How The Numbers Stack Up: The Economics of Livestock.

Andrew Spinks

Brown & Co, Norwich

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Talking about:

- Introductions
- Do the numbers stack up?
- Red Meat Economics
  - Nutrition from the Arable Rotation
  - Genetics
  - Marketing
- Focus points
- Key Points and Summary
- Opportunities and Further Information

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Introduction

- University of Nottingham
- Assistant Arable Farm Management
- Partner 100 cow suckler cattle enterprise
- Agricultural Business Consultant

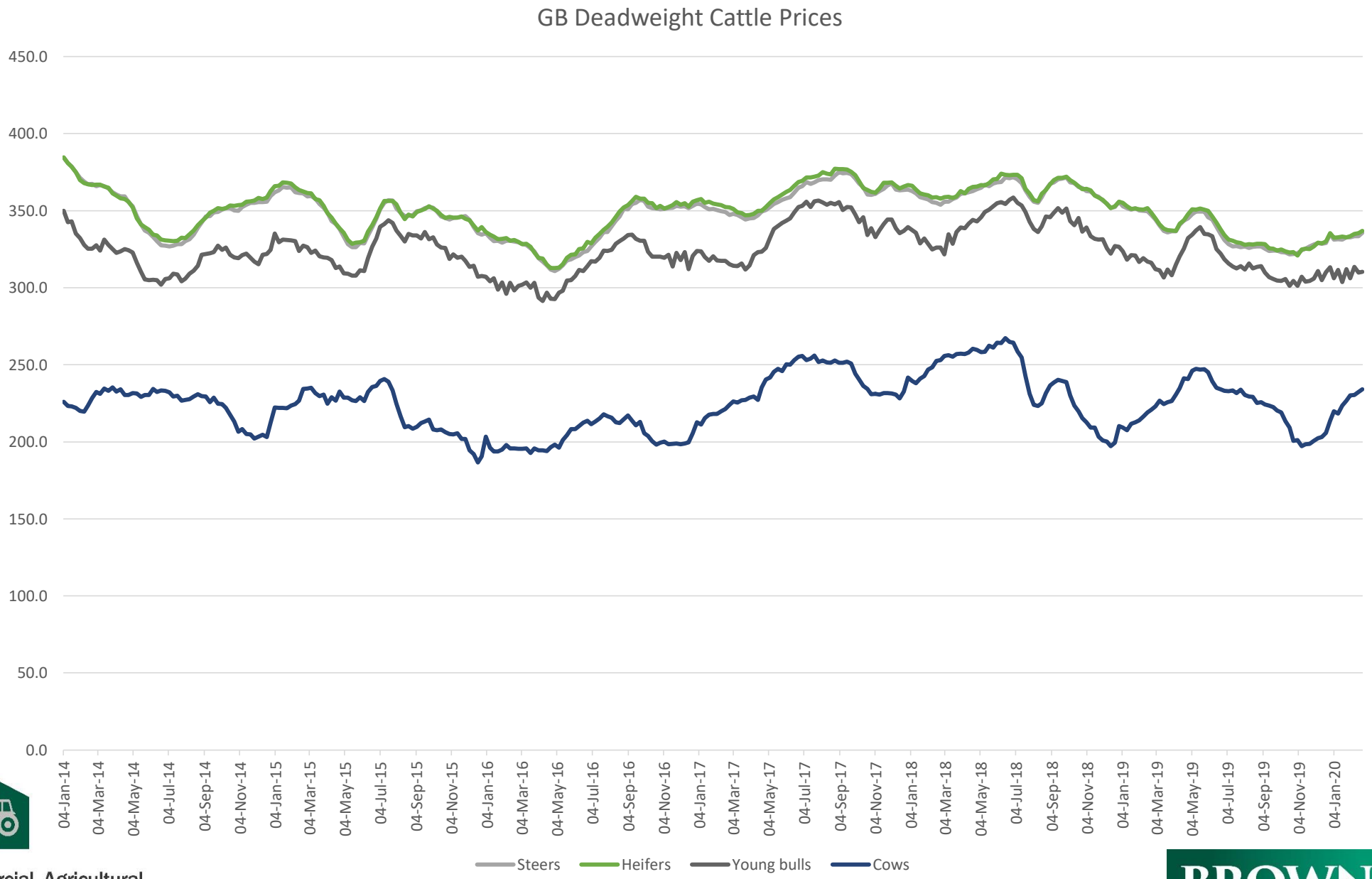
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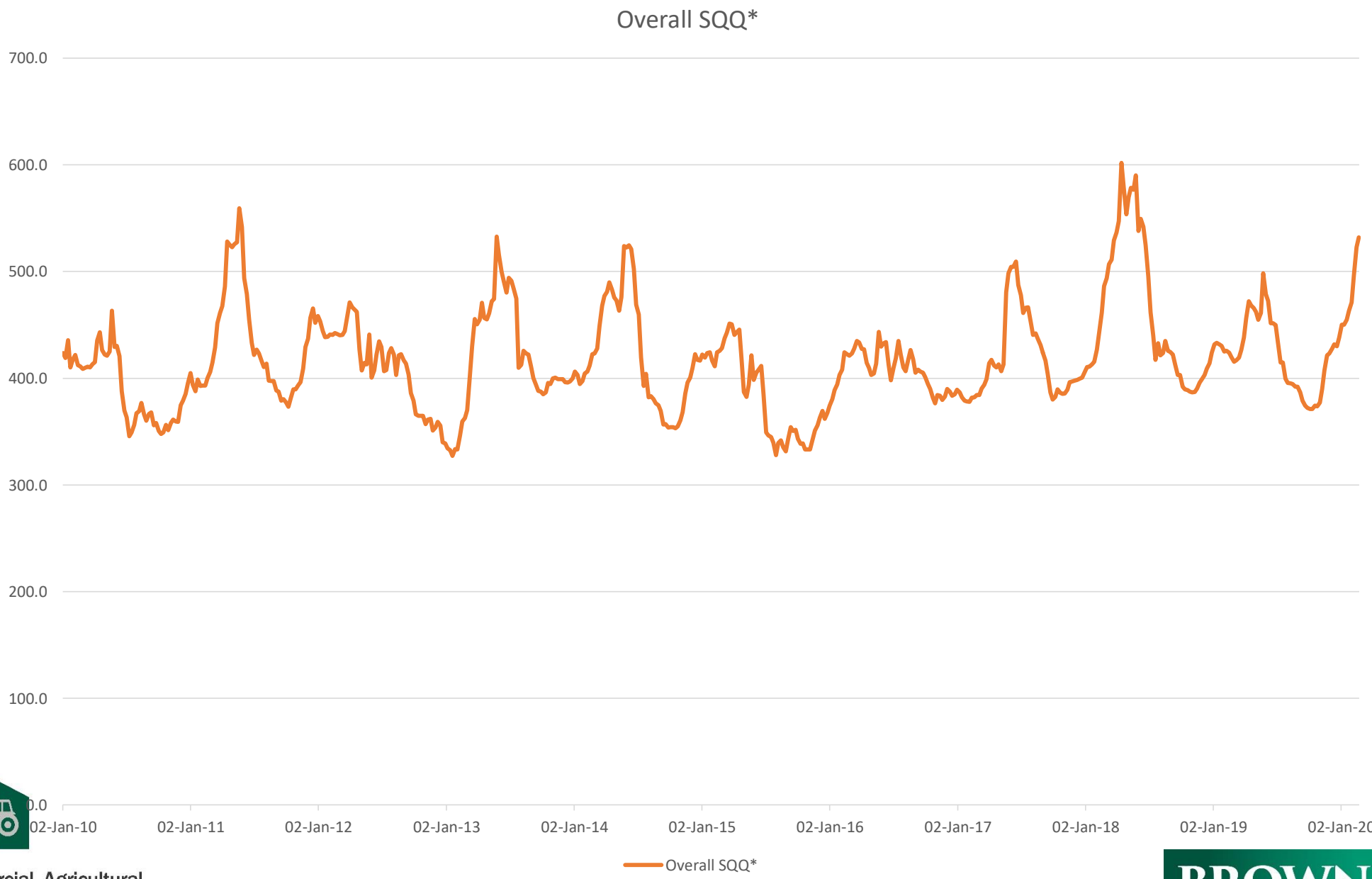
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Overall SQQ*
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
02-Jan-10
02-Jan-11
02-Jan-12
02-Jan-13
02-Jan-14
02-Jan-15
02-Jan-16
02-Jan-17
02-Jan-18
02-Jan-19
02-Jan-20
Overall SQQ*

