

Growing Great Heifers Notes

Need well grown heifers (not big) for their genetic background.

Why bother? They are the biggest individual group in the herd.

Aim: priority is to get heifer back in calf and milk a full lactation.

To get in calf need:

- To achieve positive skeletal growth and liveweight gain equal or above target.
- No disease or death.
- 80% 3weeks in calf rate, less than 3% empty.
- Well developed gut.

Aim:

- Fully grown, in milk, problem free, socially adjusted 20-24 month heifers.
- Replacement rate 15-19% only.
- Optimum social adjustment, no fear.
- Better BCS and reproduction than older herd mates.
- Production $\geq 0.8\text{kgMS/kgLWT}$.

Need:

- Healthy, well grown weaners with well developed rumen and proper skeletal and frame.
- 10-11 week targets – 120 kg Friesians, 90 kg Jersey.
- Good disease prevention program.
- Appropriate feed and management.
- i.e. excellent cow transition management followed by excellent calf rearing.

To grow they must eat more each day than the day before i.e. maintenance today will be more than yesterday if heifer has grown. Cannot afford days of “no growth”. Difficult to make up lost days.

Principles of growing are similar to milk production apart from:

- small muzzles and small gut, can only take small meals.
- Removal of milk stimulates appetite in cow. No such stimulation in young stock so management must stimulate intake above maintenance.

Weaners

- Small mouth and rumen – long, rank, seedy pasture unsuitable.
- Browsers, short milking quality pasture.
- Very industrious if given opportunity.
- Don't use to chew out paddocks.

- Large mob, move every day to new feed or spread around farm approximately 1-2/ha.
- Don't have to be on pasture.

Problems

- Winter
 - Can't be on maintenance.
 - Cold and wastage effects underestimated.
 - Not fed enough.
 - Small animals less cold tolerant and higher maintenance requirement per kilo.
- Crops: inappropriate for age, nutritional deficiencies, poor adaptation, acidosis, lack of fibre.
- Water
 - Insufficient.
 - Can't reach.
 - Can't find.
- Bone growth requires Cu (especially), Ca, P as well as protein.
- Parasites
 - Management.
 - Nutritional status.
 - Youngstock only blocks.
- Facial eczema
 - Underestimated.
 - Prevention method may affect grazing behaviour, growth rate.
- Poor transition from farm to grazier and back.
- Maintenance only
 - Not enough only.
 - Poor quality feed.
 - Hot weather.
- In calf heifers basically lazy, happy to eat maintenance but no more, especially if hot, or feed poor quality. Look great, nice and shiny but not meeting growth targets.
- Inadequate protein
 - Not eat enough total dry matter.
 - Low protein feeds.
 - Too much starch.
 - All of the above.
 - Signs: hairy, pot gut.
- Wrong expectations – small heifers are common and accepted as normal.
- Don't weigh enough.
- Poor pasture management.
- Liveweight targets decided on wrong basis.
- Poor nutrition – energy, protein, DMI, minerals.

Can they grow too fast? Probably not.

Can they be on the wrong diet. Probably.

NZ problem:

- Heifers are too small.
- If it were possible to get too much fat in the udder, probably irrelevant.

Examples of optimum growth: 500-900g/day (data from Sydney), 820-850g/day ADG birth to calving at 24months (France).

Age at first calving – Friesian 21-24 months, Jersey 18-21 months.

- Must be skeletally fully grown.
- Earlier calving heifer more profitable and have greater longevity, provided they calved at target liveweight. ≥ 28 month first calving heifers most unprofitable and have higher cull risk.
- Increasing age at first calving may improve chances of heifer calving at target liveweight but unprofitable.

Well grown, well managed first calving heifers will be nearly as tall as cows, have better reproduction as in milk heifers than their herdmates, be in better body condition and have flatter lactation curves.

Advantages can be lost with poor adaptation to milking and/or transition, or large breed calf.

Small, undergrown heifers dominate anoestrus and empty figures, have high health and feeding costs, plus don't produce well enough. High risk for less than 2 lactations in milk.

Remember:

- Can't grow bigger than its genetic size.
- Can easily undergrow heifers.
- Growth not achieved by first calving will be achieved eventually using milk producing feed.

How big? When?

- 90% mature liveweight at 22 months? Unrealistic??
- 80-85% mature liveweight at point of calving, 20-26 months?? More realistic.

Mature liveweight targets

- Jersey 440+kg; US Jersey 480 kg; Crossbred 480-580 kg; NZ Friesian 540 kg; mostly >600 kg.
- Check height against mature cows.
- Mature cows need to be in right condition when you are using them to set targets.
- If mature cow liveweight 500kg, heifer, BCS 4.5 will be $90\% \times 500 \text{ kg} = 450\text{kg}$
450kg in milk, BCS 4.5 means $450 + 1\text{CS} (31\text{kg})$, + calf (25kg), + uterus (20kg). At calving in July = 526kg.

US research

- 93% mature liveweight 60 days precalving.
- 85% mature liveweight at lowest BCS in milk peak production.

Costs the same to get heifers calved and into lactation whether fully grown or not.

Pfizer research found:

- 20% replacement calves don't make it to first lactation.
- \$1500 cost to get heifer successfully to first lactation.
- 60% replacements lost by fourth lactation.

Grazier must achieve target liveweight and must know what it is!

Small heifers coming home – what to do?

Small heifers – small gut and proportionately greater percentage abdominal space occupied by growing foetus.

Be proactive

Need energy dense, low volume feeds available 24/7 plus some long fibre. Need minerals for bone growth, can't do it on grass alone e.g. ad lib PKE, protein blend, grass, hay/straw. Need copper phosphate, calcium, sodium/salt.

Too much maize or grain = too fat = calving problems.

Priority is to get back in calf ASAP not production, problems and condition loss.

Post calving need:

- Minimal stress, minimal competition, good adaptation.
- Excellent transition, feeding and management.
- No disease.
- Minimal or zero condition loss post calving.
- Only milk OAD until back in calf then reassess. Should be big enough to TAD rest of the year.
- LWT based on fully grown mature cow in milk, BCS 4.5.