

WEIGHING THE FACTORS

DairyNZ has run various case scenarios of grazing options, with the conclusion that grazing young stock off the milking platform is the most profitable.

The decision on grazing replacement stock is complicated and hinges on a multitude of factors, however.

Before making a decision, farmers need to weigh up all the factors, from biosecurity, through to animal health, animal performance, and ultimately profitability.

With the threat of *Mycoplasma bovis*, for example, some farmers are wanting a closed system, where their stock are not exposed and therefore eliminating their risk.

When farmers decide to graze their replacement stock on the milking platform, however, they're essentially taking the grass out of a milking cow's mouth and giving it to a beef animal, DairyNZ dairy systems specialist Mark Neal says.

During a feed deficit the lactating cows will tend to get priority, which may be at the detriment of those young stock grazing at home.

"The driver is to produce milk, so farmers tend to prioritise cows in a drought."

On the flip side, if graziers suffer a feed deficit, farmers can become concerned with how their young stock are being looked after, and the impact on their growth.

There are benefits to having young stock on the milking platform. For example, having yearlings on the farm makes it easier to synchronise them to mate them through an artificial mating programme.

Milking fewer cows on the milking platform



Mark Neal: The driver is to produce milk.

will equate to less milk production and ultimately less shares will be required, so farmers could sell some shares. However, with selling those shares, farmers then miss out on the dividend.

Ultimately farmers need to weigh up every consideration and do a proper financial and feed budget to make their decision.

REPLACEMENT STOCK

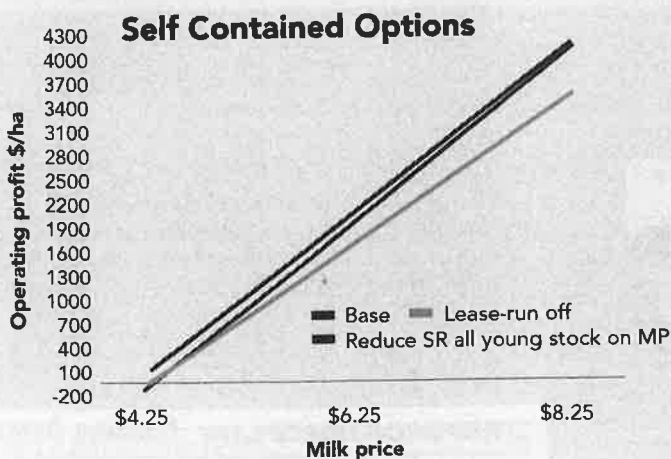
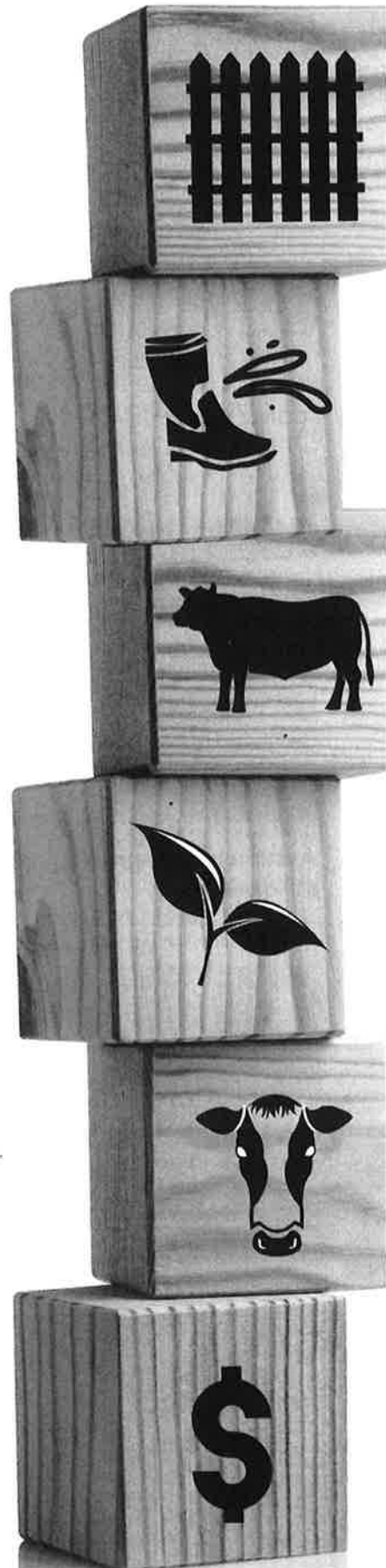
- Study by: Tai Chikazhe, Mark Neal and Paul Bird, DairyNZ