RBR
Rural Business Research

Duchy College
RURAL BUSINESS SCHOOL

Farm Business Survey

2017-18

Lowland Grazing Livestock Production in England



Mark Fogerty, Richard Soffe and Keith Robbins

RBR
independent research, data and analysis
Rural Business Research

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Figure 2 Farm Business Income per hectare and per Annual Labour Unit, in England 2017-18, by Farm Type

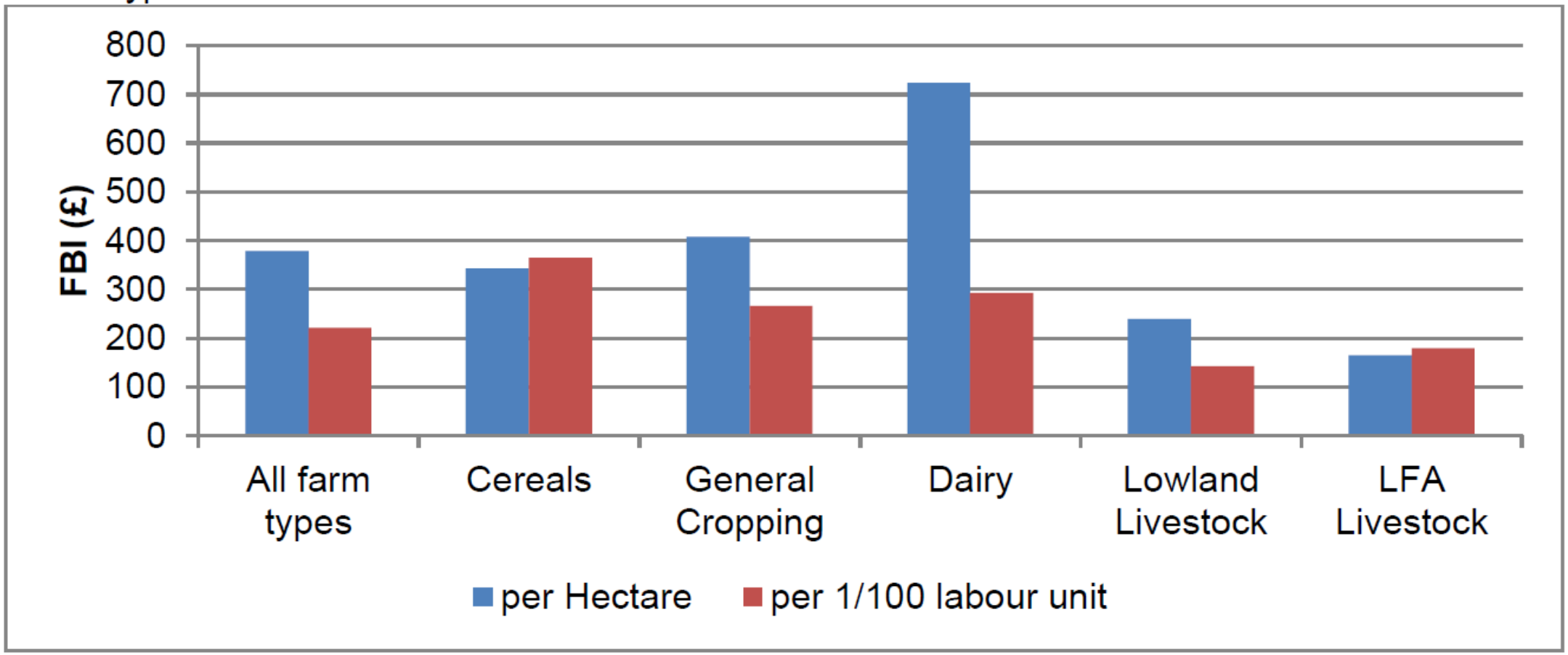
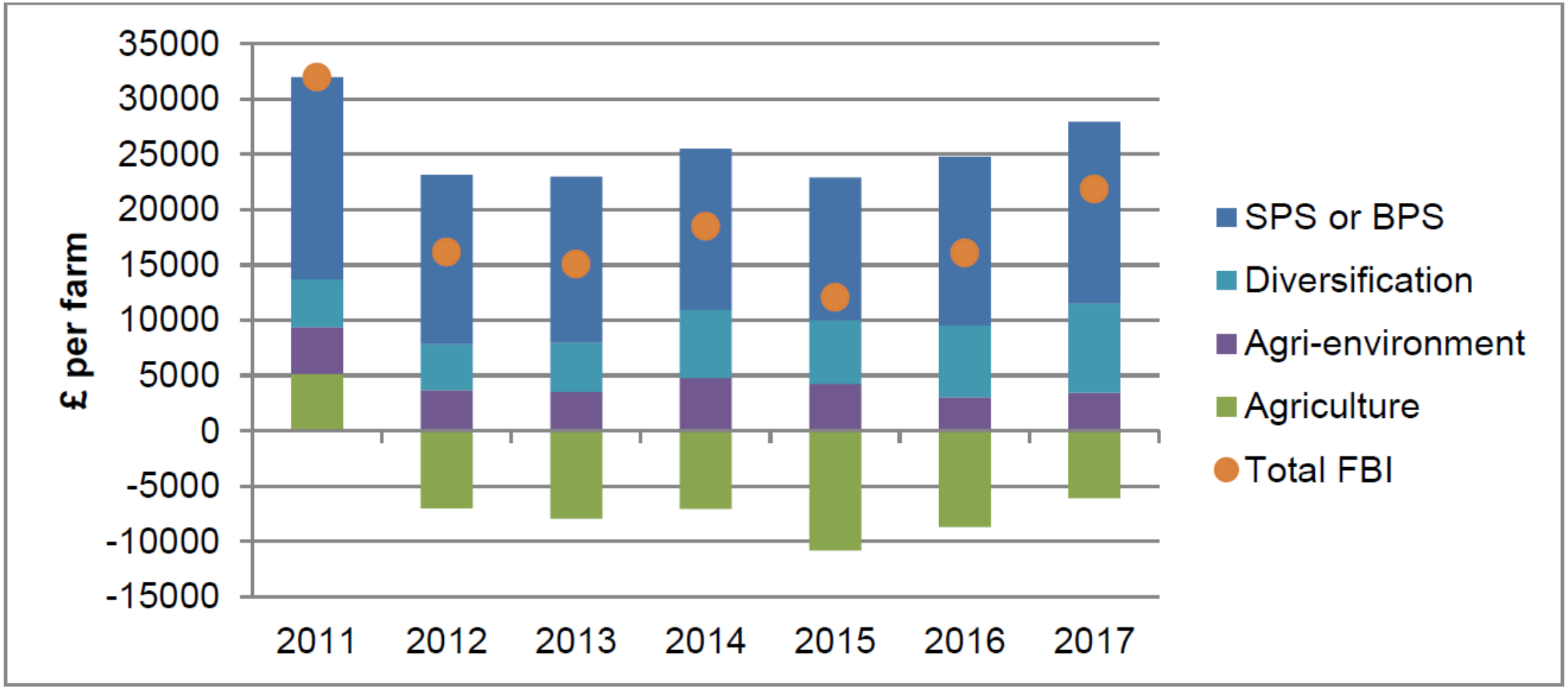


Figure 3 Lowland Grazing Livestock farms in England - Average Farm Business Income by Cost Centre 2011-2017



