



# Future Pig Feeding Solutions

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## Agenda

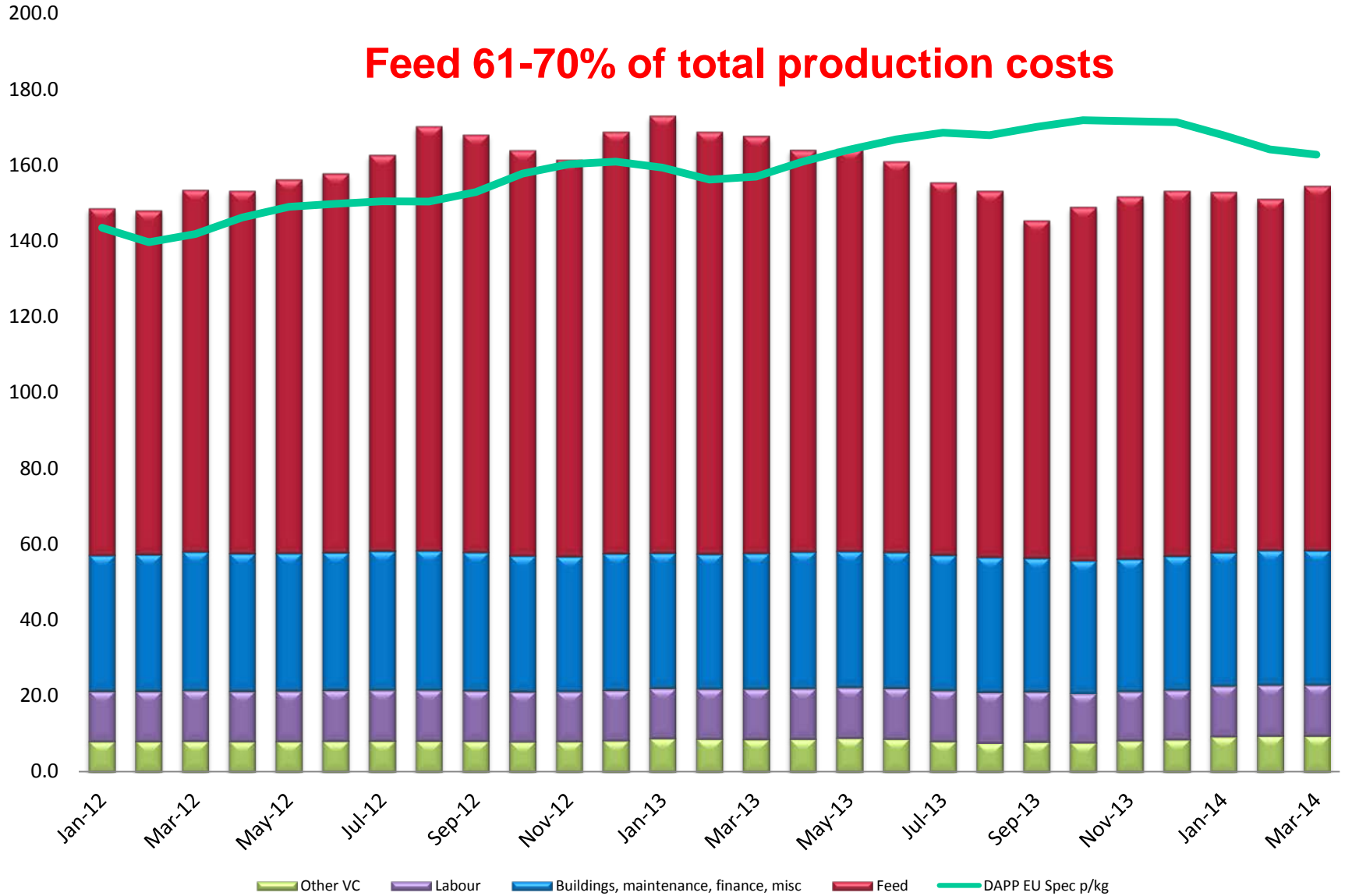
- Importance of feed (finishing feed used in this example)
  - in cost of production
  - competitive performance
- Feeding in 2014
  - *How precise are we? What's the prize?*
- Outline of morning session



# Estimated total costs and DAPP p/kg

Source: AHDB/BPEX

**Feed 61-70% of total production costs**





# The basics





# Our objective – lean meat

## Example - Pig performance and lean growth

Protein deposition rate (g/day)*	120	140	160	180	200
Gain (g/day)	783	850	917	986	1054
FCR	2.86	2.63	2.44	2.27	2.13
Feed specification					
SID Lys (%)	0.77	0.82	0.86	0.89	0.92
Ca (%)	0.52	0.58	0.64	0.70	0.75
STTD P (%)	0.24	0.27	0.30	0.32	0.35

