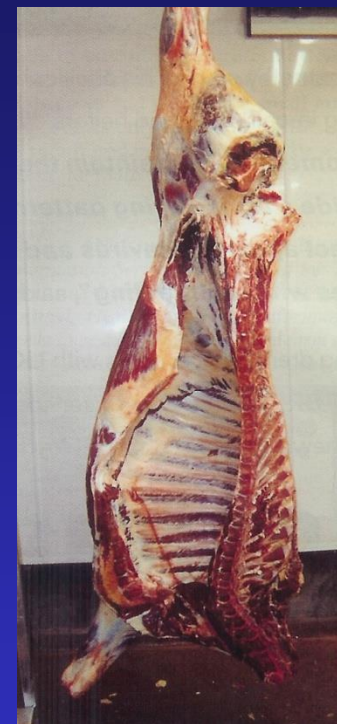
2014

Beef Cattle Marketing and Selection of Cattle for Slaughter



Selection of Cattle for Slaughter

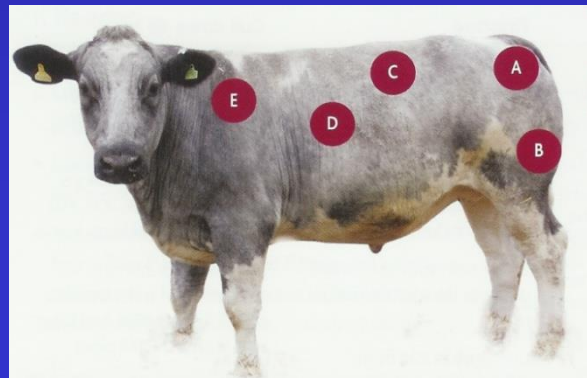
- Beef cattle kill out @ 50-60%
 - Holstein bulls ~ 51%
 - $\frac{3}{4}$ Continental bred 57-60%
- Target carcass weight is 260-380 (420kg)
 - i.e. 475-675kg live weight
- ‘Clean Beef’ slaughter age is 12-36 months
 - Up to 8 months old = veal
 - Young bulls up to 16 months
 - Cull cows & stock bulls over 30 months
 - Born pre-August 1996 not allowed into the food chain



- Cattle marketed either 'live' (18%) or 'dead weight' (82%)
- Selection for slaughter based on fat cover (finish).
 - Handling points are the 'tailhead', ribs and loin
 - It is inefficient to produce 'excess fat'
- Conformation class: > E, U+, -U, R, O+, -O, P+, -P

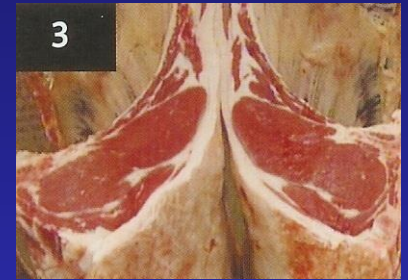
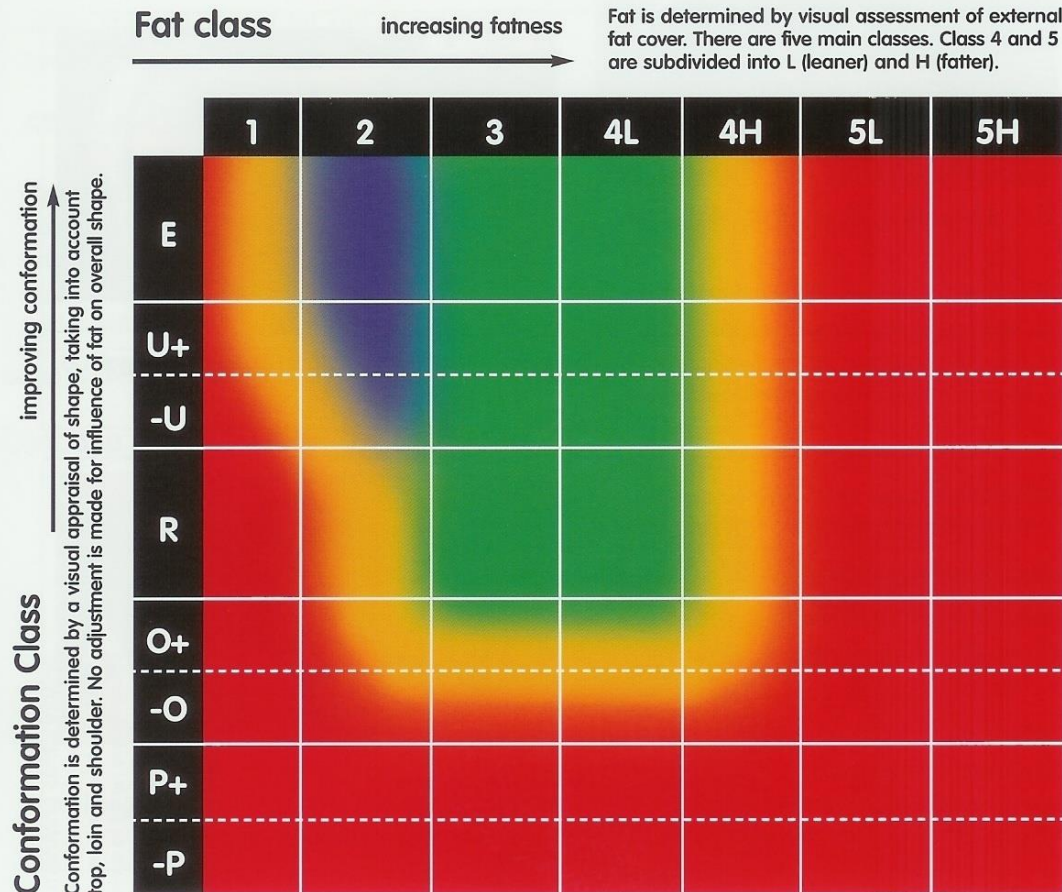
← improving conformation
- Fat class: > 1, 2, 3, 4L, 4H, 5L, 5H

