

# Lean Managing Calves and Youngstock

James Hague

Kay Carson

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# Lean Management – a recap

- Maximize value and minimize waste
- Identify where the value is in your system and develop a **plan with targets** to maximize it
- Identify where losses occur in your system and **plan with targets** to eliminate them
- **Execute the plan**
- **Measure performance** to ensure targets are met

# Where is the value in heifer rearing?

- Profit over input costs from calf to calving heifer (James)
  - Optimal growth rates (0.7-0.8kg/day in the first 6 months)
  - Achieve puberty at 9 months and first breeding at 14 months
  - Minimize the number of unproductive animals kept on farm
- Heifer and cow lifetime performance
  - Greater longevity (associated with strong early growth)
  - Greater lifetime yield
- Source: Prof DC Wathes et al., RVC, 2008, Reducing the wastage in the dairy herd, D. project

# Where are the losses in heifer rearing?

- Calf mortality
  - Complications at calving
  - Deficient colostrum intake
  - Disease (housing)
  - Monitor feed intake and weight gain (not age alone) before weaning
  - Dehorn after weaning
- Deaths before 1<sup>st</sup> lactation
  - Disease
  - Accidents
- Culls after the first lactation
  - Infertility associated with late first calvings in turn associated with poorer weight gain performance in first 6 months

# Current Situation

- Replacements rates vary a lot!
  - 17% (6 lactations)
  - 40% (2½ lactations)
- Good benchmarks to performance
  - Age at first calving**
  - Ranges from **24 months** → **36 months**

- Milk per cow per year of life

|                       |                      |
|-----------------------|----------------------|
| Rearing time          | Number of lactations |
| Length of dry periods | Yield                |

NMR data Nov 2010 Holstein herds 100-200 cows.

**Lowest**

3399 litres

**Average**

4976 litres

**Highest**

7173 litres

**DairyCo**

# Direct calf and heifer losses: how big are they?

- DairyCo study into heifer persistence in the herd
  - 20 farms, 20 heifers/farm
- Calf mortality (by 24 hrs) 4%\* (\*est. heifers only)
- Liveborn calves failing to reach 1<sup>st</sup> calving 14%
- Calving heifers not reaching 2<sup>nd</sup> lactation 15%
- **Total losses 33% fail to reach 2<sup>nd</sup> lactation**
  - Poor growth before 6 months
  - Infectious disease – pneumonia, rotavirus

# Hidden losses: higher number of youngstock per replacement

| Age at first calving<br>(months) | Herd replacement rate (%)<br>( 5% calf mortality)<br>Based on per 100 cows |    |    |    |    |    |    |
|----------------------------------|--|----|----|----|----|----|----|
|                                  | 17   | 20 | 23 | 26 | 29 | 32 | 35 |
| 22                               | 33   | 39 | 44 | 50 | 56 | 62 | 67 |
| 24                               | 36   | 42 | 48 | 55 | 61 | 67 | 74 |
| 26                               | 39   | 46 | 52 | 59 | 66 | 73 | 80 |
| 28                               | 42   | 49 | 56 | 64 | 71 | 78 | 86 |
| 30                               | 45   | 53 | 60 | 68 | 76 | 84 | 92 |

**Age at calving affects no. of youngstock on farm**

# Costs of Heifer Rearing?

## Basic data input

Press Esc for navigation menu

# D.

Please enter basic cost data below.

