Breeding cow performance

Rebecca Hickson

Performance – simple measure

- A decent weaner calf
- Cow pregnant again

Real measures of performance

- Her output: weaned calves
  - How many, how big?
- Her contribution to the farm as a whole
  - Pasture maintenance, feed buffer

- Her inputs: feed

Feed requirements of beef cows

- Maintenance
  - Depends on liveweight, not production
  - About 70% of annual feed intake
- Liveweight change
- Pregnancy
- Lactation

Efficiency of beef cows

- 70% of feed required in a beef system rearing steers to slaughter at 300 kg carcass weight is eaten by the beef herd

- 70% of that is used to maintain the breeding cows

Feed requirements vs live weight

- 500 kg cows with 85% calving and 200 kg weaners eats 3,900 kg DM/year

- 550 kg cows with 85% calving and 200 kg weaners eats 4,100 kg DM/year

- 550 kg cows need to wean 215 kg calves to have the same output of calf per kg DM

Efficiency vs production

$$\frac{calving\ percentage \times calf\ weaning\ weight}{cow\ live\ weight\ at\ weaning}$$

- More and bigger calves increase efficiency
- Cow live weight used as a proxy for feed eaten

- Aim is to increase production per unit feed

Contribution to farm

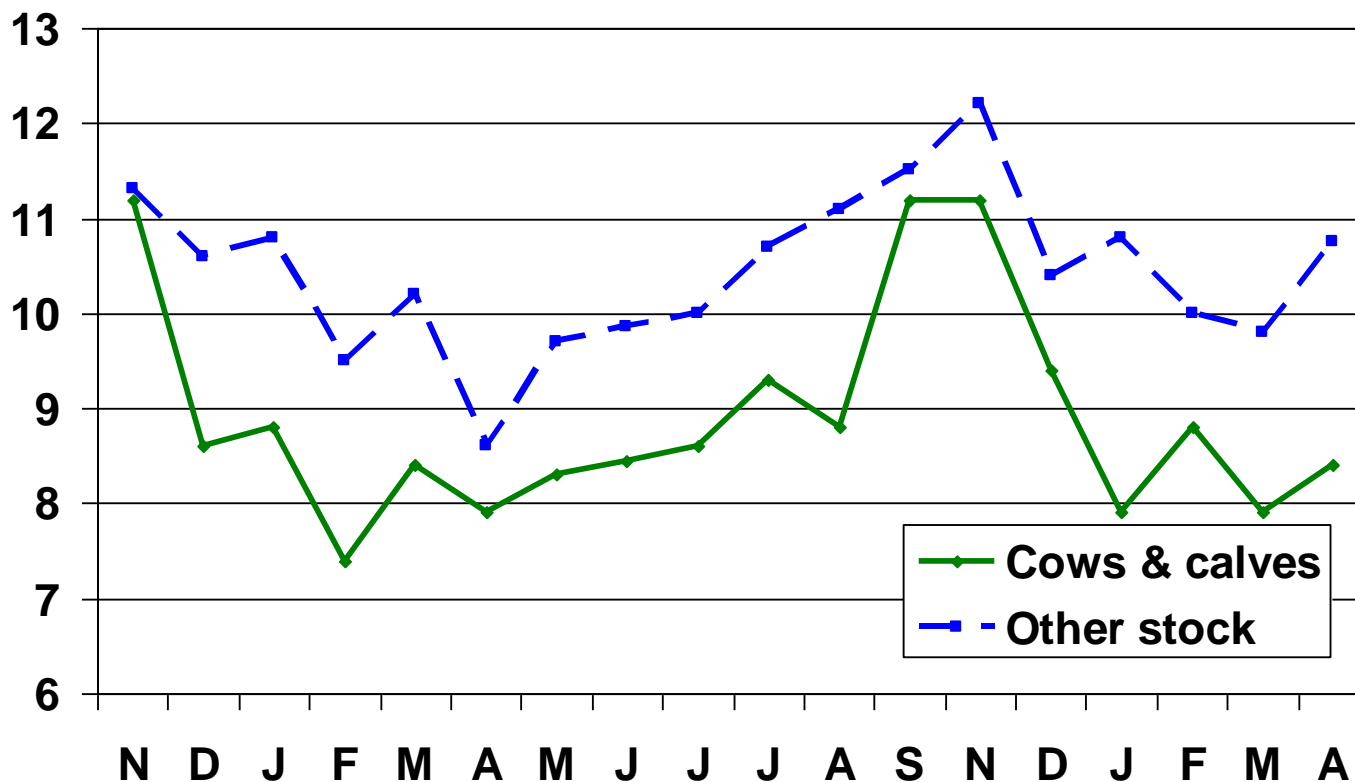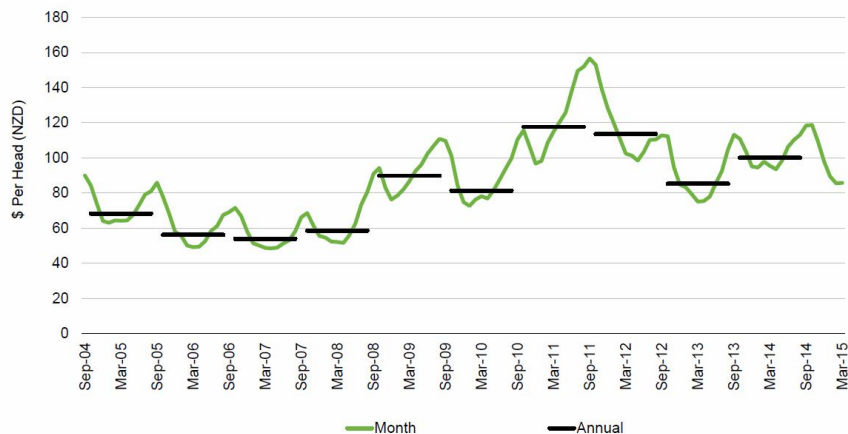- Cleans up pasture for other stock