→ increasing fatness
- Fat requires 4 times more energy to grow compared to lean tissue



Selection of Cattle for Slaughter

Carcase classification for prime cattle



VIA grading likely to be implemented in the near future



ABP England & Wales (01/05/14)

Cattle Payment Grid

B = Base Price
R = Realisation

	1	2	3	4L	4H	5L	5H
E	B	+25	+25	+25	+15	-25	R
U+	B	+20	+20	+20	+10	-25	R
-U	B	+10	+10	+10	+5	-25	R
R	-50	B	B	B	-6	-30	R
O+	-60	-15	-10	-10	-25	-40	R
-O	-70	-40	-30	-30	-40	-55	R
P+	-150	-60	-50	-50	-60	-80	R
-P	-150	-70	-60	-60	-60	-80	R

Base Price given is on a delivered deadweight basis for steers & heifers
260 – 450Kg Base

260 – 250Kg -20p (-O to -P = -40p)

250 – 240 Kg -40p (-O to -P = -60p)

240 – 230Kg -60p (-O to -P = -80p)

230 – 220Kg -70p (-O to -P = -90p)

Under 220Kg = -90 or R (-120p)

Heavyweights +450kg = -20p

Base price quoted is for farm assured Steers and Heifers under 30 months old.

5p deduction for Steers and Heifers over 30 months and up to 36 months.

Different price grid for Steers and Heifers over 36 months.

Young bulls under 16 months old are 5p below the steer/heifer base price.

Over age bulls between 16 and 24 months are -75p

Mature bulls over 24 months will be paid the Stock bull price.

Non farm assured and cattle under 12 month old are -100p/kg/Realisation.

Kill Charges - £16.25 (Inc Insurance & Excluding VAT)

Dressing Spec - UK Specification



ABP England & Wales (10/11/15)

	Fat	1-	1=	1+	2-	2=	2+	3-	3=	3+	4-	4=	4+	5-	5=	5+	
Conf		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
E+	15	-10	-10	-10	+5	+15	+35	+35	+35	+35	+35	+35	+35	-15	-30	-35	-40
E=	14	-15	-15	-15	+5	+15	+30	+30	+30	+30	+30	+30	+30	-15	-30	-35	-40
E-	13	-20	-20	-20	+5	+15	+25	+25	+25	+25	+25	+25	+25	-15	-30	-35	-40
U+	12	-25	-25	-25	+5	+15	+20	+20	+20	+20	+20	+20	+20	-15	-30	-35	-40
U=	11	-30	-30	-30	+5	+15	+15	+15	+15	+15	+15	+15	+15	-15	-30	-35	-40
U-	10	-35	-35	-35	+5	+10	+10	+10	+10	+10	+10	+10	+10	-15	-30	-35	-40
R+	9	-40	-40	-40	-5	-5	+5	+5	+5	+5	+5	+5	+5	-15	-30	-35	-40
R=	8	-60	-50	-40	-10	-10	B	B	B	B	B	B	B	-15	-30	-35	-40
R-	7	-70	-60	-50	-15	-15	-5	B	B	B	B	B	-5	-15	-30	-35	-40
O+	6	-80	-70	-60	-20	-20	-15	-15	-15	-15	-15	-15	-15	-25	-55	-55	-65
O=	5	-90	-80	-70	-40	-40	-30	-30	-30	-30	-30	-30	-30	-50	-75	-75	-75
O-	4	-100	-90	-80	-60	-60	-45	-45	-45	-45	-45	-45	-45	-70	-110	-110	-110
P+	3	-150	-150	-150	-80	-80	-60	-60	-60	-60	-60	-60	-60	-90	-110	-110	-110
P=	2	-150	-150	-150	-90	-90	-80	-80	-80	-80	-80	-80	-80	-100	-110	-110	-110
P-	1	-150	-150	-150	-100	-100	-100	-100	-100	-100	-100	-100	-100	-120	-160	-160	-160