NRC (2012) 13.5 MJ DE/kg, 35-100kg BW, **feed intake 2.24 kg/day**. \* Mean PDR 25-125kg BW



# COMPETITIVE PERFORMANCE



# Competitive performance

## Finishing (Interpig, 2012)

	GB	DEN	GER	FRA	SPA	NL	CAN
Intake (kg/day)	2.23	2.44	2.22	2.13	1.80	2.07	2.62
Gain (g/day)	822	905	780	789	689	795	875
FCR	2.72	2.70	2.85	2.70	2.61	2.60	3.00
Mortality (%)	2.5	3.4	2.6	3.5	4.1	2.4	3.0
Slaughter weight (kg)*	103	107	121	117	108	116	122

\* Now circa 80kg DW; 107kg LW



## Competitive performance - EU Finishing (Interpig, 2012)

	GB	DEN	GER	FRA	SPA	NL	CAN
Intake (kg/day)	2.23	2.44	2.22	2.13	1.80	2.07	2.62
Gain (g/day)	822	905	780	789	689	795	875
FCR	2.72	2.70	2.85	2.70	2.61	2.60	3.00
<i>FCR est @103kg</i>	<i>2.72</i>	<i>2.66</i>	<i>2.68</i>	<i>2.59</i>	<i>2.50</i>	<i>2.49</i>	<i>2.83</i>
Mortality (%)	2.5	3.4	2.6	3.5	4.1	2.4	3.0
Slaughter weight (kg)	103	107	121	117	108	116	122





# Competitive performance - UK

## BPEX Finishing herds results, 12 months, 2013

Ranked by cost/kg LWG

KPI	Top 10 Percent*	Top 1/3*	Average*
Weight at start (kg/pig)	32.48	36.45	38.94
Weight of pig produced (kg/pig)	99.01	102.04	99.41
Mortality	2.25	2.69	3.09
Intake (kg/day)	2.03	2.13	2.20
Feed conversion ratio	2.41	2.59	2.8
Daily liveweight gain (g/day)	842	821	786
Feed cost per tonne (£)	208.88	221.89	248.06
Feed cost per kg gain (p)*	45.64	53.61	68.11
Feed cost per pig produced (£)	30.15	35.06	40.41



# Competitive performance - UK

## BPEX Finishing herds results, 12 months, 2013

KPI	Best?	Top 10 Percent*	Top 1/3*	Average*
Weight at start (kg/pig)	38	32.48	36.45	38.94
Weight of pig produced (kg/pig)	116	99.01	102.04	99.41
Mortality	-	2.25	2.69	3.09
Intake (kg/day)	2.41	2.03	2.13	2.20
Feed conversion ratio	2.42	2.41	2.59	2.8
Daily liveweight gain (g/day)	995	842	821	786
Feed cost per tonne (£)	-	208.88	221.89	248.06
Feed cost per kg gain (p)*	-	45.64	53.61	68.11
Feed cost per pig produced (£)	-	30.15	35.06	40.41