RBR UNIVERSITY OF CAMBRIDGE
Rural Business Research

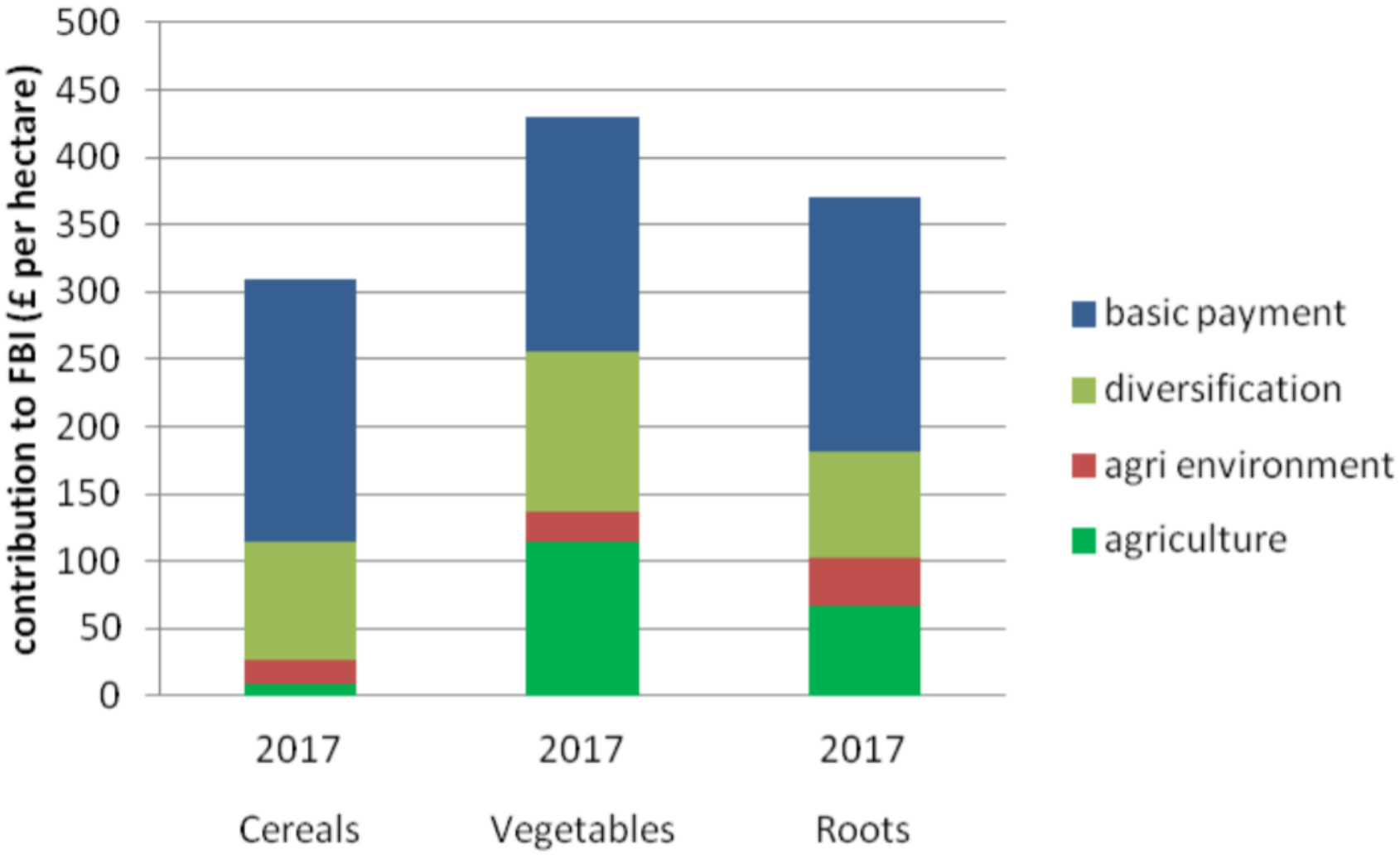
Farm Business Survey

2017/2018
Crop Production in England



Ben Lang

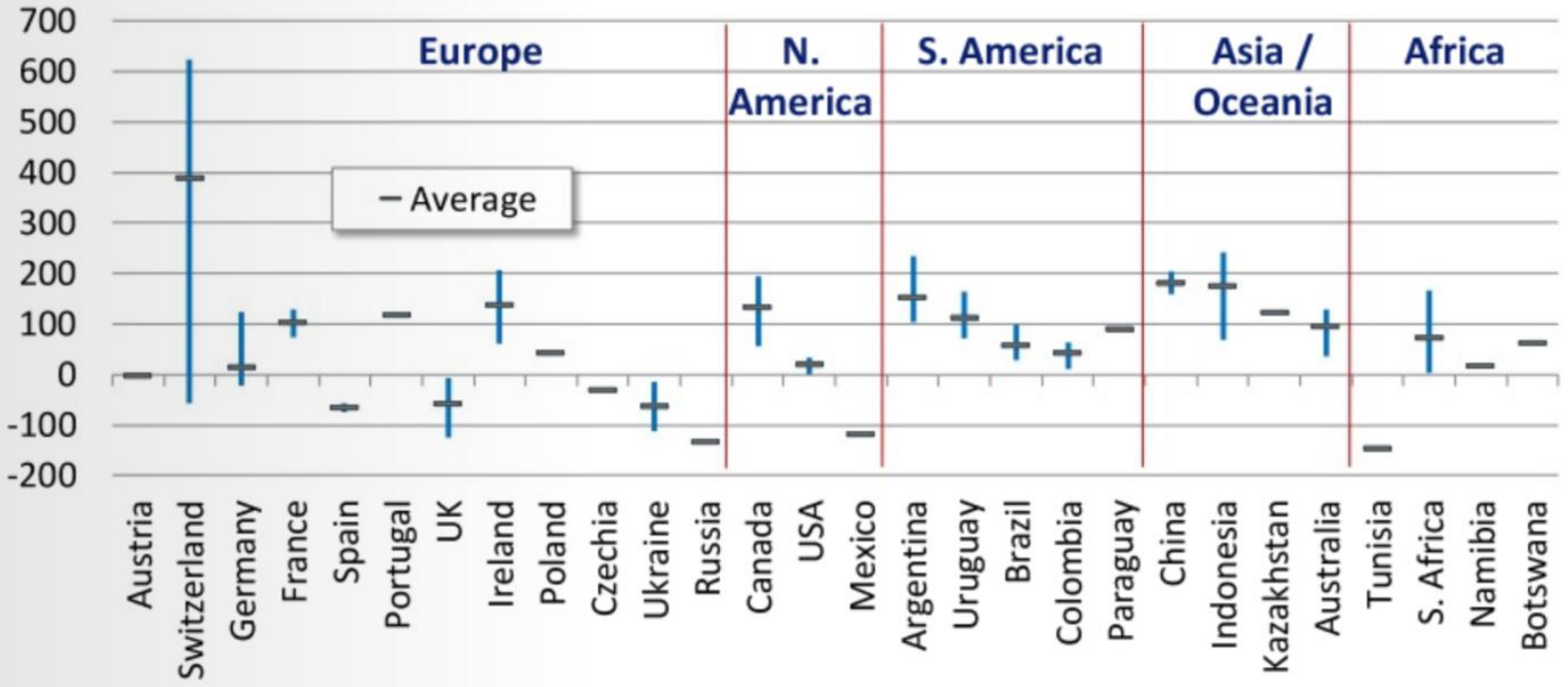
RBR Independent research, data and analysis
Rural Business Research