Base Price given is on a delivered deadweight basis for steers & heifers = 260 – 420Kg Base

260 – 250Kg –20p (-O to –P = -40p), 250 – 240 Kg –40p (-O to –P = -60p), 240 – 230Kg –60p (-O to –P = -80p), 230 – 220Kg –70p (-O to –P = -90p), Under 220Kg = -90 or R (-120p)

Heavyweights: 420-430kg -15p, 430-440kg -30p, 440-450kg = -45p. Maximum weight of 450kg, cattle over 450kg will be paid at gross 450kg

Base price quoted is for Farm Assured Steers and Heifers under 30 months old. Young bulls under 16 months old with a minimum residency of 30 days and a maximum of 4 farms. Animal <30 days residency and more than 4 farms -10p/kg. 5p deduction for Steers and Heifers over 30 months and up to 36 months. Steers and Heifers over 36 months paid at cow base grid. Over age bulls between 16 and 24 months are -75p Mature bulls over 24 months will be paid the Stock bull price. Non British Cattle (foreign) are -100p/kg/Realisation.

Kill Charges - £19.15 (Inc Insurance & Excluding VAT), Dressing Spec - UK Specification

Beef prices for steers – £/kg carcass weight



Conformation class

Fat class

	3	4L	4H
-U	3.65	3.65	3.62
R	3.61	3.66	3.66
O+	3.47	3.54	3.47
-O	3.19	3.23	3.06

(Source: Farmers Weekly 4 January 2019)

i.e. if the carcass weight is 350kg and the carcass grades -U3, the return to the farmer is:

$$350\text{kg} \times \text{£}3.65 = \text{£}1,276$$

Carcasses hitting the 'target grade'

- GB Beef Cattle Performance Summary:
 - 54.6% of carcasses at 'R4L or better'
 - 10.1% of carcasses too fat (4H or fatter)
 - 31.1% of carcasses lean (1-4L) but poor conformation
 - 4.2% of carcasses too fat and poor conformation



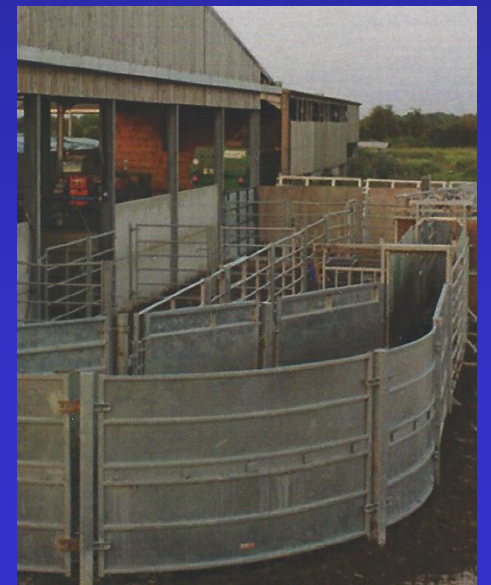
(Source: EBLEX Beef Briefing 7 April 2015)



Cattle housing

- Keep housing systems simple and cost effective
- Do not house 'young cattle' with 'older cattle' in the same air space
- Keep lying areas as dry as practical. Ideally beef yards are 2/3rd bedded and 1/3rd feed passageway
- Ensure generous ventilation but minimise draughts
 - Open ridges/slotted roof
 - Ridge extractor fans or Forced fan ventilation? i.e. 'Proctor' fans
 - Adequate lights. Consider 16 hours daylight/8 hours low level red spectrum
 - NO COBWEBS!