# Competitive Performance Finishing

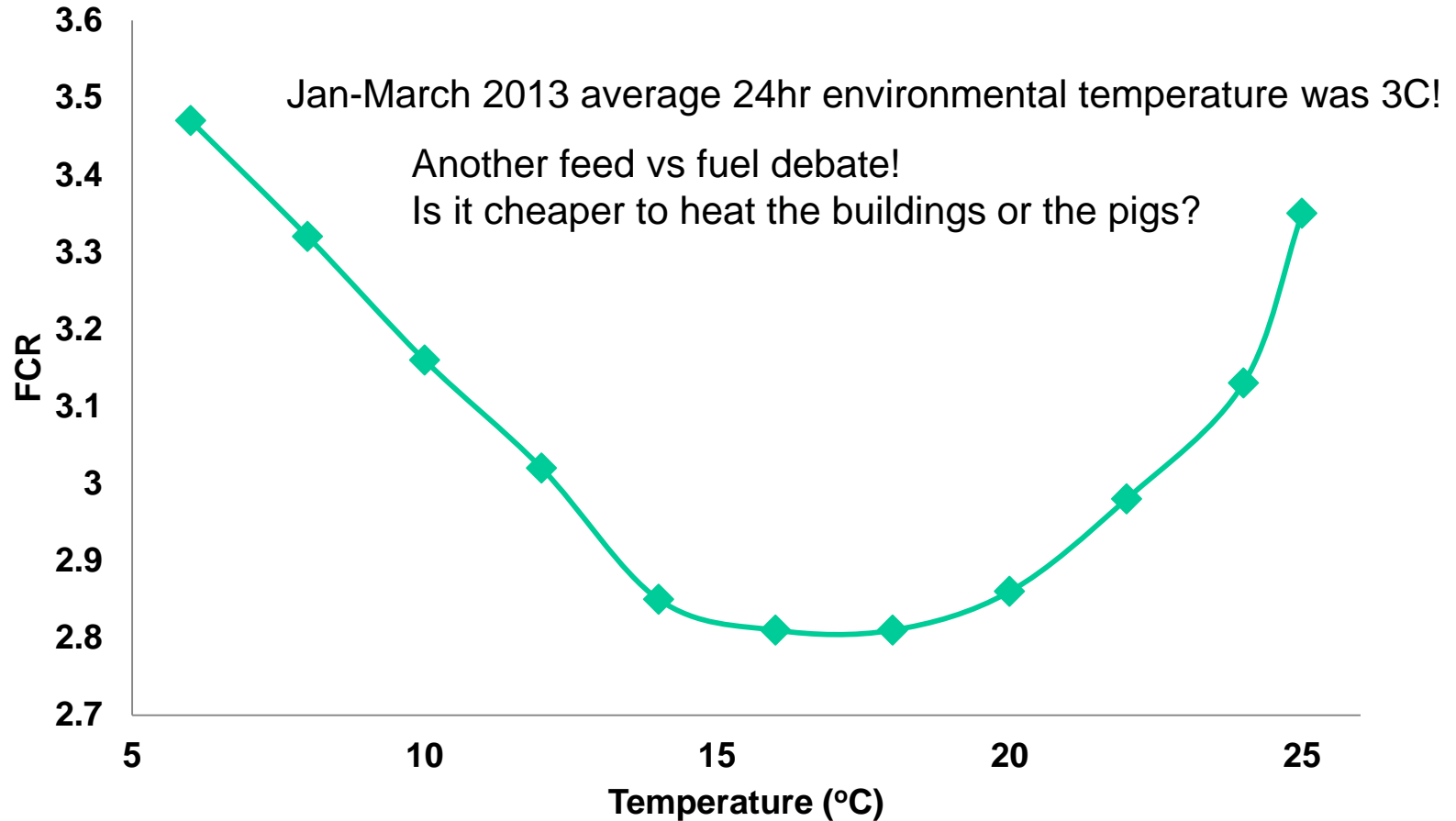
- FCR disappointing?
  - despite entire boars and relatively good health
- But
  - **10 producers now produce 38% of the pigs, 20 producers almost 50%**
    - There is a large “B&B element” to much of this production and environmental control is limited
  - **FCR has no financial value in itself**
    - Very dependent on the feed energy level
    - Pellets 5.1% better FCR than meal (16 references)



