

### BACKGROUND

With the ending of the Calf Processing Scheme (CPAS) on the 31st July 1999, Holstein bull calves were initially looked upon as a liability to the farm business. A pilot scheme was established at Greenmount College in association with John Thompsons and Foyle Food Group to assess the commercial viability of rearing Holstein bulls to appropriate slaughter weights demanded by the market. The partners felt that if Holstein bull calves could be profitably reared in a suitable system, they could replace manufacturing beef from intervention stores and imported product .

The experiences gained in the rearing, management and feeding of these bulls, as well as information on the type of carcass required, potential markets and economics of Holstein bull beef production are outlined in this booklet.

### CONTENT

1. Management and rearing of the Holstein bull calf to 3 months
2. Health/Veterinary issues – birth to finish
3. Management and performance of bulls
4. Thompson's 3 Stage Feed Programme
5. Carcass quality and the marketing of bull beef
6. Economics of Holstein Bull Beef production

## 3 Stage Feeding Programme

### MANAGEMENT AND REARING TO 3 MONTHS

- Ensure calves get colostrum as soon as possible after birth ie. 3.5-5 litres /calf (10% of liveweight) fed in two suckled feeds during the first 6 hours.
- Milk Replacer: Offered twice daily – 250g in 2 litres of water. Option of Skimmed milk (acidified) or a Zero skim (whey).
- Ensure good clean hay and water is available.
- Introduce calf starter feed from 5-7 days of age.
- Dehorn calves at 3 weeks of age.



#### Pens

- All in/all out policy
- Power hose and disinfect after each batch of calves
- Pens clean, warm and draught free
- Floor slope 1 in 20
- Calves individually penned up to 8 weeks
- Calves able to see and touch each other
- Calves should have a straw bed up to 6 months of age (Welfare Code)
- Ensure adequate space allowance e.g. 2.1 m<sup>2</sup> for calves weighing 150 to 500kg

#### Weaning

Bull calves should be weaned:

- when consuming 1kg of concentrate/day
- at 6 to 7 weeks of age
- weighing at least 70kg
- healthy and free from disease

#### After weaning

- gradually replace hay with straw
- no more than 20 calves per batch

### HEALTH/VETERINARY ISSUES

#### Pneumonia Prevention

##### 1. Avoid stress

- All in/all out policy
- No mixing of animals
- Vaccination recommended against : Pasteurella, RSV/P13

##### 2. Ensure adequate ventilation

- Natural ventilation – air movement above calf level, but no draughts
- Fan assisted – polythene duct air distribution system - speed controllable fans



*Polythene duct air distribution system*

##### 3. Correct stocking density

##### 4. Ensure adequate feeding space

##### 5. Keep humidity and dust to a minimum

#### Prevention of other problems

- Scour in young calves – adequate colostrum
- Laminitis + liver abscesses – avoid sudden changes in diet
- Urinary calculi – fresh water at all times; correct mineral balance (Ca:P)
- Bloat – fresh straw at all times
- Ringworm – clean and disinfect pens

### 3 Stage Feeding Programme

#### MANAGEMENT AND PERFORMANCE OF BULLS

##### Management from weaning to 5 months

- Feed offered in hopper after weaning (holds 250kg; 120mm trough space/head; feed continuously available; reduces gorging; feed always fresh; reduced labour and no bird contamination)
- Gradually change from Starter to Link feed at 3 months of age
- Clean, fresh straw and water always available
- Gradually introduce Finisher feed from 5 months of age
- Do not mix calves after 5 months of age

##### Management from 5 months to finish

- Ensure straw, feed and water always available
- Market at 480-500kg live weight
- Do not mix batches of animals prior to slaughter – "Dark Cutters"
- Notify meat plant in advance so bulls can be slaughtered on arrival



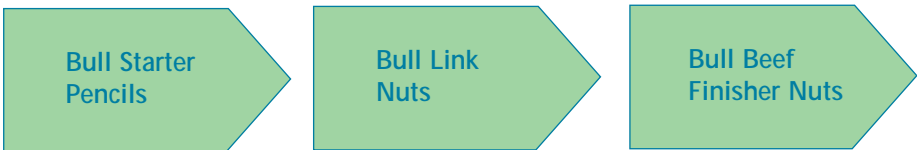
##### Interim Performance Figures

	Live weight (kg)	Weight gain (kg/d)	Feed intake (kg/d)	FCR
Birth	40	0.7		
Weaning	90	1.2	2.9	2.4
Introduction of Link feed	115	1.3	5.1	3.9
Introduction of Finisher feed	180	1.4	6.8	4.9
Slaughter	480			
Wean to slaughter		1.35	6.5	4.8