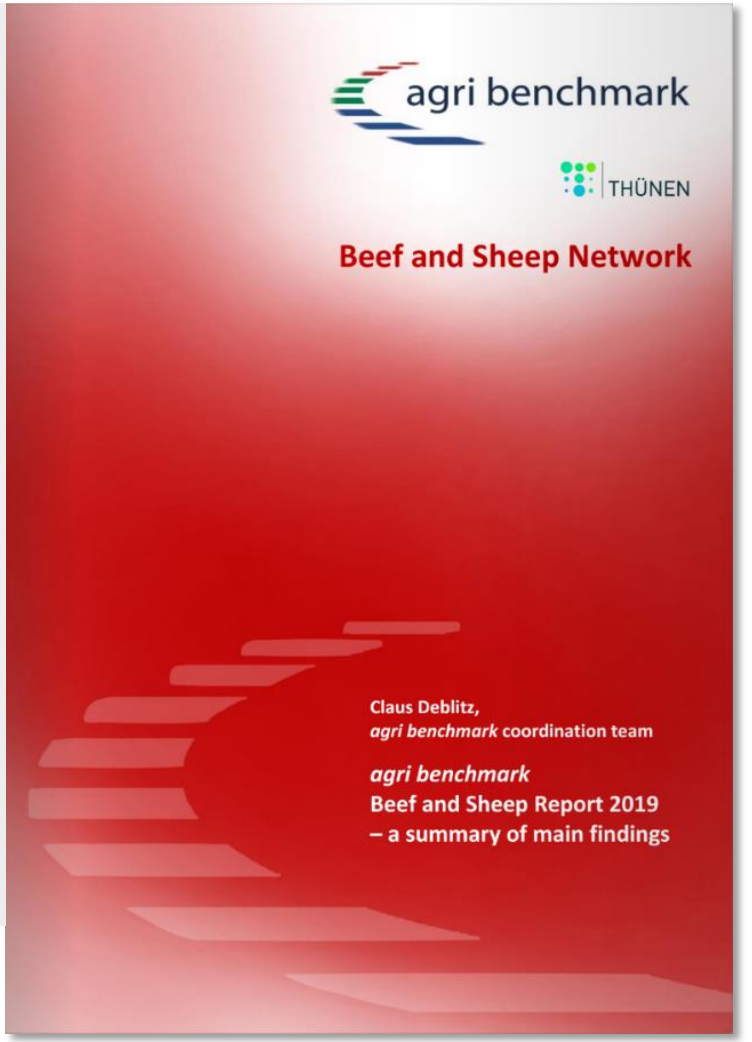


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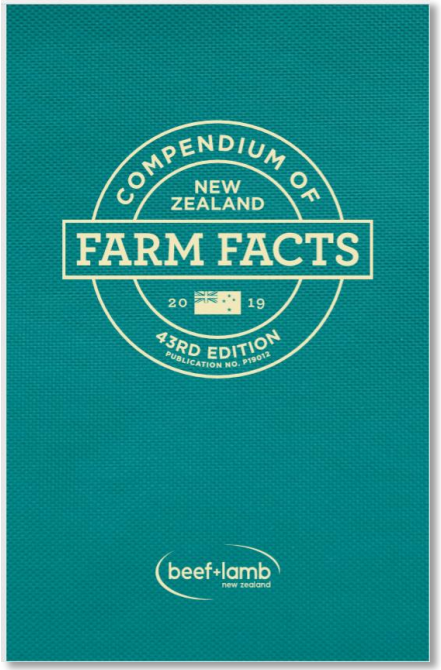
Figure 10 Medium-term profitability of the cow-calf enterprise 2018 (USD per 100 kg live weight)





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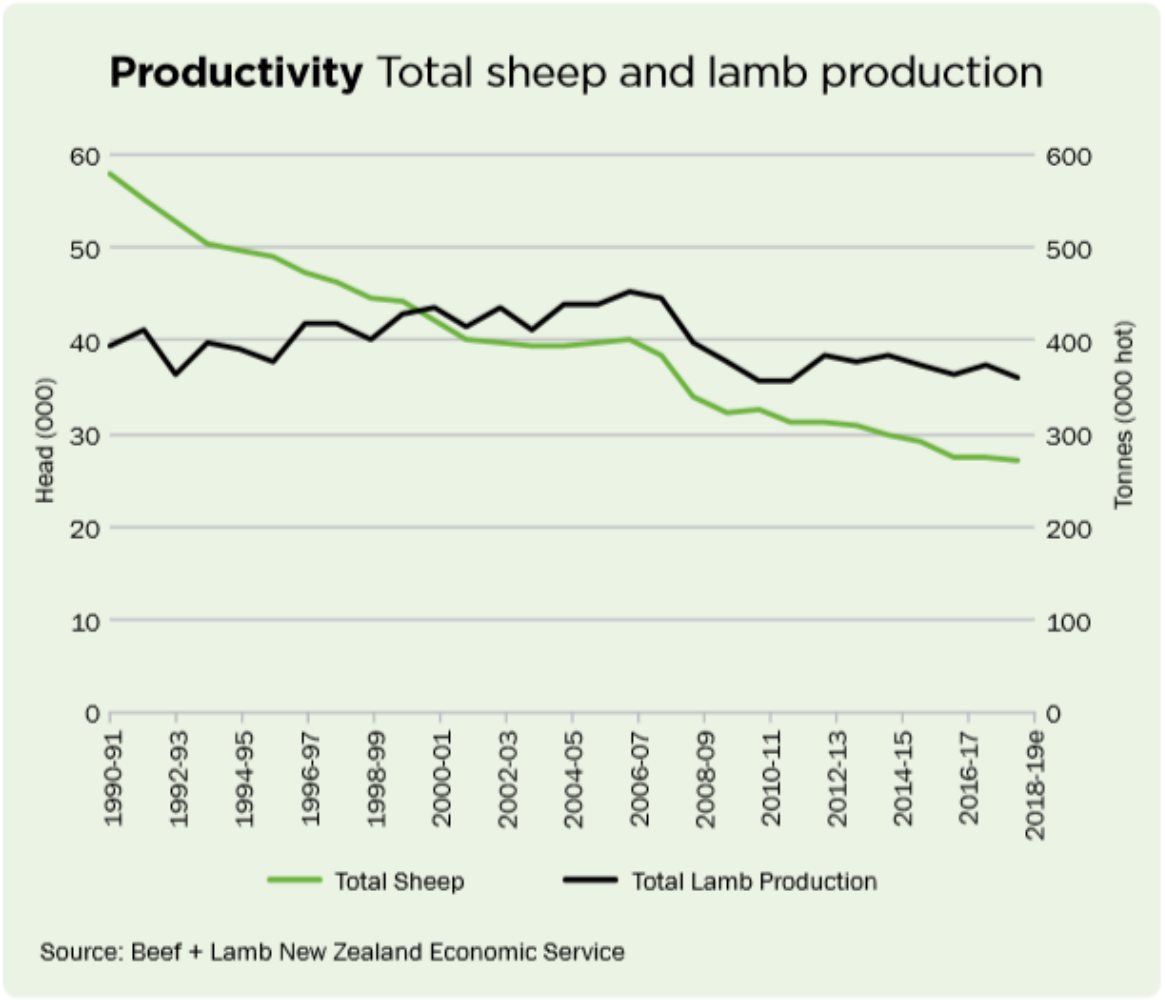
New Zealand Productivity Increase



Livestock productivity

	Unit	1990-91	2017-18p	Change
Lambing Performance	lambs/100 ewe	102	132	+30%
Lamb Weight	kg/head	13.9	18.6	+33%
Lamb Production	kg/ewe	9.8	21.1	+116%
Wool Production	kg/head	5.3	5.2	-2%
Steer Weight	kg/head	297	312	+5%
Milk Production	kgMS/cow	259[1]	368	+42%

1 Figure is from 1992-93.
Source: Beef + Lamb New Zealand Economic Service, Livestock Improvement Corporation Ltd, DairyNZ



Source: Beef + Lamb New Zealand Economic Service

The total number of sheep dropped from 57.9 million in 1990-91 to 27.5 million in 2017-18 (-56%) while lamb production only decreased 5%.