Figure courtesy of D Smeaton, AgResearch; McKay Focus farm, Northland.

Contribution to farm

- Cleans up pasture for other stock
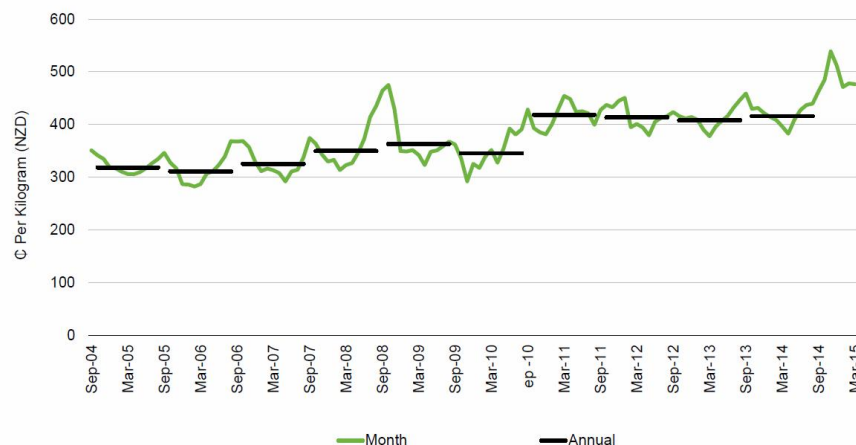- Diversification of income

Lamb Price — New Zealand – All Grades. Source: Beef + Lamb New Zealand Economic Service. beef+lamb new zealand

Steer and Heifer Price — New Zealand – P Grade (270 – 295kg). Source: Beef + Lamb New Zealand Economic Service. beef+lamb new zealand

Contribution to farm

- Cleans up pasture for other stock
- Diversification of income
- Buffer mob for feed shortages

Measures of performance

- What is she producing?
  - Calving percentage
  - Weaning weight
- What is she costing?
  - Live weight
- Is she working for the farm system?
  - Is there a need for a pasture control tool?
  - Is her body condition being used effectively?