- Site water troughs for ease of inspection and cleaning
- Consider clipping out cattle's backs (30cm)
- Avoid dusty feed and bedding
- Small group size preferred
 - Dairy bulls up to 20 per pen
 - Homebred sucker bulls can be up to 60 per pen
 - **DO NOT mix groups of bulls**
- Provide handling facilities for cattle



- Do not lock gates that cannot be opened quickly in an emergency i.e. fire
- Consider slatted housing in areas with expensive straw
 - Use slotted rubber mats

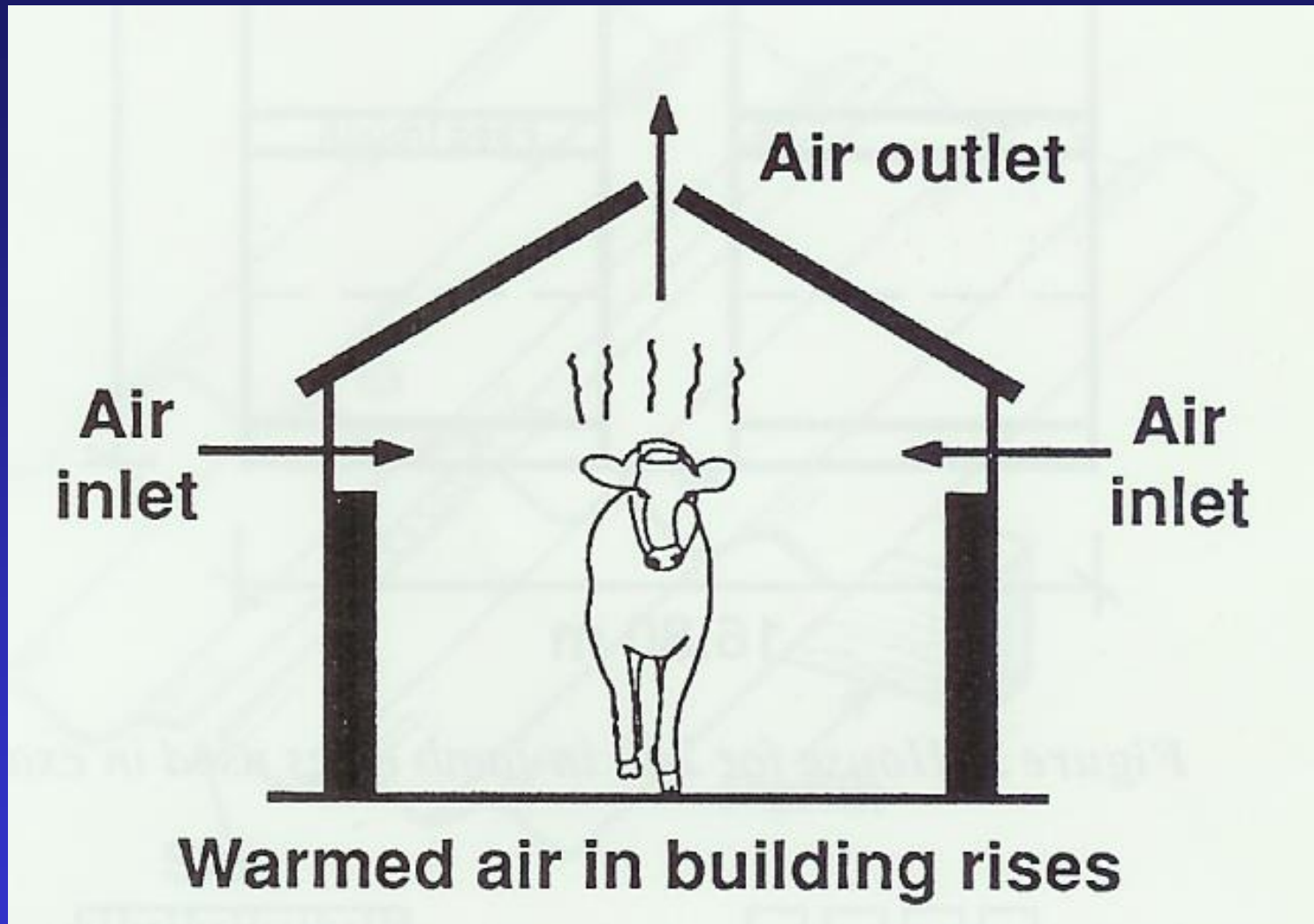


- Consider open corrals in low rain fall areas with good straw availability



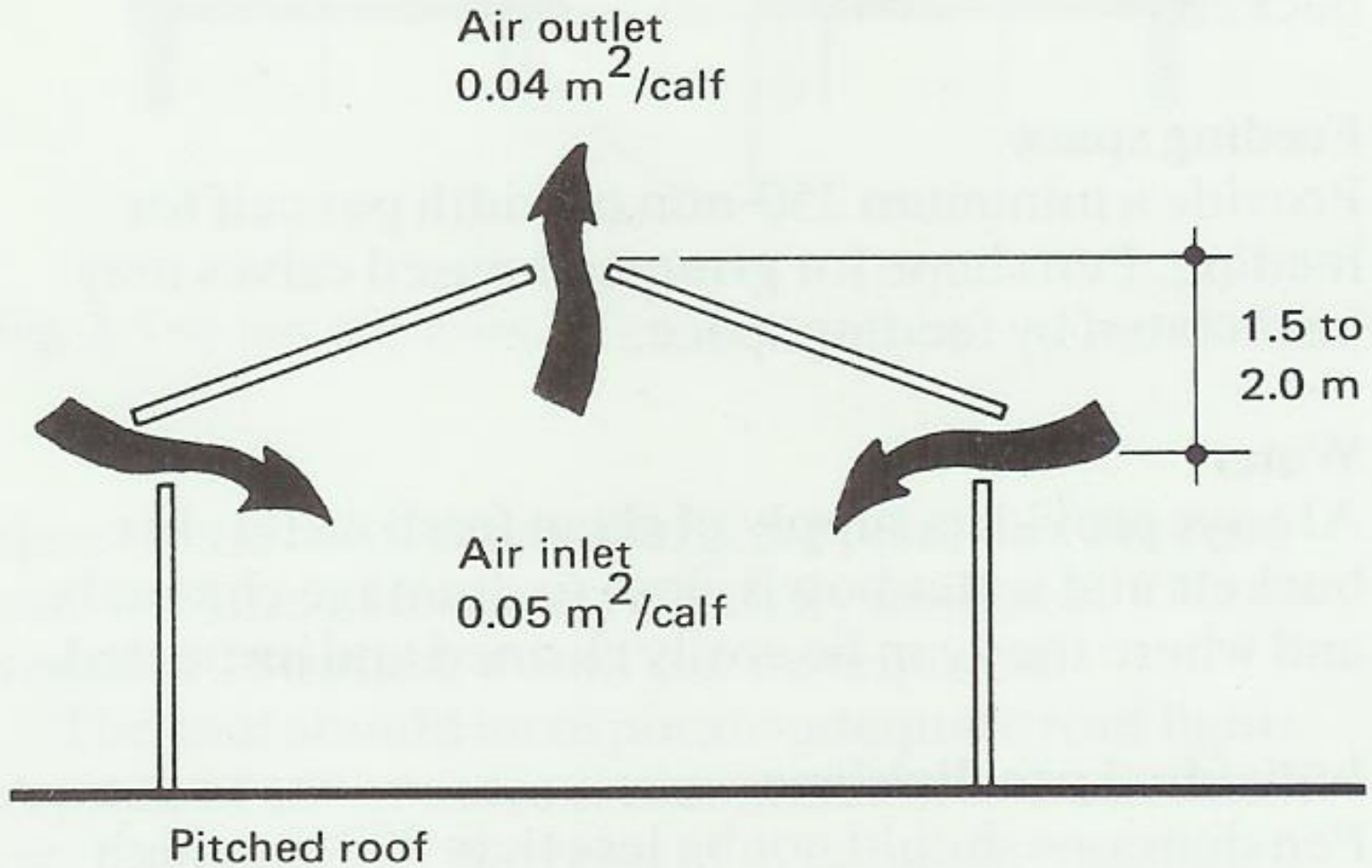
- Woodchip corrals now regulated
- See AHDB BRP 'Better Cattle Housing Design' and BRP Manual No. 6