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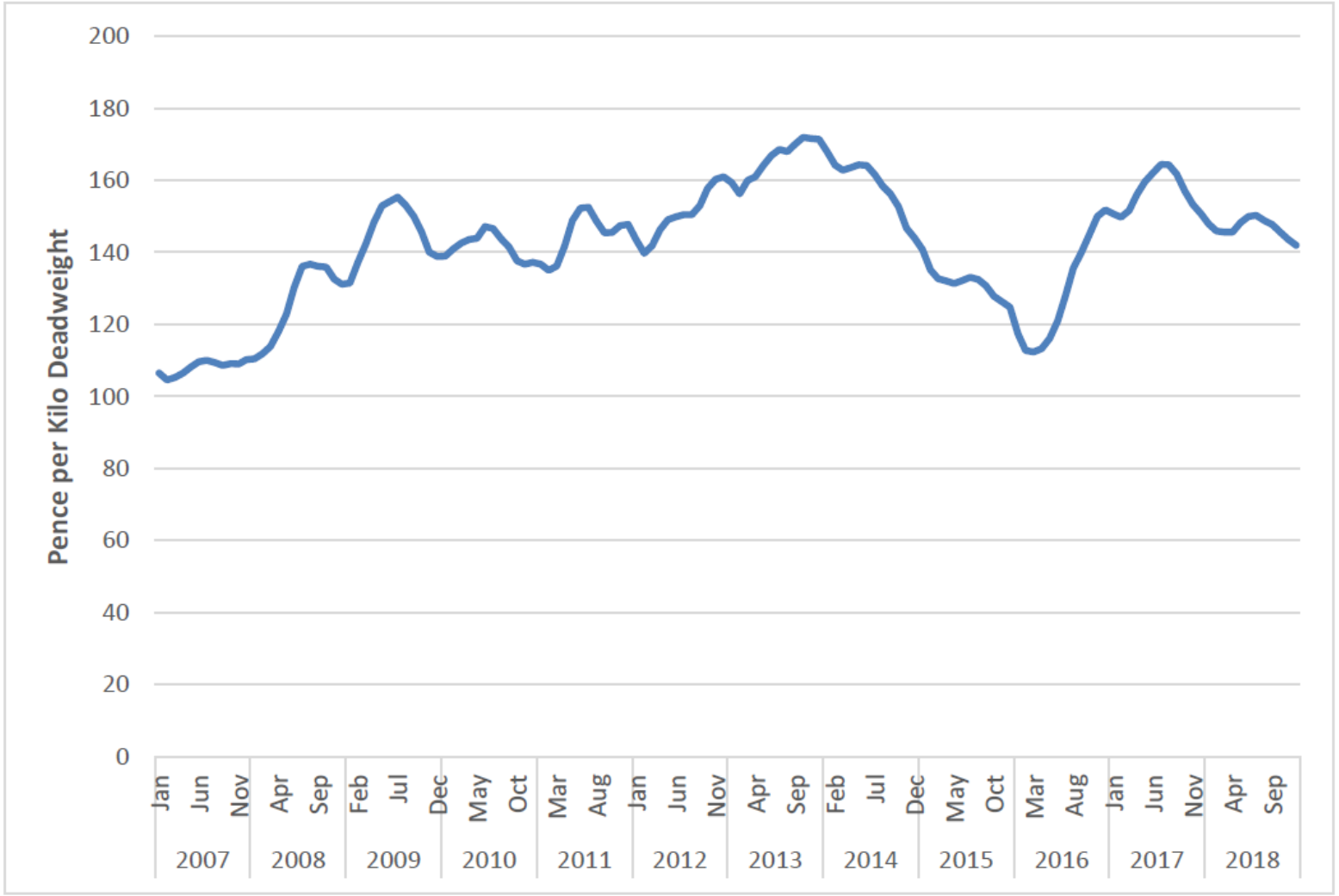
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Pig Industry

- Consolidated structure, for example Tulip holds 30% of market share.

- The future for beef and lamb?

Figure 1.4 Deadweight Average Pig Price (SPP) 2007-2018



Source: AHDB, http://pork.ahdb.org.uk/prices-stats/prices/pig-prices-uk-spec/

Meat Economics

- Maternal and paternal animal produce a terminal slaughter/ breeding animal.

- ve	+ ve
• Cost of keeping maternal and paternal animal. • Cost of taking offspring to point of sale (terminal animal/ breeding animal).	• Value of the offspring at sale/ slaughter. • (Value of by-products)

Function of:
• Nutrition
• Health
• Genetics
• Infrastructure
• Labour
	Function of:
	• Marketing
	• Quantity Sold
	  • Nutrition
	  • Health
	  • Genetics

Nutrition: Brassicas

	DM yield (kg/ha)	No. of animals per ha for 100 days (crop is 70% of diet)				Cost of brassica per animal (p/day*)			
		Suckler cows	Stores	Ewes	Lambs	Suckler cows	Stores	Ewes	Lambs
Swedes	8,000	10	11	70	54	72	63	9	6
Kale	9,000	10	11	66	51	62	55	7.8	5.2
Stubble turnips	6,000	6	7	44	34	64	56	8	5.3
Grazing turnips	3,000 (+2000 regrowth)	5	6	37	28	116	102	14.5	9.7
Rape/kale hybrid	6,000	6	7	44	34	62	55	7.8	5.2
Forage rape	4,800	4	5	29	23	61	54	7.6	5.1

Notes: Assumptions: 600kg suckler cows. Dry suckler cows requiring 68MJ ME/d. 350kg growing cattle gaining 0.75kg/d requiring 63 MJ ME/day. 70kg ewe requiring 10MJ ME/day. 30kg lambs gaining 200g/d requiring 13MJ ME/day. *Variable costs of establishment (SAC, The Farm Management Handbook 2015/16) with predicted intake related to production, 70% utilisation and 70% of diet from forage crop. Costs of fibre source and labour are not included.