KPIs for breeding cows

- Calve first at 2 years of age

Calving heifers

- Need to be well grown at 15 months
- Need to be fed from mating to rebreeding (15-27 months)

- Will increase calf production (and efficiency) far more than tweaking MA cow calving %

KPIs for breeding cows

- Calve first at 2 years of age
- Calve on time, every time

Pregnancy rate

- Average 91% after 10-12 week mating
- Top 10% get 90% after 6 weeks

- Paddock topography and mating ratio
- Bulls: fertility and soundness
- Cows:
  - Length of the calving period
  - Feeding calving to mating, BCS

Calving spread

- Weaning is a fixed date, so calves born early in the calving period are heavier at weaning (about 1 kg per day)
- More uniform line of calves for sale

- Cows have the same nutritional needs at the same time – match these to pasture supply

Calving spread

- Calving spread is a key driver of reproductive performance
- Post-partum anoestrus ~60 days
- Mating starts 83 days after calving starts
  - A late calver only just calved when bull goes in
  - Easier to keep it short than shorten it
- 6-7 weeks of mating ideal, 9 maximum
- Mate heifers for 6 weeks maximum

Timing of calving

- Usually matched to the spring flush
- Cows set-stocked among ewes
- Don't start gaining condition until pasture grows in spring
- If cows are not gaining between calving and mating
  - Move calving date back
  - Calve in BCS6

KPIs for breeding cows

- Calve first at 2 years of age
- Calve on time, every time
- Rear the calf to weaning

Calf survival

- For every cow culled empty, another cow is wintered but doesn't wean a calf

- Where do your calves go?
  - Abortion, death of pregnant cow, dystocia, stillbirth, disease, exposure, misadventure, mismothering…

KPIs for breeding cows

- Calve first at 2 years of age
- Calve on time, every time
- Rear the calf to weaning
- Produce a calf that performs post-weaning
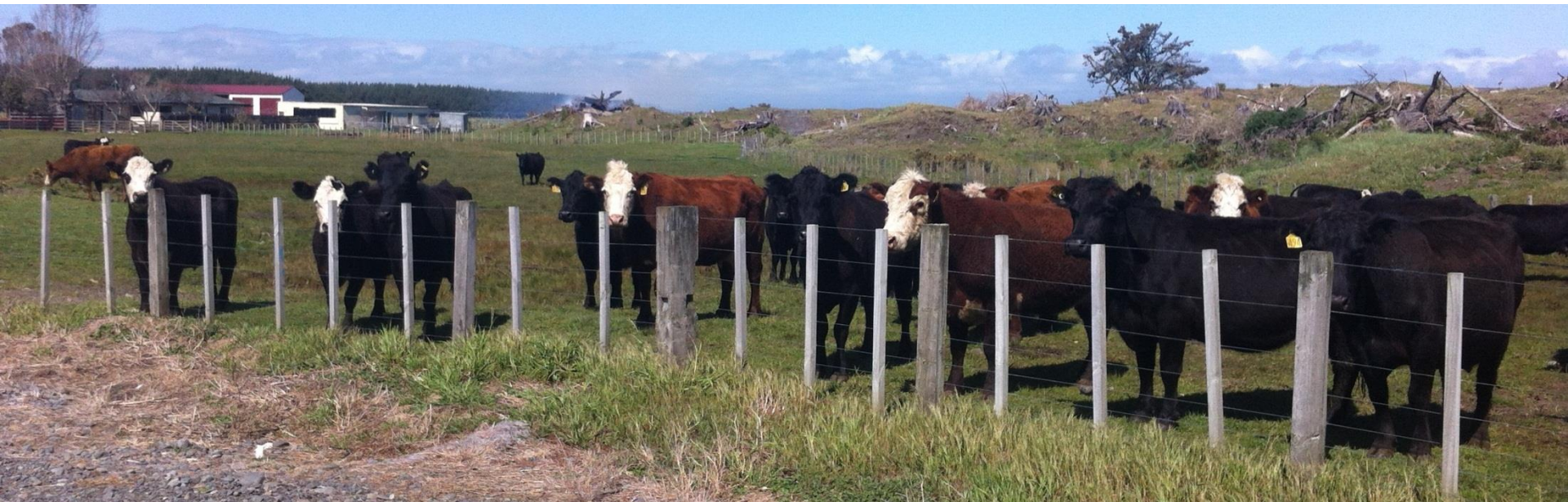
KPIs for breeding cows

- Calve first at 2 years of age
- Calve on time, every time
- Rear the calf to weaning
- Produce a calf that performs post-weaning
- Not be too heavy compared with her calf

Live weight of cows

- Relativity is important
- Target 50% of cow live weight (200d)