BASE SCENARIO

- 80ha effective, Stocking rate 2.9 cows/ha (232 cows)
- All young stock reared off farm from Dec 1
- Cows wintered on the milking platform
- 5% of platform in maize crop
 - Production 1068kg MS/ha, potential pasture growth 14.6tDM/ha

OPTION 1: Lease support block

- 23ha leased for rearing young stock @ \$800/ha/year
- Potential pasture production 10t DM/ha
- Cows wintered on the milking platform
- Maize now grown on support block
- Imported palm kernel reduced and pasture conserved increased



- Stocking rate on the milking platform remains the same as in the base file.
- Production same as base, 1,068kgMS/ha
- Budgeted on one hour/day spent on the run-off @ \$25/hour. This will involve shifting young stock, break fencing, repairing fences, water reticulation, animal health, mating, managing feed, fertiliser application. Hours involved (travelling) could be more depending on the run-off location. Time is often under estimated.

OPTION 2: Reduced stocking rate, all young stock reared on milking platform

- All young stock reared on the milking platform.
- Cows wintered on the milking platform
- Stocking rate reduced from 2.9 to 2.4 cows/ha to accommodate young stock reared on platform (197 cows, down 40 cows, -14%).
- Maintained the same percentage replacement rate.
- 5% of platform in maize crop, Potential pasture growth the same, 14.6tDM/ha.
- Production 899kgMS/ha

CONCLUSION: There is a loss of \$34,743 (\$434/ha) by grazing all replacement heifers on the milking area compared to grazing off the milking area, based on a \$6.25 milk price and \$7.50/head/

Modelling results: Operating Profit and Milk price

Operating Profit per ha [difference from base]			
Milk price	Base (Graze off)	Lease support block	Reduce SR, all young stock on
\$4.25	128	-76 [-204]	-29 [-157]
\$6.25	2,203	2,058 [-145]	1,769 [-434]
\$8.25	4,226	4,192 [-34]	3,566 [-660]

Assumed that grazing rates are adjusted with milk price

Grazing cost, \$ per head per month			
Milk price	0-9 months	10-21 months	22 months +
\$4.25	6.50	9.50	22.00
\$6.25	7.50	10.50	25.00
\$8.25	9.50	12.50	28.00

week for R1 heifers and \$10.50/head/week for R2s. This analysis is very sensitive to milk price and grazing rates. At a \$4.25 milk price there is a reduced profit of approximately \$14,160 (\$177/ha) from grazing heifers on the milking platform. There are also a large number of other considerations that need to be thoroughly taken into account particularly around long-term grazing plans, management complexity and risk.

OTHER THINGS TO CONSIDER: Economics sensitive to payout, though even at \$4.25, grazing off is ahead financially.

- Potentially less disease due to closed herd.
- More control over replacements, though need skill to be able to manage extra classes of stock.
- Increased grazing plan complexity on the dairy unit however in some cases it may be easier to 'clean up' the odd paddock that is not grazed out properly.
- Less grazing pressure in spring – need to conserve more?
- Labour: Less milking time but more classes of stock to manage.
- Increased genetic gain if heifers go to AB.
- Not exposed to fluctuation in grazing costs.
- Reduced impact on winter cashflow with heifers on the milking area.
- Animal health and breeding costs – could be more or less depending on the arrangement with grazier.
- Asset base reduced with lower stock numbers – would have large impact on 50% sharemilkers.
- Potential impact on farm value ie: lower MS production.
- May impact relationship with grazier if required in the future.
- Grazier carries risk if drought – still has to feed stock although in practice this does not always occur.
- Ability to utilise non-dairy platform land.
- Potentially higher staff satisfaction given another class of stock to manage - more interesting?
- Hard to reverse if you don't keep enough replacements, and don't want to buy stock.

STOCK ON DAIRY FARM OR AT A RUNOFF

How will the change in milk production effect capacity adjustment?

How much will stock sales change? This may be higher in the first season but lower in following seasons.

Will lower cow costs, grazing costs and/or stock cartage offset the lower milk income?

Does the dairy farm have the facilities necessary for drenching, weighing and vaccinating young stock?

