

Make informed decisions to improve profitability

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I was over in England recently, as I have been working with EBLEX for three years on a research project that involves running Farmax (a decision support tool for pasture-based systems available in NZ since the 1990s). While there, I was involved in two on-farm events where we used Farmax to run scenarios to see the financial impact of decisions.

For one of the meetings, we based the FARMAX model farm on a sheep farm running 1,600 ewes on around 240ha (a mixture of leys, improved permanent pasture and HLS land). The farm currently rears 1.6 lambs per ewe tupped, and sells at 18kg carcass weight.

The farmer had a target in mind of running 2000 ewes rearing 1.7 lambs at similar carcass weights.



Different courses of action

We decided to test four options to achieve the potential target:

- Pasture improvement
- Increased nitrogen applications
- Soil fertility improvement
- Topping ewes at heavier weights.

The options were investigated separately, and the results can be seen in the table below.

	Current Plan	Pasture improvement	Increased nitrogen use	Increased soil fertility	Heavier Ewes
Ewe Number	1600	1718	1703	1711	1560
Weaning %	160%	160%	160%	160%	170%
Lamb Sale Weight	18kg	18kg	18kg	18kg	18kg
Total Gross Margin (£)	80,600	86,300	81,600	80,900	88,200
Total Feed eaten (t DM/ha)	7.3	8.0	7.8	8.2	7.3
Gross Margin pence/kg DM	5.8	5.6	5.5	5.4	6.3



Expert View

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For pasture improvement (with break crops and re-seeding), the total feed produced on the farm increased. To utilise the extra feed ewe numbers were increased and maintained the same performance. This option showed a higher gross margin due to more lambs sold. However, the gross margin per kg DM consumed was lower due to reseeded costs.

Increasing the amount of nitrogen used and increased soil fertility also increased the total feed produced on the farm (utilised by increased ewe numbers). However, their gross margin was similar to the current plan, showing these options were barely worth doing.

The most effective option was putting weight on the ewes, so they moved from 61kg at tupping to 64kg (achieved by rotational grazing). This option produced more lambs (170%).

To feed the extra lambs ewe numbers were reduced. Overall, both the total and pence/kg DM gross margin increased, showing that putting weight on ewes should be the first option for the farm to focus on.

At home, we regularly use the key performance indicator (KPI) of gross margin per kg DM consumed, to compare between enterprises on the farm. This tells us the relative profit of each class of stock. We use Farmax to investigate separate options to see if they increase the gross margin before trying to combine the best options.

When we combined the most cost effective options for the UK, ie heavier ewes and pasture improvement, the outcome was 1,722 ewes, weaning 1.7 lambs per ewe tupped, selling all lambs at 18kg DW. This led to a gross margin of £96,400, or an increase of £15,800.

This simple exercise shows the power of using a tool to investigate ideas and options.

EBLEX is planning to use FARMAX in the future to generate 'What If' scenarios for some representative farms based on Stocktake data.