- 500 kg cow → 35 kg calf born → 250 kg calf weaned → requires 1.08 kg/d

- 600 kg cow → 42 kg calf born → 300 kg calf weaned → requires 1.29 kg/d

- Small(er) cows not skinny cows

KPIs for breeding cows

- Body condition reserves used appropriately in the farming system

KPIs for breeding cows

- Calve first at 2 years of age
- Calve on time, every time
- Rear the calf to weaning
- Produce a calf that performs post-weaning
- Not be too heavy compared with her calf
- Body condition reserves used appropriately in the farming system
- Do all this whilst on pasture clean-up duty

Management to achieve KPIs

- Time periods:
  - Calving to mating
  - End of mating to weaning
  - Weaning to calving

- Aim to reach BCS targets at calving and mating

BCS Targets

Calving
BCS 5

Mating
BCS 6

Weaning
BCS 7

Mid winter
BCS >4
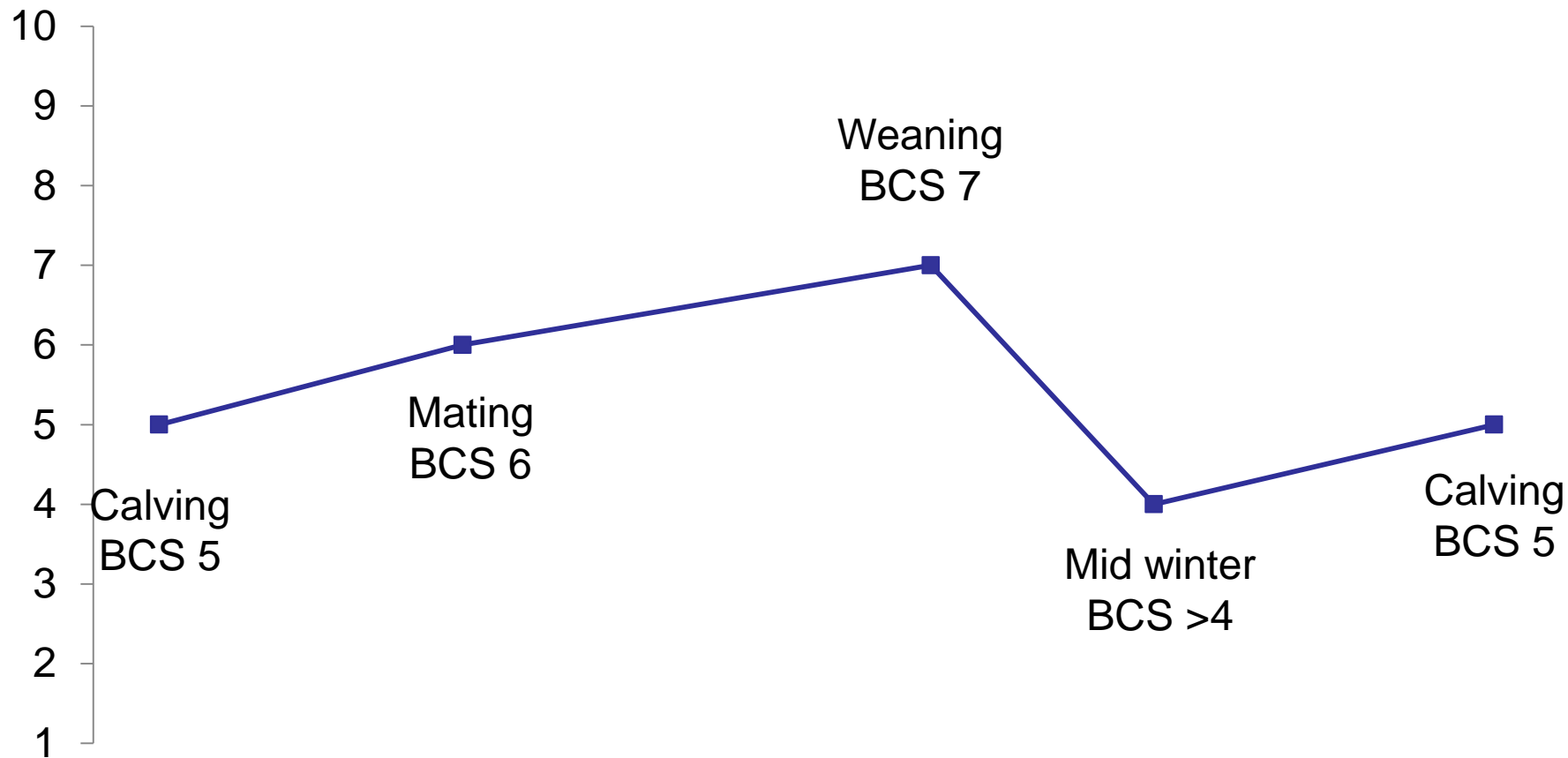
Calving
BCS 5

Calving to mating

- Critical time period!
- Lactation peaks 30-80 days post-calving
  - Feeding well now gets calves growing
- Cows in BCS 6 will have the best chance of getting pregnant early in mating period