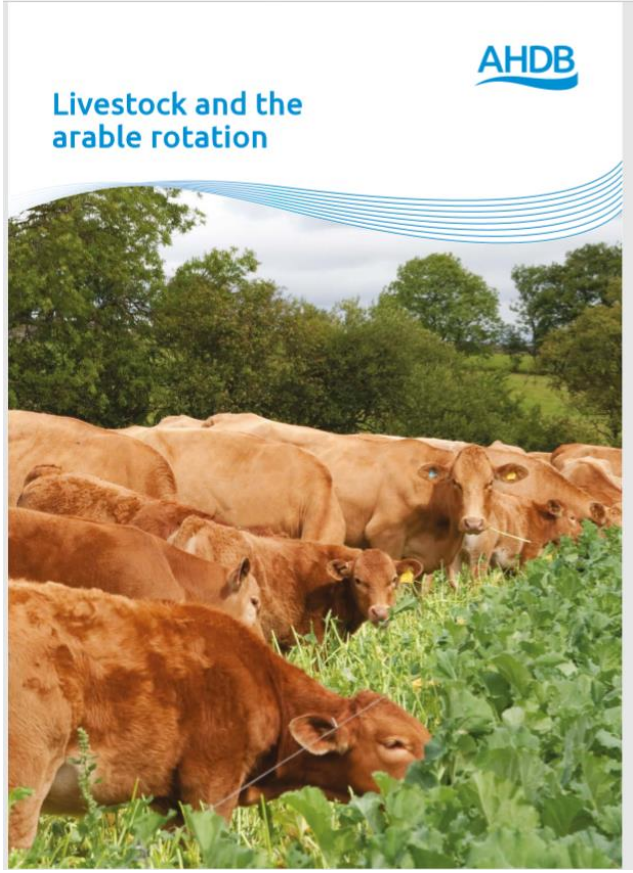


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Nutrition: Grass

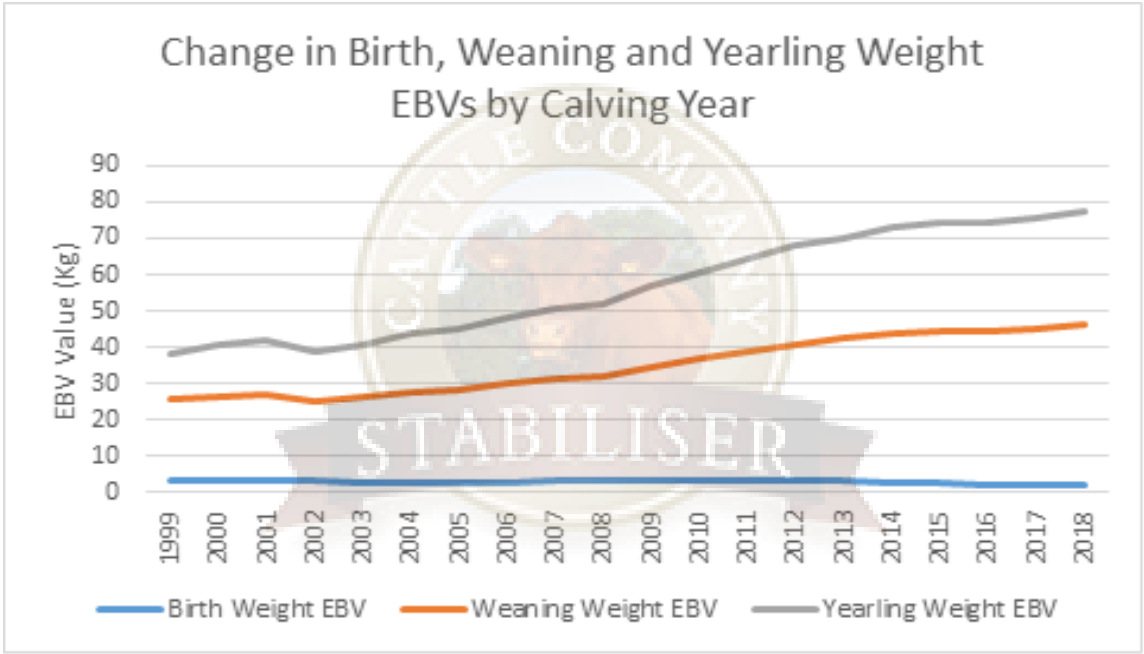
Table 4. Guidance on yields of a range of ley crops

	Average fresh weight yield (t/ha)	Dry matter (%)	Average dry matter yield (t/ha)	Average metabolisable energy (MJ per kg dry matter)	Average crude protein (% in dry matter)
Grazed grass (whole year)	65	17	11.1	11.5	17
Poor-quality sward (whole year)	40	18	7.2	10.5	15
First-cut grass silage (clamp)	23	25	5.7	11.2	15
Second-cut grass silage (clamp)	13	30	3.8	11.0	14
Hay (one cut)	6	85	5.0	9.0	9
Italian ryegrass (whole year)	52	27	14.0	11.0	13
Conserved lucerne (whole year)	40	30	12.0	10.0	17–22
Herbal ley (whole year)	67	15	10.0	11.0	18



Genetics

- Everyone has their own favourite colour.
- Scientific breeding programs yield results and increase productivity.



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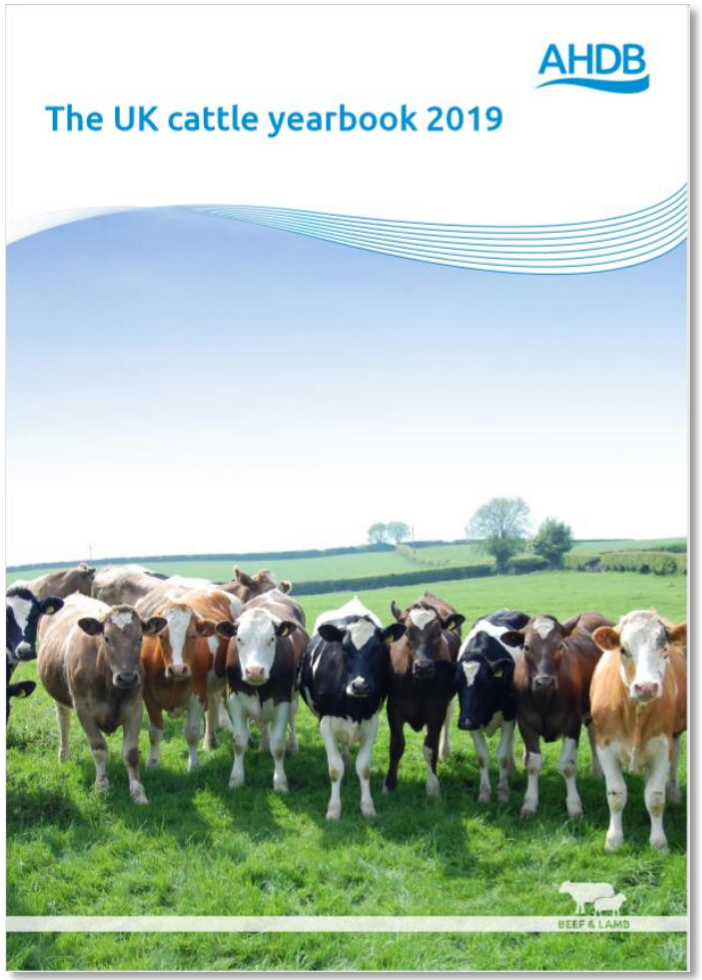


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Consumption

Table 10.1 Meat consumption, UK, 2018

	2018 ('000 tonnes)	Change on year (%)
Beef and veal	1,228	1.7
Lamb and mutton	293	-2.3
Pig meat	1,726	0.5
Poultry	2,447	2.2
Total meat	**5,694**	**1.3**

Consumption is a balance calculation based upon total supplies available for consumption, i.e. production + imports - exports

Source: AHDB. Calculations based on data from Defra, IHS Maritime & Trade – Global Trade Atlas®/HMRC

Our Customer?











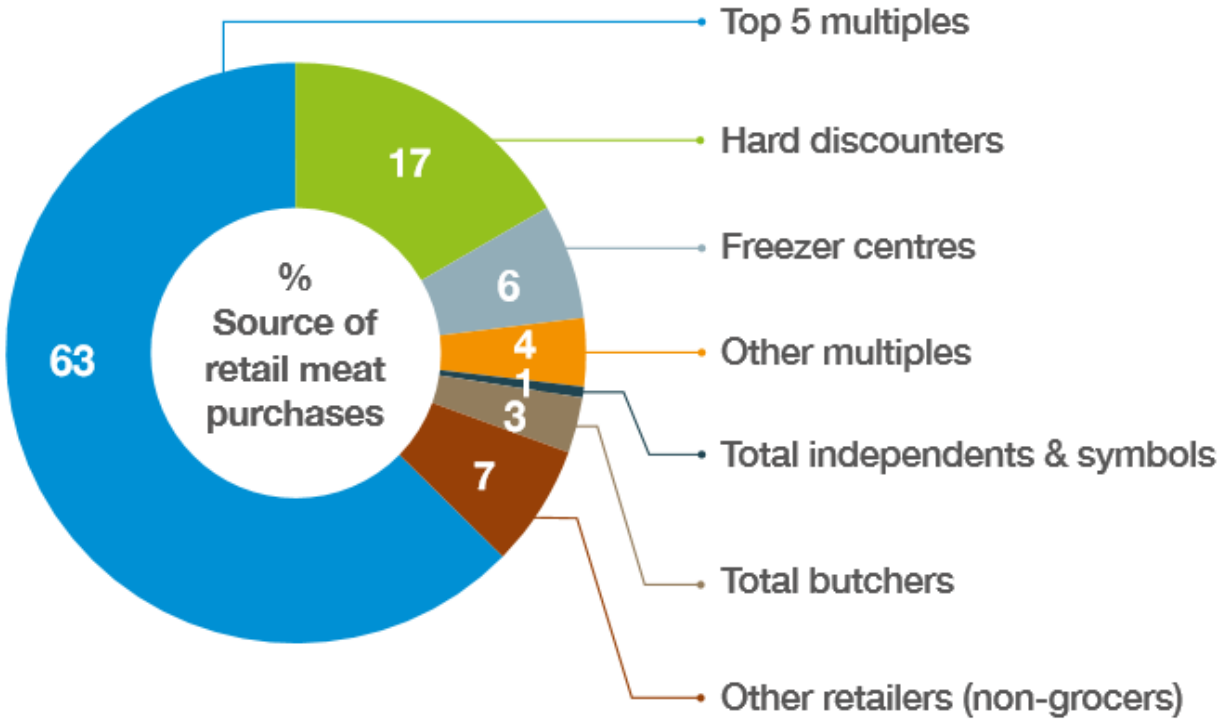


Figure 10.3 Source of retail meat purchases by volume, GB, 2018

Data covers 52 weeks ending 30 December 2018

Source: Kantar Worldpanel

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Beef Carcass Results

Table 6.1 Distribution of prime cattle carcases by conformation and fat class, GB, 2018