## Interim slaughter weights and grades for Holstein bulls

- Live weights 479 kg
- Age at slaughter 353 days
- Carcase weights 247 kg
- Kill out 52 %
- Grades 5 x P3  
1 x O-3  
2 x O-2  
1 x O3

## THOMPSON'S 3 STAGE FEEDING PROGRAMME



Age	Birth	3 months	5 months	12 months
Target Weight	40kg	110kg	180kg	480kg
D.L.W.G.	0.8kg	1.2kg	1.4kg	

## Thompson's 3 Stage Bull Beef Programme

### Bull Starter (0 – 3 months of age)

- Formulated to ease transition from milk to solid feed; ensure good development of rumen and maximise performance at this critical stage.
- High energy, highly palatable to maximise dry matter intakes
- High quality protein to maximise muscle growth and development
- High mineral/vitamin specification to ensure optimum calf health
- To achieve target daily liveweight gain (D.L.W.G.) of 0.8kg to reach 110kg @ 3 months

## 3 Stage Feeding Programme

### Bull Link Nuts (3 –5 months of age)

- Formulated to ease transition on to the higher starch finishing ration
- Formulated to avoid digestive upsets
- 17% protein ration – promotes muscle growth before finishing period
- To achieve target D.L.W.G. of 1.2kg to reach 180kg @ 5 months

### Bull Beef Finisher Nuts (5 months to slaughter)

- Formulated for high D.L.W.G., economic performance and carcass quality
- High energy content to maximise performance
- High cereal and starch content
- Quality protein (16%) – to maximise muscle growth and D.L.W.G.
- Digestible fibre to aid digestion
- Correct mineral balance to maximise performance, avoid urinary calculi, etc
- Contains added buffers and a live yeast (Levucell) to help prevent acidosis, bloat and maximise performance
- To achieve target D.L.W.G. of 1.4kg to reach 480kg @ 12 months

## CARCASS QUALITY AND THE MARKETING OF BULL BEEF

### The Market – where ?

- Manufacturing customers
- Catering customers
- Both of these markets are growing

### The Market – what is required ?

- Farm Quality Assurance Scheme (FQAS)
- Thompsons Quality Assurance Feed
- Full traceability from Feed to Fork
- 820/97 compliant (Identification and Movement Regulations)
- Consistent finished product
- Three Stage Thompson Feeding Programme



*Quality Assurance at Thompsons*

### The Market – opportunity ?

- 12 month production cycle
- 0.3 livestock unit average (for extensification)
- Efficient use of Beef Special Premium
- Utilises dairy bred bulls
- Competes with imports

## ECONOMICS OF HOLSTEIN BULL BEEF PRODUCTION

## 1. Gross Margin – Holstein Bulls

<b>Variable Costs</b>		<b>£</b>
Rearing costs to 12 weeks		
- Milk replacer 20kg @£1,200/t	24 )	
- Calf rearer 130kg @£180/t	23 )	56
- Straw, vet and sundries	9 )	
Concentrates 1.9 tonnes @£118/t		224
Straw 200kg @£50/t		10
Vet and miscellaneous (transport, slaughter, etc.)		33
<b>Total Variable Costs</b>		<b>323</b>
<b>Output</b>		<b>£</b>
250kg carcase @ £1.36/kg		340
Bull premium	115 (185 euros)	149
Slaughter premium	34 (53 euros)	
Less calf value including mortality allowances		(15)
<b>Total Output</b>		<b>474</b>
Gross Margin		151
Interest on working capital @9%		14
<b>Net Margin *</b>		<b>137</b>
<i>* If eligible for extensification</i>		
- Lower premium rate	£21/BSP	<b>158</b>
- Higher premium rate	£41/BSP	<b>178</b>

### 3 Stage Feeding Programme

#### 2. Net Margin per Holstein Bull – Sensitivity Analysis

	Carcase price/kg				
Meal cost/t	£1.40	£1.35	£1.30	£1.25	£1.20
£100	£176	£164	£151	£139	£126
£105	£166	£154	£141	£129	£116
£110	£157	£145	£132	£120	£107
£115	£147	£135	£122	£110	£97
£120	£138	£126	£113	£101	£88
£125	£128	£116	£103	£91	£78

#### 3. Factors affecting Profitability

- Beef Special Premium/Extensification Premium
- Guaranteed minium carcase price/grade (10p/kg = +/- £25)
- Cost of concentrates per tonne (£10/t = +/- £19)
- Daily live weight gain (0.1 kg/day = +/- £20)
- Feed conversion (0.1 FCR = +/- £4.50)

#### 4. Advantages of Holstein Bulls

- No land required
- Quick turnover (12 months)
- High margin/month
- Lower fixed costs than traditional systems
- Maximise subsidy payments per hectare