- Usually cheapest feed available so good time to put condition on cows

End of mating to weaning

- Depends on season
- Usually cleaning up summer pasture
- High allowance, poor quality feed

- If dry, may mobilise body condition
- Time of weaning varies – feed available for weaned calves versus cows and calves

Weaning to calving

- Cows on clean up post-weaning
- Mobilise 2 BCS in 100 days post-weaning
- Poor quality feed and low allowance
  - Adding value to other stock classes
- Draft off skinny cows for preferential feeding
- Can't gain condition in very late pregnancy
- Aim for BCS at least 5 at calving

Using the BCS buffer

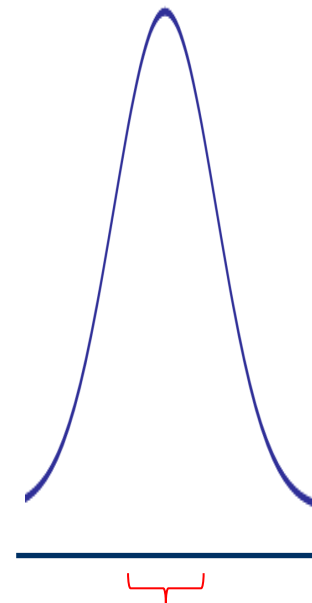- 100 cows that go from **BCS 7 to 5** in 100 days need about 25% less feed than 100 cows that started at BCS 5