%		Fat class							
		1	2	3	4L	4H	5L	5H	Total
Conformation	E	0.0	0.2	0.2	0.0	0.0	0.0	0.0	**0.5**
	U+	0.1	1.0	2.1	0.8	0.1	0.0	0.0	**4.0**
	-U	0.1	1.6	6.1	6.0	1.2	0.0	0.0	**15.1**
	R	0.2	3.0	16.1	19.2	5.7	0.3	0.0	**44.6**
	O+	0.1	1.6	8.0	9.7	3.0	0.2	0.0	**22.7**
	-O	0.2	1.5	5.4	3.4	0.5	0.0	0.0	**11.0**
	P+	0.2	0.6	0.7	0.2	0.0	0.0	0.0	**1.7**
	-P	0.2	0.1	0.1	0.0	0.0	0.0	0.0	**0.4**
	Total	**1.1**	**9.7**	**38.7**	**39.4**	**10.4**	**0.6**	**0.1**	

Totals may not add up to 100% due to rounding

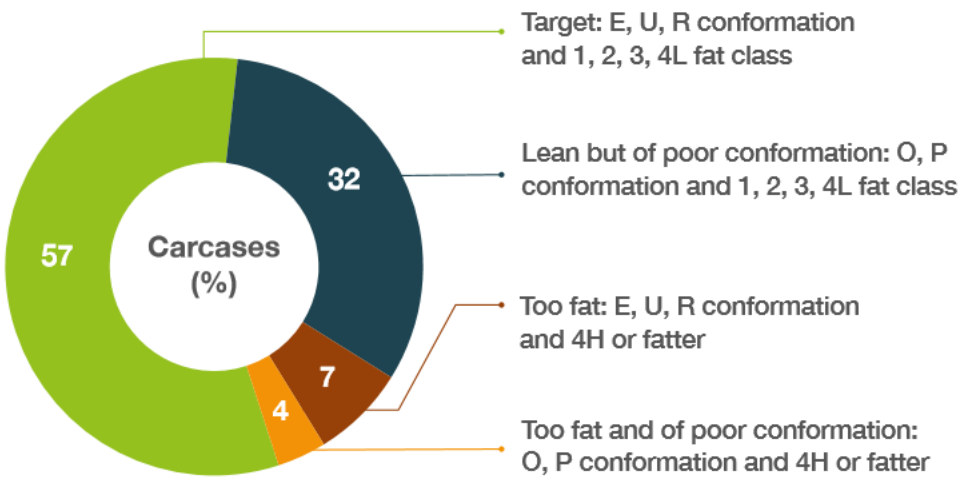


Figure 6.1 Prime cattle carcases meeting target specification, GB, 2018

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Sheep Carcass Results

Table 6.1 Distribution of prime sheep carcases by conformation and fat class, GB, 2018

%		Fat class							
		1	2	3L	3H	4L	4H	5	Total
Conformation	E	0.0	1.0	3.5	1.6	0.4	0.1	0.0	**6.6**
	U	0.1	2.8	13.9	7.3	1.7	0.3	0.1	**26.2**
	R	0.5	8.2	28.3	13.2	2.7	0.4	0.1	**53.4**
	O	0.6	3.6	7.0	2.1	0.2	0.0	0.0	**13.5**
	P	0.1	0.1	0.0	0.0	0.0	0.0	0.0	**0.2**
	Total	**1.2**	**15.8**	**52.9**	**24.3**	**5.0**	**0.8**	**0.2**	

Includes both new- and old-season lambs
Totals may not add up to 100% due to rounding

Source: AHDB, MLCSL

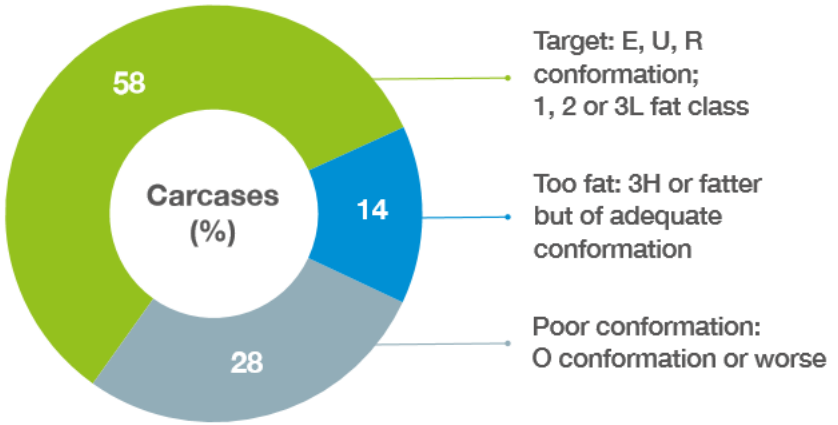


Figure 6.1 Prime sheep carcases meeting target specification, GB, 2018

Source: AHDB, MLCSL

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Pig Carcass Classification

Lean meat percentage	EU grade
60% and above	S
55–59%	E
50–54%	U
45–49%	R
40–44%	O
39% or less	P

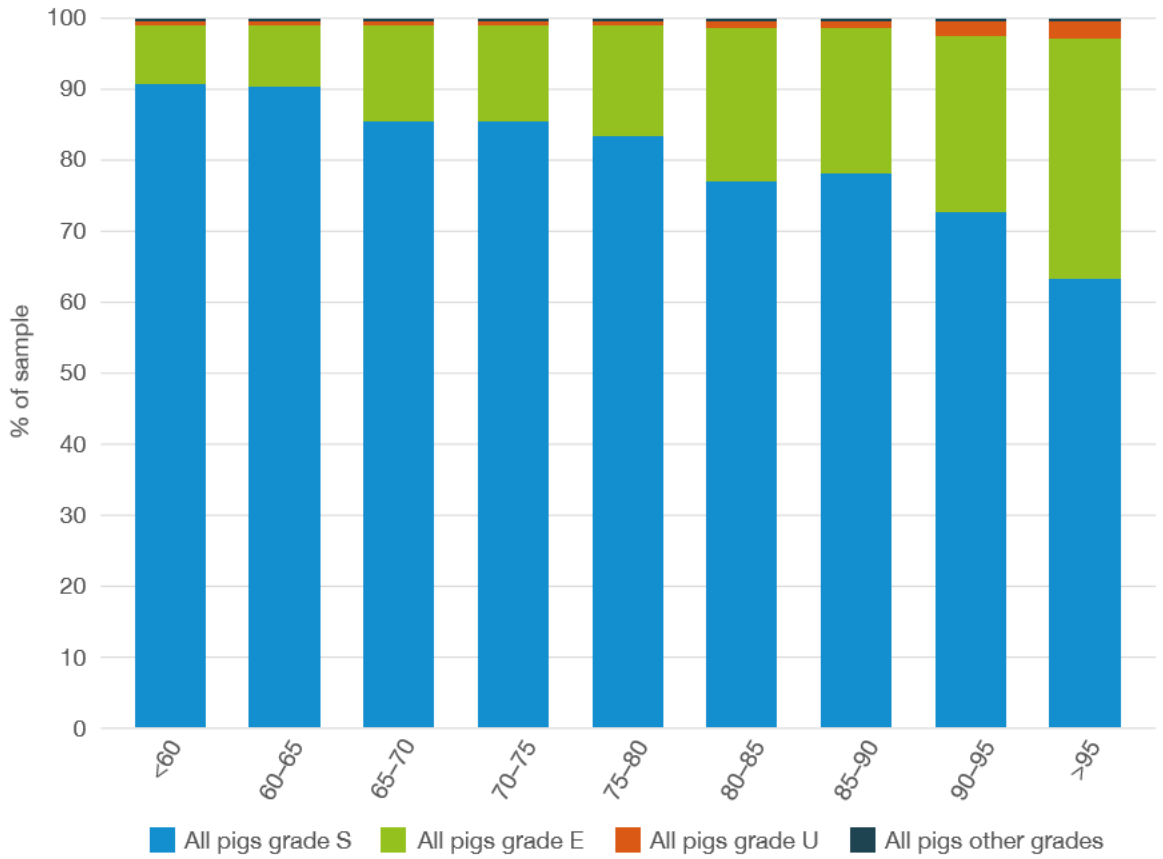


Figure 6.4 Distribution of the GB All Pig Price sample in EC grade by weight band, 2018