'Stack effect' ventilation in calf housing

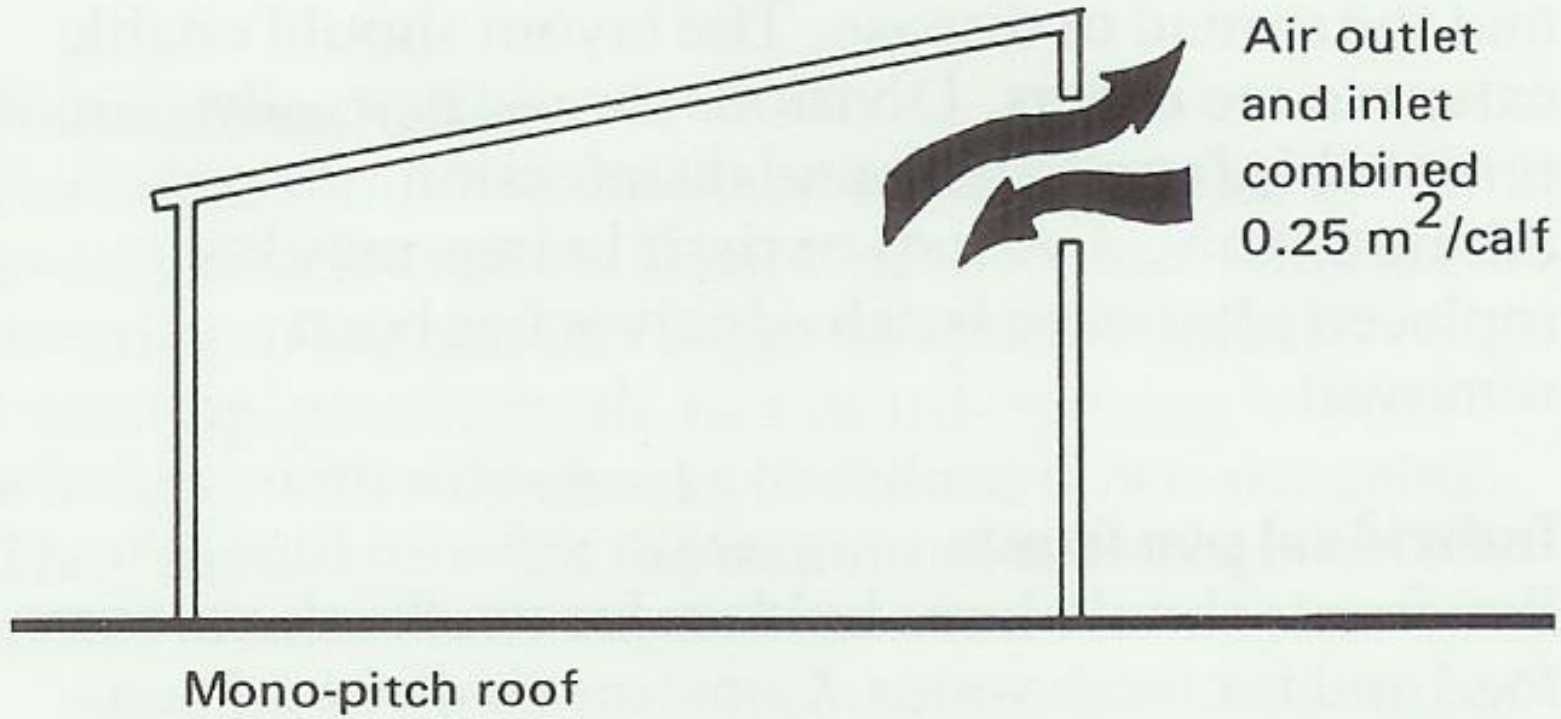


A 500kg beef animal produces 800 watts of energy per day

Calf housing



Calf housing



Calf housing

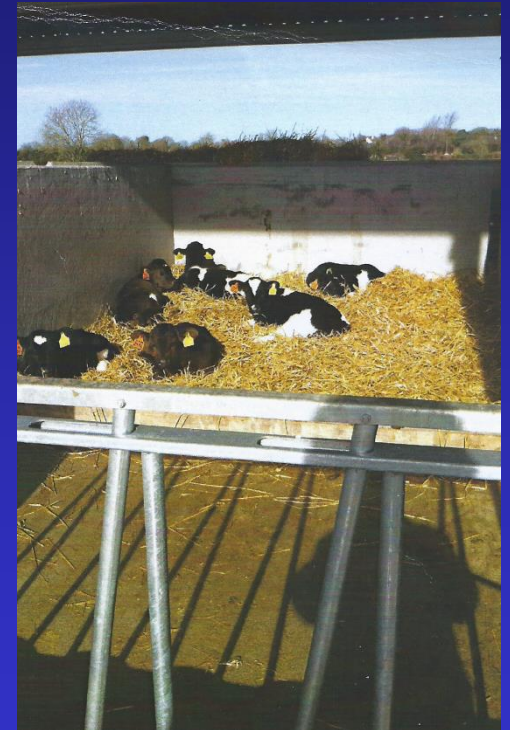


**13,000 head Calf Rearing
Unit - USA**

Lean-to (mono-pitch) calf housing

