

STRATEGIES TO REDUCE CONCENTRATE USE IN MILK PRODUCTION

Highdown farm



- Farm acreage: 420 acres in total
- Grazing platform 300 acres
- 180 acres ploughable
- 120 acres permanent pasture
 - 70 acres stewardship (no grazing from october to April)
- 15 acres arable reversion



Ploughable

- Of the 180 acres ploughable, mostly long leys
- Grass is renewed when production falls off.
- Forage crops grown to support dairy herd.
 - Summer brassica mixture for grazing during drought followed by spring oats under sown that maybe grazed, whole cropped or combined (maybe crimped or stored dry).



Cows

- Between 150 and 180 milking cows are kept depending on TB!
- Crossbred herd mainly Friesians, Ayrshires & allsorts of crosses.
- Two thirds Spring calving Feb/April
- One third Autumn calving mid Sept – Nov
- Low input/ Low output

The System

- Strong forage based system.
- Grazed grass most important crop.
- Other crops grazed.
- Conserved forages secondary but a necessity for winter feeding.
- Milking cows out as early as possible (reliant on the spring, cows are out when the first daffodil flowers, last year 5th Feb)
 - Complete diet fed when housed (no in parlour or out of parlour feeders)

- Spring calvers kept out on grass as long as possible. Housed 27th Nov.
- Autumn calvers housed at night on calving and completely in early November.
- Buffer fed until grass growth overtakes demand.
- No buffer feeding in the summer.
- Paddock grazing with good track network.

The Rations

- From mid April until Autumn calving starts, no concentrates fed.
- All cows run as one group from the onset of Spring calving until the onset of Autumn calving.
- Maximum use of quality silage during winter housing.
- Organic Soya purchased forward in the summer (18 Tonnes total purchase).
- This is fed to Autumn calvers and rationed:
 - 6 tonnes to last from mid September to December
 - 6 tonnes December to mid February
 - 6 tonnes mid February (when the spring calvers start) to when it runs out!

- Organic grain fed alongside to a maximum of 4 kilos per day.
 - This year home produced crimped organic oats was fed.
 - Organic cereals purchased either locally from farmers or from Devon Grain.
 - No preference to type, have fed oats, barley, triticali and wheat (based on price).
 - Very little production difference from different types.

Grass Silage Analysis

| Energy | First Cut Analysis | Second Cut Analysis |
|---------|--------------------|---------------------|
| D value | 69 | 67 |
| ME | 11.0 | 10.7 |
| FME | 8.9 | 8.4 |
| NDF | 497 | 569 |
| ASH | 69 | 94 |
| OIL A | 27 | 52 |

| Intake Characteristics | First Cut Analysis | Second Cut Analysis |
|------------------------|--------------------|---------------------|
| Dry Matter (g per kg) | 437 | 258 |
| PH | 4.5 | 4.3 |
| Ammonia N | 10.7 | 11 |

| Protein | First Cut | Second Cut |
|--------------------------|------------------|-------------------|
| Crude Protein (g per kg) | 105 | 94 |
| ERDP (g per kg) | 72 | 76 |
| DUP (g per kg) | 11.2 | 8.9 |

| Fermentation | First Cut | Second Cut |
|----------------------------|------------------|-------------------|
| Sugar (g per kg) | 92 | 77 |
| Acetic Acid (g per kg) | 13.3 | 23.2 |
| Butyric (g per kg) | 2.1 | 6.6 |
| Total ferm acid (g per kg) | 75.3 | 74.9 |
| Lactic Acid (g per kg) | 59.3 | 45.0 |

Milking Cow Rations

- We always feed second cut first and therefore have the best silage for the spring calver's.
- At present the milking cows are eating:
 - 60 kilos grass silage
 - 5 kilos of crimped oats (70% dry matter)
 - 1 ½ kilos soya
 - 1 kilo moist straw

Dry Cow Rations

- Far off group
 - Rape turnip mix
 - Straw
 - Round bale silage
- Nearer calving
 - Grass silage
 - Straw
- Imminent to calving
 - ½ milking cow ration
 - Straw adlib