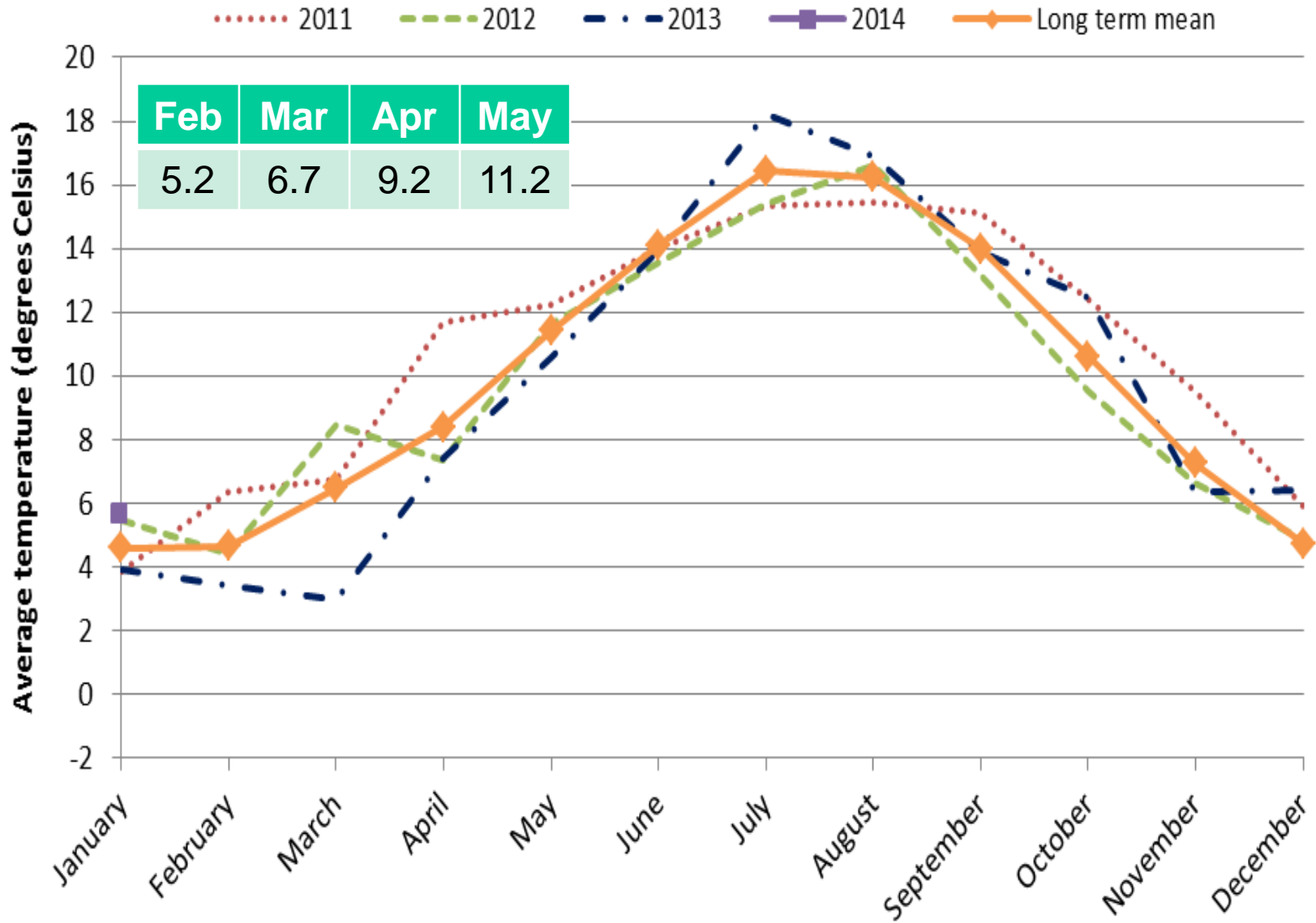
# Competitive Performance

## Finishing

Influence of environmental temperature on FCR (65-110kg)



# Average temperatures





# Competitive performance

- Benchmarking physical and financial performance across countries and within countries is useful
- But the devil is in the detail e.g. 0.15 FCR
  - 2C too cold
  - Pellets vs meal
  - Corn: soya vs typical UK
  - Some therapeutics
  - 6kg weight
  - 4% mortality
  - One testicle!



# Feeding in 2014

## “How precise are we?”

### The theoretical world:

- optimum feed for a 60kg healthy gilt of known genotype
- expected to grow at 900g/day
- eating 2kg/day with minimal wastage
- kept on slats at 18C





# Feeding in 2014

## “How precise are we?”

### The commercial world :

- optimum feed specifications for boar/gilts from 2 breeding farms (terminal sires)
- reasonable health but with some
- feed intake unknown
- straw yard
- pigs in *averaging* about 35kg and







# Feeding in 2014

## “How precise are we?”

Even with decent farm data, economics suggest that *about* 85% of the population should be fed to achieve maximum physical performance (BSAS)

- The best 14% of pigs are growing sub-optimally
- 84% of the pigs are being overfed nutrients adding to environmental concerns



# Feeding beyond 2014?

## The challenge

‘To accurately meet the nutrient requirement of each individual pig despite being in a variable population!’

- individual pig identification
- Daily weight and feed intake monitoring
- feed blending to *precisely* supply the nutrients required by each pig in the population every day



## Typical reaction?

- You have got to be joking Mick
  - 30% or more of our finishing pigs are B&B!
  - Where's the money going to come from?
  - It'll go wrong
- Worldwide demand for meat might increase by 40% in the next 15 years
  - Feed prices look very unlikely to fall
  - Environmental concerns/legislation can only increase
  - The technology already exists
  - What's the prize? Can we make it pay?



# It's an innovation conference Don't be blinkered!!



£2,500 in 1976



£350 in 2014



# Agenda

- 10.25 Future Pig Feeding solutions – Mick Hazzledine
- 10.35 Feed Blending - Richard Hooper, Harper.
- 10.45 Gestal sow feeder - Phil Stephenson
- 10.55 Outdoor ESF – Malcolm Knowles, LKL Faming
- 11.05 Precision Farming – Candido Pomar, Dept of Agriculture and Agri-food Canada
- 11.50 Break
- 12.10 Feed ingredients – Mick Hazzledine, Premier Nutrition
- 12.30 Plant breeding – Chris Tapsell, KWS UK Ltd
- 12.50 Q&A panel
- 13.10 Lunch