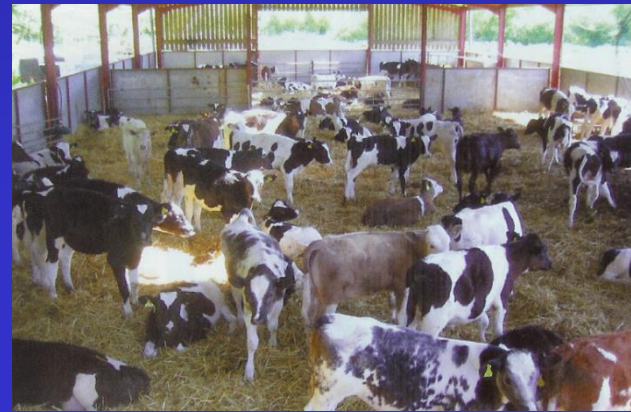
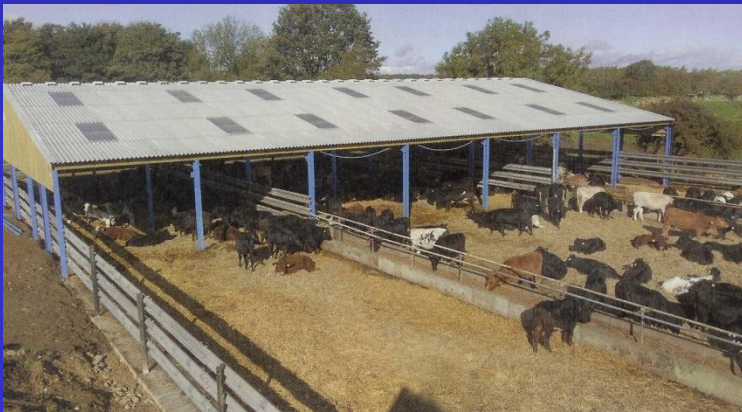


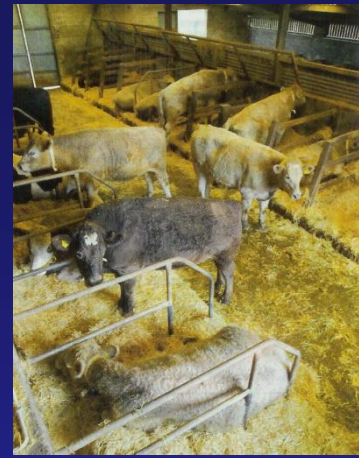
**Over hang at the back keeps
the pens dryer**



(Source: Bonanza Calf Nutrition - 2014)

Cattle housing





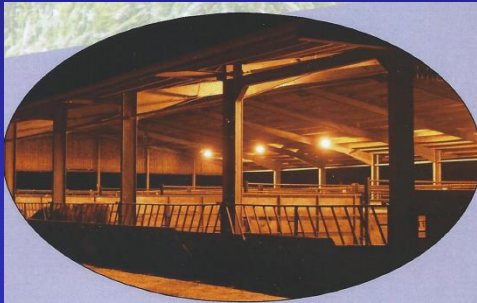
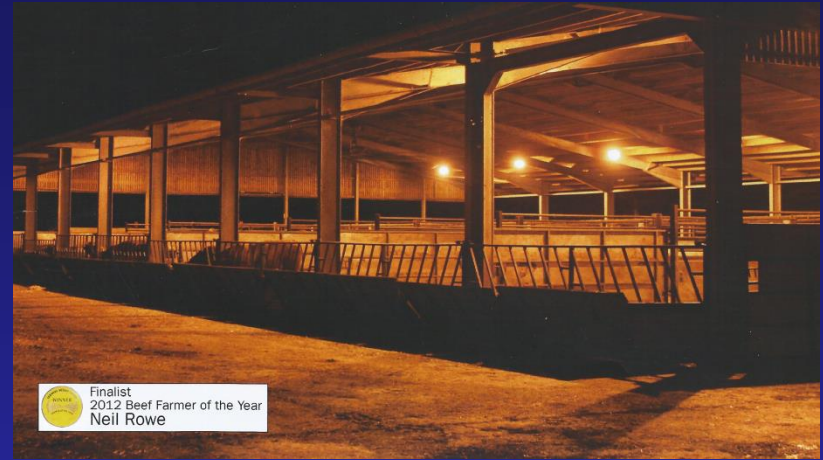