|                               |   |           |                                       |                                       |                 |
|-------------------------------|---|-----------|---------------------------------------|---------------------------------------|-----------------|
| Replacement heifer calf value | <input type="text" value="£ 200.00"/>   | per head  | Silage                                | <input type="text" value="£ 30.00"/>  | per tonne       |
| Beef calf value               | <input type="text" value="£ 100.00"/>   | per head  | Land opportunity cost                 | <input type="text" value="£ 90.00"/>  | per acre        |
| Milk powder                   | <input type="text" value="£ 1,500.00"/> | per tonne | Fertilizer cost                       | <input type="text" value="£ 225.00"/> | per tonne       |
| Calf starter mix              | <input type="text" value="£ 210.00"/>   | per tonne | Fertilizer spreading cost             | <input type="text" value="£ 4.00"/>   | per acre        |
| Feeding straw                 | <input type="text" value="£ 70.00"/>    | per tonne | AI price                              | <input type="text" value="£ 18.00"/>  | per service     |
| Bedding straw                 | <input type="text" value="£ 60.00"/>    | per tonne | Conception rate to AI                 | <input type="text" value="55"/>       | %               |
| Mortality rate                | <input type="text" value="4"/>          | %         | Interest rate                         | <input type="text" value="4"/>        | %               |
| Labour costs                  | <input type="text" value="£ 10.00"/>    | per hour  | Margin per litre after feed and quota | <input type="text" value="18"/>       | pence per litre |
| Rearing concentrate           | <input type="text" value="£ 190.00"/>   | per tonne |                                       |                                       |                 |

# Costs of Heifer Rearing?

## Summary of costs

|   | Cost of rearing to point of calving | Heifer lactation yield | Milk produced from calving to 33 months | Margin over all feed and quota | Net cost of heifer to 33 months |
|---|-------------------------------------|------------------------|---|--------------------------------|---------------------------------|
|   | £                                   | litres                 | litres                                  | £                              | £                               |
| System 1. Very low input system, calve at 33 months | 1348                                | 8200                   | 0                                       | 0                              | 1348                            |
| System 2. Low input system, calve at 28 months      | 1101                                | 7700                   | 4235                                    | 762.3                          | 339                             |
| System 3. Medium input system, calve at 25 months   | 1037                                | 7400                   | 5920                                    | 1065.6                         | -28                             |
| System 4. High input system, calve at 22 months     | 1037                                | 7200                   | 7200                                    | 1296                           | -259                            |

These costs of rearing to the point of calving do not include costs for machinery, property repairs or other fixed costs such as water, electricity or insurance.

# Costs of calving after 25 months

- 100 cows example @ 20% replacement rate (using D. calculator)
  - Calving at 25 months = 20 heifers  
 $£1037 \times 22 = \mathbf{£22,814}$
  - Calving at 28 months = 25 heifers  
 $£1101 \times 28 = \mathbf{£30,828}$
- **£8,000 difference...**
- Costings data highlights costs at **2.5+ppl**