By-Product: Manure

	AHDB Sept 2019 Prices			ABC Costings Book Price	
	Ammonium Nitrate	Muriate of Potash (MOP)	Triple Super Phospate (TSP)	Kieserite (Mg)	Kieserite (S)
Product Price	£ 257.00	£ 286.00	£ 307.00	£ 250.00	£ 250.00
Weight (kg)	1000	1000	1000	1000	1000
% Nutrient	34.5%	60.0%	46.0%	16%	21%
Kg Oxide/t	345	600	460	160	210
£/kg Oxide	£ 0.74	£ 0.48	£ 0.67	£ 1.56	£ 1.19

Nutrient		Dry Matter	Nitrogen			Substituting Product		
			Total N	Availability	Available N			
		%	kg Nutrient/t	%	kg Nutrient/t	Product	£ Total Nutrient	£ Available Nutrient
Nitrogen	N	25%	6	10%	0.6	Ammonium Nitrate	£ 4.47	£ 0.45
Pottasium	P_2O_5	25%	3.2	60%	1.9	Muriate of Potash	£ 1.53	£ 0.92
Phosphate	K_2O	25%	9.4	90%	8.5	Triple Super Phosphate	£ 6.27	£ 5.65
Sulphur	SO_2	25%	2.4			Kieserite	£ 2.86	
Magnesium	MgO	25%	1.8			Kieserite	£ 2.81	

By-Product: Manure

National Association Agricultural Contractors 2019

Cost to run a loader	£43.52/hr							
Average loading time (Mins)	20							
Average loading time (Hr)	0.33							
Cost to run a tractor and trailer	£48.83/hr							
Miles	**1**	**2**	**3**	**4**	**5**	**10**	**15**	**20**
KM	1.6	3.2	4.8	6.4	8.0	16.1	24.1	32.2
Average Speed (km/hr)	30							
Time Taken One Way (hr)	0.1	0.1	0.2	0.2	0.3	0.5	0.8	1.1
Time Taken Both Way (hr)	0.1	0.2	0.3	0.4	0.5	1.1	1.6	2.1
Cost per Load	£19.75	£24.98	£30.22	£35.46	£40.70	£66.90	£93.09	£119.29
Trailer Load Size (t)	14							
Cost per tonne	£1.41	£1.78	£2.16	£2.53	£2.91	£4.78	£6.65	£8.52
Cart and Spread (£/tonne)	£3.14	£3.52	£3.89	£4.26	£4.64	£6.51	£8.38	£10.25

Cattle Manure	Substituting Ammonium Nitrate	£ 0.45	£ 0.45	£ 0.45	£ 0.45	£ 0.45	£ 0.45	£ 0.45	£ 0.45
	Substituting MOP	£ 0.92	£ 0.92	£ 0.92	£ 0.92	£ 0.92	£ 0.92	£ 0.92	£ 0.92
	Substituting TSP	£ 5.65	£ 5.65	£ 5.65	£ 5.65	£ 5.65	£ 5.65	£ 5.65	£ 5.65
	Substituting Kieserite (S)	£ 2.86	£ 2.86	£ 2.86	£ 2.86	£ 2.86	£ 2.86	£ 2.86	£ 2.86
	Substituting Kieserite (Mg)	£ 2.81	£ 2.81	£ 2.81	£ 2.81	£ 2.81	£ 2.81	£ 2.81	£ 2.81
	Value (Pre Movement)	£ 12.68	£ 12.68	£ 12.68	£ 12.68	£ 12.68	£ 12.68	£ 12.68	£ 12.68
	Value (Post Movement)	£ 9.54	£ 9.16	£ 8.79	£ 8.41	£ 8.04	£ 6.17	£ 4.30	£ 2.43

Cost to run a loader	£43.52/hr
Average loading time (Mins)	20
Average loading time (Hr)	0.33
Muck Spread Time/Load (Mins)	15
Muck Spread Time Load/(Hr)	0.25
NAAC 2019 Rate (£/hr)	£ 52.80
Cost per Load	£ 27.71
Muck Spread Load Size (t)	16
Cost per Tonne	£1.73

Caution! **Un-Controlable!** Can be bad as much as being good! Wildly variable!

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Future Directions


Department
for Environment
Food & Rural Affairs

Farming for the future

Policy and progress update

February 2020

- "…a proposal to spend public money on things that have public value that are not sufficiently provided by the market – including enhancing our environment and protecting our countryside, better animal and plant health and animal welfare, and improved productivity – as part of a move to higher regulatory standards".
- "We intend to launch the first schemes to improve the health of farmed animals from 2022 to 2023, tackling endemic diseases in particular".
- Remember how key BPS is to returns?

Key Points:

- A challenging time in the media.
- The average grazing enterprises in the UK make money from BPS, Environmental Schemes and Diversification.
- UK can improve its productivity.
- Health, Genetics and Nutrition.
- 80% of UK retail meat is purchased via a supermarket.
- Could we hit market specification more often?
- An interesting future. Where are you going?

Opportunities and Help

BUSINESS OPPORTUNITY
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SHARE FARMING OPPORTUNITY
Westacre, Norfolk - Term 10 Years

We are seeking a dynamic, dedicated livestock operator to enter a new share farming arrangement within a 1,800 hectare farm in West Norfolk. The dedicated grassland area is circa 390 hectares; made up of mixed quality permanent grass and major stewardship scheme. With scope to add additional forage/grassland within the arable rotation.

Suitable applicants will be experienced in lowland sheep and / or suckler beef production, have a proven track record of performance within the sector and have capital/livestock to deploy to a long term joint venture within a share farming structure. Alternative structures could also be considered with the right applicant.

The client is seeking a long term business performance and land management focused relationship that can grow and develop to take advantage of additional forage crop/grass ley land areas within a larger arable rotation.

This opportunity could provide a potential anchor unit within a largely arable area as Brexit brings further opportunity for ruminant livestock enterprises within traditional arable rotations.

Scope exists to add value through the client's branding and for additional capital commitment to provide economically relevant livestock infrastructure for new post Brexit land use scenarios.

Interested applicants should provide details of current resources, experience and track record.

Closing Date 12th January 2018

A shortlist of selected applicants will be drawn up for a viewing of the farm and initial meetings in late January 2018 with an envisaged commencement during 2018 at a time to suit both parties.

Apply to Simon Wearmouth or Josh Crick, Brown&Co, The Atrium, St George's Street, Norwich, NR3 1AB or email josh.crick@brown-co.com Or call for an initial discussion on 01603 629871 / 07768 465744

@brownandco_agri

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NENE PARK | PETERBOROUGH

The Nene Park Trust is making 200 hectares of mixed grazing land available, on the outskirts of Peterborough, for the establishment of a Share Farming arrangement. The Trust is seeking a stock person, with proven livestock experience, to collaborate with in achieving its commercial, charitable, and conservational objectives. There is opportunity for joint investment, and access to a significant customer base.

Enquiries to be made to Josh Crick by the 7th of February 2020

Josh Crick
Brown&Co Norwich
01603 598240
josh.crick@brown-co.com

BROWN&CO
Property and Business Consultants
brown-co.com



Simon Wearmouth
Partner, Norwich Office



Josh Crick
Associate, Norwich Office



Henry Treloar
Professional, Norwich Office

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Opportunities and Help

ATTENTION TENANTS

- 26th March, Fur and Feather, Woodbastwick, 9.30am.
- 27th March, Ffolkes Arms, Hillington, 9.30am.

Thank You

Andrew Spinks
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Agricultural Business Consultant

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