Rosé Beef Production – 1,300 bull unit - Gary Allis, Lincoln



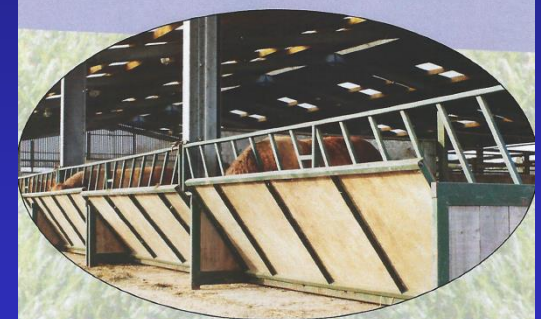
Cattle housing – BEEF 20/20



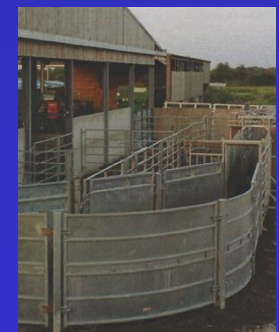
Extend day length by using 16 hours daylight and 8 hours low level red spectrum. This maximises intakes and fertility.



Innovative fan system, along with other state of the art equipment help to bring livestock welfare into the 21st Century.



Custom built feeders used to reduce wastage and labour time.



Cattle Housing – useful information

Recommended minimum space allowance for Suckler cows, growing and finishing cattle in straw-bedded yards and slats

	Liveweight (kg)	Straw yards (m ² /head)		Slatted floors (m ² /head)
		Bedded area	Total area (inc feeding and loafing)	
Suckler cows	500	4.25	5.85	2.75
	600	5.00	6.80	3.00
Growing/finishing cattle and youngstock	200	2.00	3.00	1.10
	300	2.75	3.95	1.50
	400	3.50	4.90	1.80
	500	4.25	5.85	2.10
	600	5.00	6.80	2.30

(Source: AHDB Better Cattle Housing Design 2013)



Cattle Housing – useful information

Typical straw bedding requirements

- Straw requirements are based on a 25 week bedding period except for the intensive cereal beef system which is 50 weeks

Stock	Approx straw requirements (tonnes)
Calf rearing to 3 months	0.2
Yearlings (300-400kg)	0.5-0.7
Heavy store/Finishing cattle (450-600kg)	0.7-1.0
Intensive Cereal bull (3-14 months old)	1.1-1.3
Autumn calving suckler & calf (650kg)	1.2-1.7
Dry suckler cow (650kg)	1.0-1.5

Note: Straw requirements for the intensive cereal beef system for 50 weeks appears relatively low however the muck is drier and less is produced per day compared to silage fed cattle

(Source: AHDB Better Cattle Housing Design 2013)

Cattle Housing – useful information

Recommended clear feeding face for cattle eating simultaneously

Liveweight (kg)	Approx age (months)	Minimum trough space (mm/head)
200	7	400
300	12	500
400	16	550
500	20	600
600	26	650
700	26+	700

(Source: BS 5502: Part 40)

Cubicles for heifers

Liveweight (kg)	Minimum length		Minimum width	
	(mm)	(inches)	(mm)	(inches)
150-250	1500	60	750	30
250-375	1700	68	900	35
Over 375	2100	84	1100	44

(Source: BS 5502: Part 40)

Relative costs of different housing systems

Housing system	Relative capital cost %
Slats with storage tanks	100
Slats with scrapers underneath	85
Cubicles with calf pens	80
Bedded court with outside walling	75
Bedded shell with open sides	60
Open corral with feed stance	20

(Source: AHDB Better Cattle Housing Design 2013)



Further Information

- EBLEX Better Returns Manuals i.e.
 - Choosing bulls to breed for Better Returns. Manual 1
 - Beef production from the dairy herd. Manual 4
 - Better Returns from Pure Dairy-bred Male Calves. Manual 10
- Beef Action for Profit. Better Returns from Dairy-Bred Bulls & Suckler-Bred Bulls (visit www.eblex.org.uk)
- EBLEX Beef Diseases Directory
- The Mini Feeds Directory, EBLEX Better Returns Programme (2008)