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PARTIAL BUDGET

Farm business name	Example Farm Limited
Partial budget description	Base: Graze R1yr & R2yr off vs Graze R1yr & R2yr heifers on the milking platform with reduced Stocking Rate (Alternative 2)
Status quo situation	80 hectare, 232 cow dairy farm, grazes 'off' all replacement stock - 51 R1 yr heifers and 51 R2 yr heifers from 5 months of age to 22 months of age. Pasture eaten/ha = 13.4 tonnes DM/ha (232 cows x 4,800 kgDM/cow / 80ha = 13.9 tDM/ha)
Proposed change to status quo	Graze all replacement stock on the milking platform. Reduce cow numbers to 197 and graze 43 R 1yr and 43 R2 yr heifers on the effective milking area. This will maintain the same pasture demand as the status quo situation at about 13.8 tDM/ha.
Other assumptions	368 kgMS/cow, 450kg cross bred cows eat 4.8 tonnesDM/yr, R1yr heifers eat 960 kgDM from 3 to 10 months and R2 heifer eat 2,630 kgDM from 11-22months (total of 3,585 kgDM from 3 to 22 months). Small reduction in MS/cow (3kgMS /cow) and increased silage made.

Losses

Decreased revenue from proposed change	area or number	yield or units	\$/unit	unit	Total	Per ha
Reduced milk income	35	368	\$ 6.25	kgMS	\$ 80,500	\$ 1,006
Fewer cull cows -20% culls x 35 cows	7	1	\$ 500.00	cow	\$ 3,500	\$ 44
Fewer calf sales	35	1	\$ 50.00	calf	\$ 1,750	\$ 22
Less dividend from Fonterra (after sale of shares)	12,880	1	\$ 0.25	share	\$ 3,220	\$ 40
Lower production per cow	197	3	\$ 6.25	kgms	\$ 3,694	\$ 46
Sub-total decreased revenue (C)					\$ 92,664	\$ 1,158

Increased costs from proposed change	area or number	yield or units	\$/unit	unit	Total	Per ha
Labour (increased labour less reduced milking time)	0.50	365	\$ 25.00	hours / day	\$ 4,563	\$ 57
Additional Pasture Conservation	1	25	\$ 140.00	per tDM	\$ 3,500	\$ 44
Sub-total Increased Costs (D)					\$ 8,063	\$ 101
Total Losses (C + D = F)					\$ 100,726	\$ 1,259

Gains

Decreased costs from proposed change	area or number	yield or units	\$/unit	unit	Total	Per ha
Less R 1 hfr grazing (heifers x weeks x \$/week)	51	22	\$ 7.50	week	\$ 8,422	\$ 105
Less R 2 hfr grazing (up to winter)	51	52	\$ 10.50	week	\$ 27,868	\$ 348
Less R 2 hfr grazing (in winter)	51	9	\$ 25.00	cow	\$ 11,484	\$ 144
Animal health & breeding	35	1	\$ 150.00	cow	\$ 5,250	\$ 66
Farm dairy + electricity - say \$75/cow	35	1	\$ 75.00	cow	\$ 2,625	\$ 33
Freight Calves (60km Journey - one way)	51	1	\$ 15.00	calf	\$ 766	\$ 10
Freight R 2 hfrs (60 km Journey - one way)	51	1	\$ 35.00	hfr	\$ 1,786	\$ 22
Interest savings - sell Fonterra shares	12,880	\$ 5.00	5.0%	%	\$ 3,220	\$ 40
Sell surplus replacements R1+R2 (not in Farmax)	8	\$ 1,000	5.0%	%	\$ 385	\$ 5
Interest savings (sell cows & reduce debt) 35 cows @ \$1800 (not in Farmax)	35	\$ 1,800	5.0%	%	\$ 3,150	\$ 39
Sub-total Decreased Costs (B)					\$ 64,955	\$ 812
Total Gains (A + B = E)					\$ 64,955	\$ 812
NET GAIN or LOSS (E - F)	Per ha				-\$35,771	-\$447

Will the dairy farm's fencing be able to contain calves?

How will keeping heifers on farm effect seasonal feed budgeting? Young stock feed demand is constantly increasing to reach liveweight targets compared to dairy cows which peaks in the spring and then flattens off and declines through the autumn.

How will the labour requirements change by carrying multiple stock classes on farm? Milking another row of cows might add 10 minutes to every milking where drenching and vaccinating heifers requires different stock handling skills and is another job on farm.

Do milking cows get their minerals, rumensin, bloat oil, zinc through stock water? Is this suitable for young stock?

If you currently work with a good grazier, how easy will it be to find someone that has a similar standard in the future if you decide to go back? Finding a grazier who can take your stock numbers and is good to work with is not always easy.

TOOLS TO USE TO CALCULATE GRAZING OPTIONS ON SUPPORT BLOCKS

There are four ways to analyse the economics of heifer grazing.

- Gross margin comparison to other enterprises that could be run on the land.
- The revenue foregone by keeping dairy heifers on the milking platform and reducing milk production.
- Cost to lifetime productivity if heifers miss liveweight targets.
- Feed requirements and seasonal feed value.