# Value of hitting heifer management targets

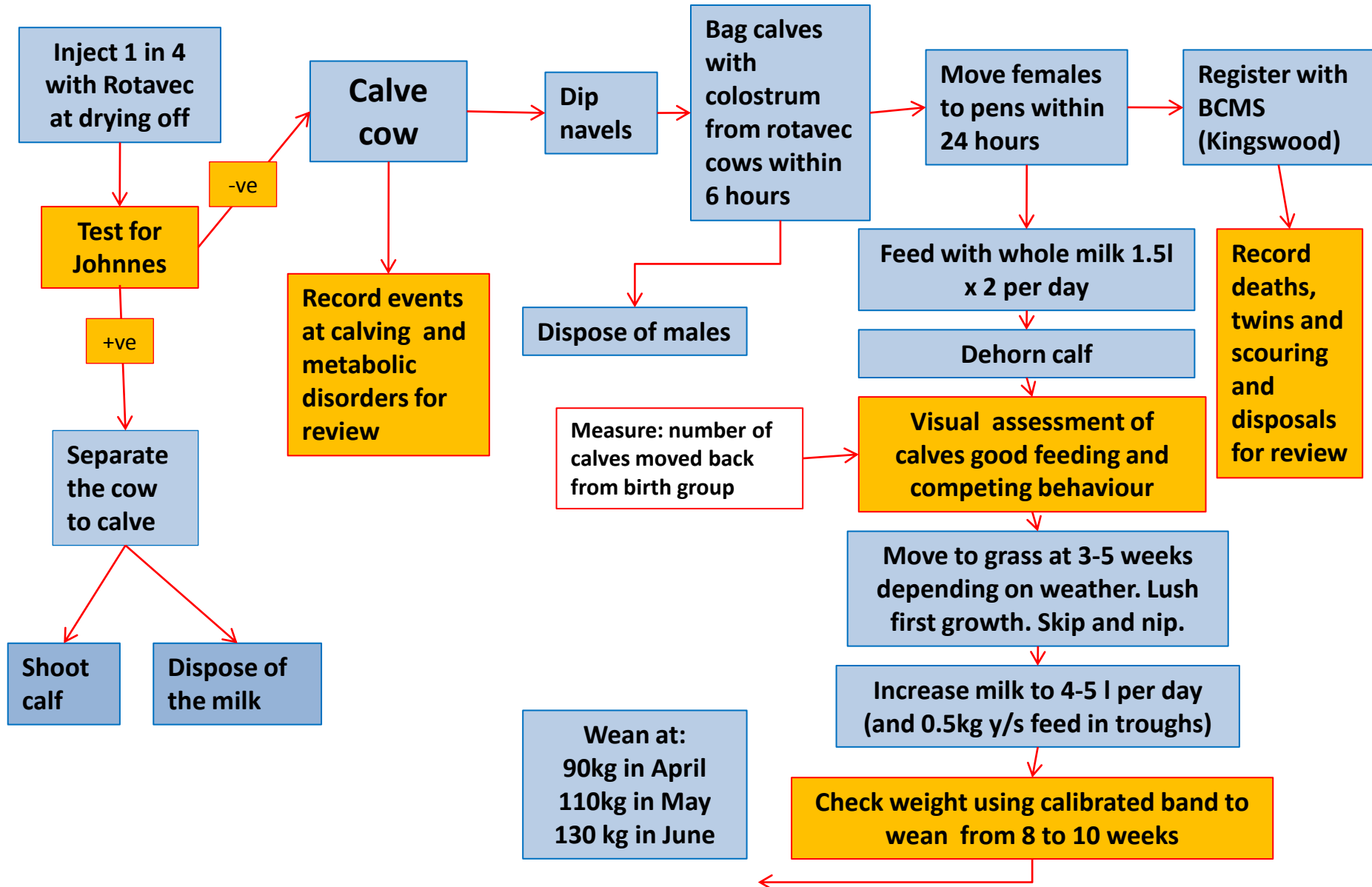
Production and fertility: 1 farm, 125 heifers

| Calving Age (months)                  | 22-23  | 24-25  | 26-28  | 32-36 |
|---------------------------------------|--------|--------|--------|-------|
| Pre-calving weight (kg)               | 591    | 621    | 625    | 769   |
| Calving Assistance (%)                | 17%    | 17%    | 27%    | 67%   |
| Weight loss post calving (kg)         | 32     | 26     | 6      | 59    |
| Cows still alive at 5 years (%)       | 86%    | 62%    | 41%    | 33%   |
| Total 5 year milk yield (kg)          | 25,031 | 20,395 | 16,671 | 8,029 |
| Time in milk during first 5 years (%) | 48%    | 42%    | 38%    | 18%   |