- About 1300 fewer bales of hay
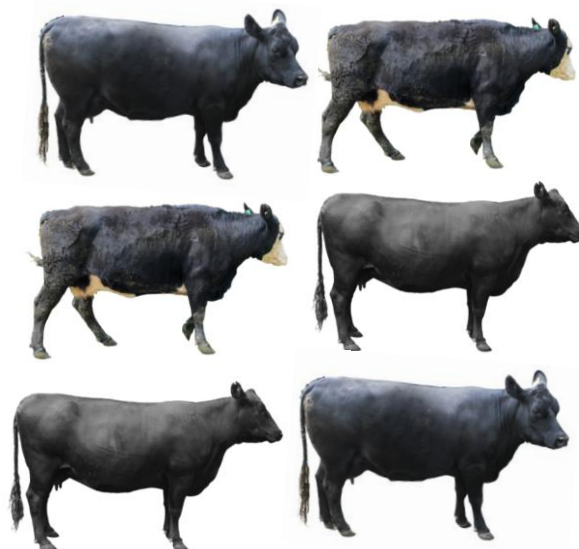- Frees up enough pasture to put 0.5 BCS on 800 ewes
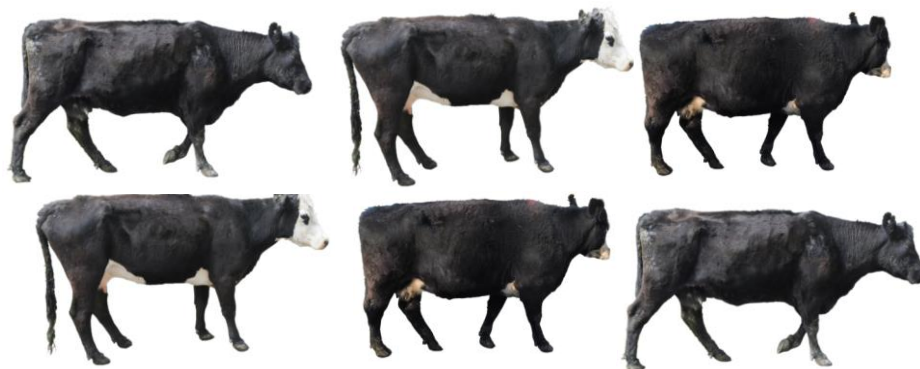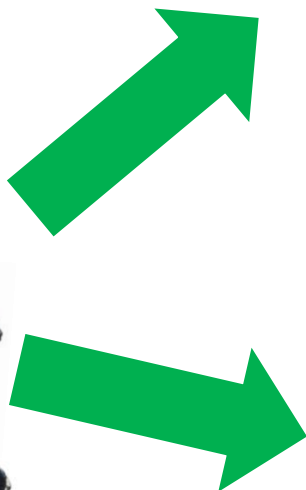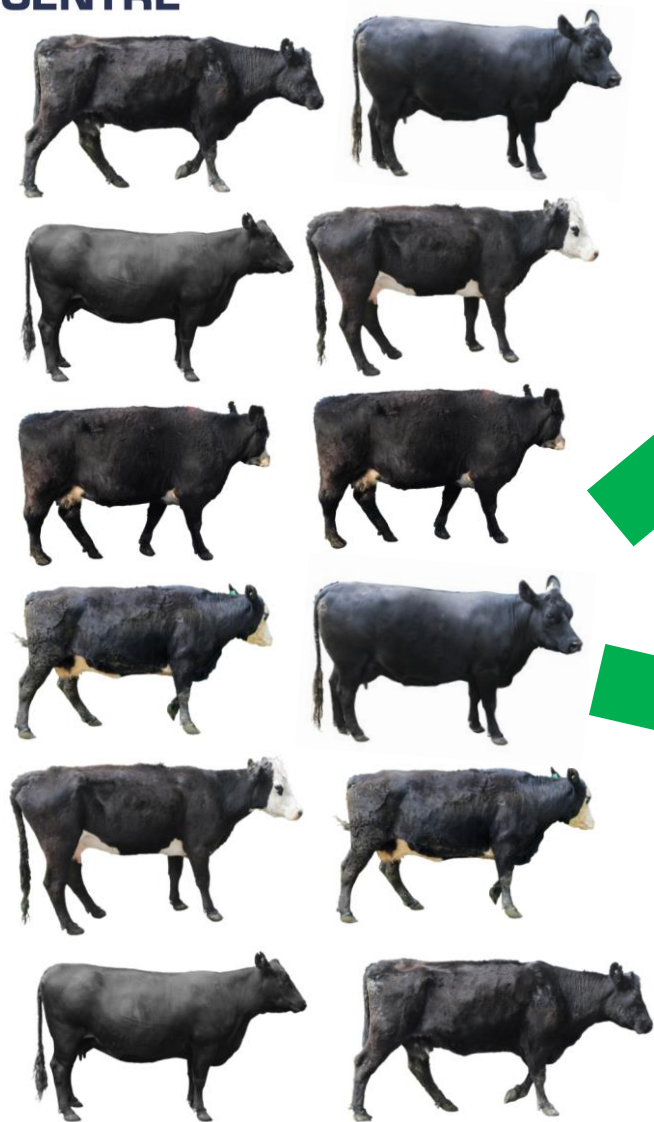
Threshold not average

- A mob average means half above and half below target
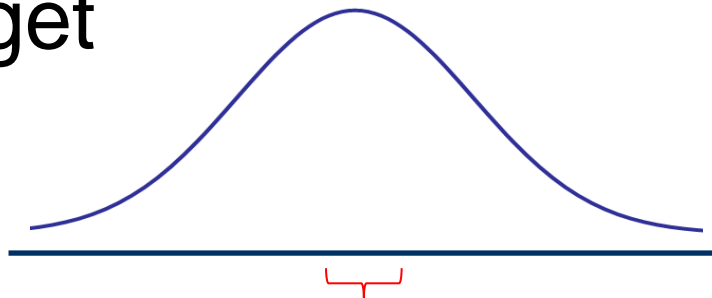
- Too fat is wasted resources

- Too thin reduces performance

- Draft on BCS

Draft on BCS

Performance targets

- Wean 90 calves per 100 cows mated
- Grow calf at >1 kg/day to weaning
- Produce 0.48 kg calf/kg cow live weight at weaning

	2014	2015	2016
1. SI high country	82	89	82
2. SI hill country	85	92	94

Summary

- How does the beef cow fit into your system?
- How is she performing relative to her KPIs?
  - Where can she make improvements?
  - How can you make improvements?