Costings

| | Dec-11 | Jan-12 | Feb-12 | Mar-12 | Apr-12 | May-12 | Jun-12 | Jul-12 | Aug-12 | Sep-12 | Oct-12 | Nov-12 | SUMMARY | | | | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|-----|
| STOCK | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cows in herd | 130 | 127 | 136 | 141 | 138 | 148 | 149 | 147 | 143 | 140 | 139 | 137 | 140 | | | | | | | | | | | | | |
| Cows in milk | 78 | 48 | 90 | 127 | 136 | 147 | 146 | 130 | 116 | 115 | 119 | 103 | 113 | | | | | | | | | | | | | |
| Number of cow + heifer calvings | 1 | 0 | 1 | 3 | 43 | 3 | 34 | 12 | 6 | 8 | 1 | 6 | 0 | 1 | 0 | 1 | 0 | 1 | 4 | 1 | 17 | 0 | 10 | 0 | 117 | 36 |
| MILK PRODUCTION | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total milk output (litres) | 33,548 | 28,058 | 32,414 | 63,552 | 85,858 | 80,687 | 71,708 | 58,239 | 49,871 | 46,224 | 47,834 | 45,618 | 643,611 | | | | | | | | | | | | | |
| Yield per cow in milk (litres/day) | 11.4 | 14.4 | 16.2 | 18.9 | 21.8 | 18.4 | 16.3 | 13.6 | 13.1 | 13.3 | 13.2 | 13.7 | 4,611 | | | | | | | | | | | | | |
| Yield from all forage per cow (litres/day) | 5 | 8 | 6 | 13 | 19 | 18 | 16 | 14 | 13 | 13 | 9 | 7 | 3,762 | | | | | | | | | | | | | |
| Yield from grazed forage per cow (litres/day) | 0 | 4 | 0 | 6 | 15 | 18 | 16 | 14 | 13 | 13 | 9 | 0 | 3,076 | | | | | | | | | | | | | |
| % of total yield from forage | 44% | 53% | 38% | 70% | 86% | 100% | 100% | 100% | 100% | 100% | 70% | 55% | 82% | | | | | | | | | | | | | |
| Butterfat (%) | 4.57 | 4.59 | 4.65 | 4.34 | 4.04 | 4.16 | 4.04 | 4.07 | 4.21 | 4.34 | 4.53 | 4.24 | 4.26 | | | | | | | | | | | | | |
| Protein (%) | 3.51 | 3.46 | 3.53 | 3.41 | 3.25 | 3.17 | 3.18 | 3.21 | 3.27 | 3.48 | 3.62 | 3.33 | 3.33 | | | | | | | | | | | | | |
| Hygiene : Cell count | 48 | 196 | 43 | 184 | 37 | 161 | 31 | 151 | 23 | 226 | 33 | 199 | 26 | 221 | 28 | 250 | 32 | 275 | 27 | 288 | 25 | 293 | 30 | 271 | 32 | 226 |
| Milk Price (p) | 36.03 | 37.05 | 34.77 | 33.31 | 25.94 | 26.50 | 25.87 | 32.71 | 33.10 | 33.04 | 33.30 | 33.74 | 31.12 | | | | | | | | | | | | | |
| FEED | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Concentrate use for herd (t) | 9.7 | 6.8 | 10.5 | 9.6 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.2 | 11.3 | 62 | | | | | | | | | | | | | |
| Concentrate use per cow in milk (kg/day) | 3.3 | 3.5 | 5.2 | 2.9 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 3.4 | 445 | | | | | | | | | | | | | |
| Concentrate use per litre (kg) | 0.29 | 0.24 | 0.32 | 0.15 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.25 | 0.10 | | | | | | | | | | | | | |
| Concentrate price per tonne (£) | 284 | 230 | 291 | 244 | 230 | | | | | | 354 | 349 | 289 | | | | | | | | | | | | | |
| Other purchased feed cost (£/cow) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | |
| All purchased feed cost / litre | 8.22 | 5.59 | 9.42 | 3.68 | 1.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.09 | 8.62 | 2.79 | | | | | | | | | | | | | |
| MARGINS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MOPF for herd (£) | 9,327 | 8,827 | 8,218 | 18,832 | 20,889 | 21,382 | 18,549 | 19,047 | 16,505 | 15,273 | 13,013 | 11,458 | 182,348 | | | | | | | | | | | | | |
| MOPF per cow (£) | 72 | 70 | 60 | 134 | 151 | 144 | 124 | 130 | 115 | 109 | 94 | 84 | 1,306 | | | | | | | | | | | | | |
| MOPF per litre (p) | 27.80 | 31.46 | 25.35 | 29.63 | 24.33 | 26.50 | 25.87 | 32.71 | 33.10 | 33.04 | 27.20 | 25.12 | 28.33 | | | | | | | | | | | | | |

12 Month Forage Summary

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| | | |
|------------------------------|---------|-------|
| Stocking rate for dairy herd | cows/ha | 1.45 |
| Milk from forage per hectare | litres | 5,471 |

Conclusion

- Believe in grass
- The right cow is crucial (I don't keep cows, cows keep me!)
- Concentrate part of the ration should be as concentrated as possible to stop substitution.
- Silage should be as good as possible but is always inferior to grass and a lot more expensive.
- Profit is more important than yield.

THANK YOU FOR LISTENING