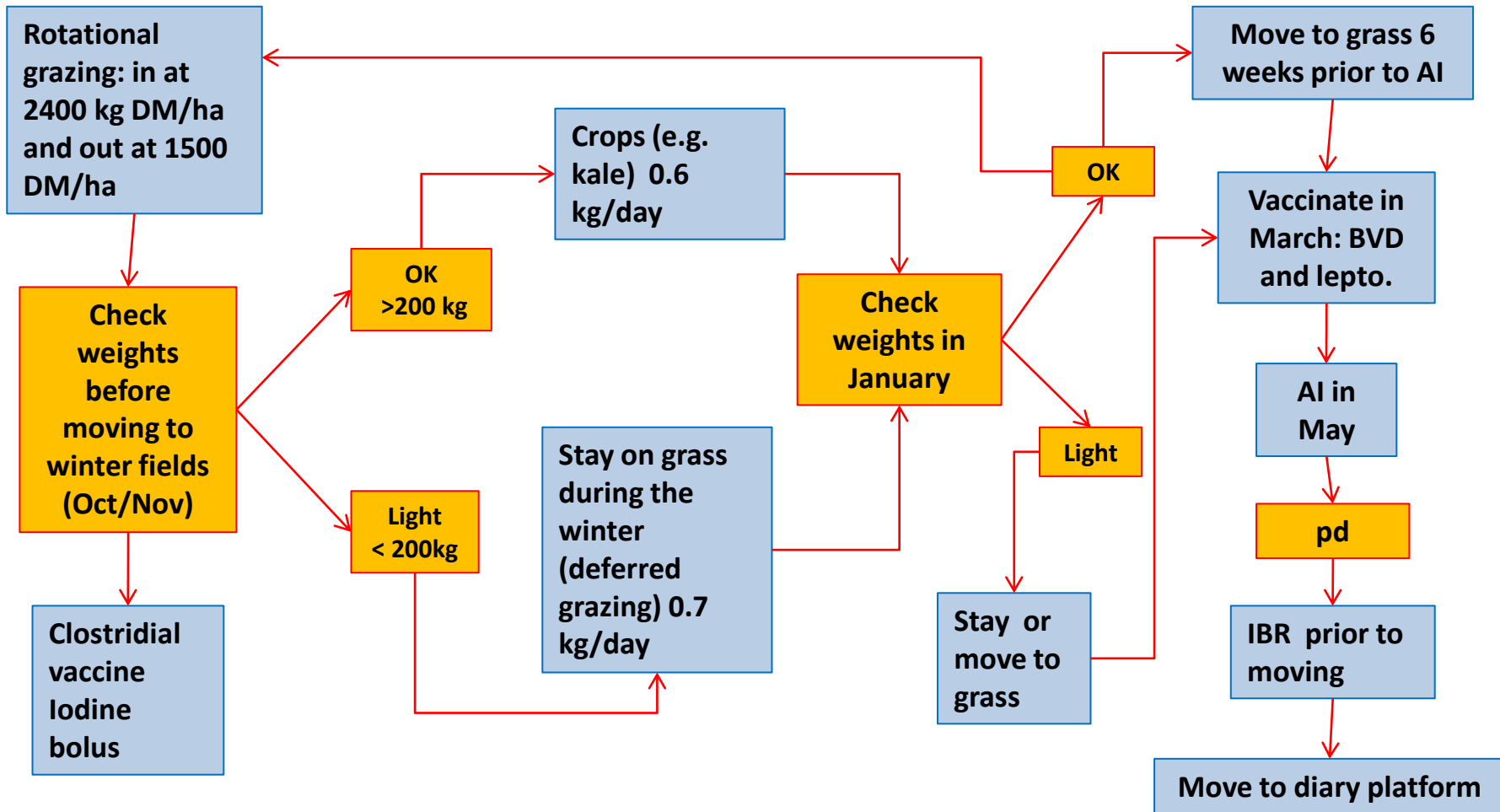
# Effective Management

- Management that achieves what it sets out to achieve.
- Best practice is not in question – implementation is.
- Plan, Do, Review, Act
- What specific managements action are needed to deliver minimum direct losses and desired rates of growth?

# Calf Management (Spring Block)



# Youngstock Management (Grass reared)



# Lean management is effective

- Timely data collection and review are key
- At Clive Hall we have developed a daily diary for weekly performance review
- Action is taken on the basis of actual performance to ensure targets identified in the plan are met
- The aim is to be proactive and identify losses before they occur

# Conclusions

- There are significant short and long term gains to be made from effective heifer management
- The technical targets are broadly agreed on
- The challenge is to discipline the management on farms to achieve those targets
- Measuring the effectiveness or success of your actions against targets is the key to increased profitability