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Computer use on my farm

P.R. HARRIS

'The Druids', Waiau, North Canterbury, New Zealand.

INTRODUCTION

This paper outlines the way computers are used on our farm. Our farm, 'The Druids', is not a stud farm, it is just an ordinary average commercial farm of 280 hectares, carrying 2300 ewes, 600 replacement hoggets and grazing as many lambs as possible through to heavier weights to sell on winter contract. We also have about 300 goats for fibre production. The annual rainfall is 750 to 875mm, with the typical Canterbury dry land pasture growth curve which varies markedly in both the total dry matter produced and its seasonality, depending on the year.

I have had no formal computer training and know little about programming but I do realise that there are ways of using computers to make things I do on the farm easier.

PROGRAMMES USED

For farm use 2 programmes only are regularly used. These are:

- A general ledger for accounting and,
 - A spreadsheet (Lotus) for budgeting and other applications.
- The main reason I use Lotus is that when our first computer was purchased some years ago, there were many little commercial programmes for all sorts of things, even adding two numbers together, which were available at exorbitant prices. I found after using Lotus for a while, that I could construct models for my own specific problems, giving me the advantage of having exactly what I want and not what somebody thinks I want.

The specific uses for our computer are:

1. Hogget selection.

To assist selection of our hoggets I record, fleece weight, body weight, fleece type and type of sheep.

For the selection model I list the above characteristics for each sheep, with an extra column in which I place the importance or weighting for that character. The measured or scored value for each characteristic is multiplied by its weighting factor which is then added to give a total for each sheep. A sort routine ranks the animals and this list is used for culling.

2. Goat selection.

When goat fibre was worth something we found the monetary value per head per shearing varied widely from \$25 to 50 cents. This variation in financial return made it worthwhile to record the type of fibre, the weight shorn and the price received. By multiplying these together gave us the value of fibre / shearing / head. This figure was used to do our culling.

3. A production performance model

This model is designed to help us compare ourselves with other farmers and also, one year with another. In order to do this I set up a framework in which data such as; lamb drafts, cull ewe sales, wool sales and stock carried etc. can be entered. For example, data entered for each lamb draft includes numbers sold,

carcass weight, wool pull and price received. The weight of meat and wool are collected in a cell where they can be divided by the area of the farm or number of stock units etc to give such things as :

- stocking rate,
- kg lamb meat / hectare,
- kg lamb / sheep S.U.,
- total meat / hectare,
- kg wool / hectare, etc.

4. Feed budgeting

Feed budgeting is quite complex and initially, it was difficult to decide exactly which direction to take. I started off with a feed supply and demand curve and then looked at the factors affecting each curve.

On the supply side I incorporated the making and feeding out of supplementary feeds. To do this the farm was divided into light and heavy land, pasture, lucerne and green feed. This allowed me to give different growth rates for these different areas. Another factor that has a big effect on feeding is the level of pasture utilization, so an allowance is made for a different value for each month and this is used to adjust the amount of feed available. More accuracy in predicting feed supply/demand balances, which is probably the main reason for doing a feed budget, could be achieved if soil temp, rainfall and wind data was available and easily incorporated into the model.

On the feed demand side an allowance is made for changes in stocking rate, differences in lambing date, sale dates, and feeding rates for different classes of stock. To do this I set up data entry cells that are easy to follow and transfer the required data through to the feed demand profile. The value of the model is the way I can change input data and see their effect on supply and demand.

IMPACT ON FARM MANAGEMENT

The use of the computer has had a significant effect on running our farm.

The uncertainty has been removed from our hogget selection and I have confidence in knowing that everything I cull increases sheep profitability by increasing wool weight and lambing percentage. There is still much room for improvement because the first time I weighed our hoggets they varied from 23 to 44 kg in liveweight and 1.3 to 4.2 kg in fleece weight.

The emphasis on goat culling and selection is not as important as it was simply because of the current low values. The return in \$ / head / shearing varies considerably more than in our sheep and, with does living longer than ewes, it was/is possible to make large increases in profitability very quickly.

The Production Performance model allows early identification of a drop in our wool income / sheep stock unit (or other criteria) and we can ask appropriate questions about the cause such as, are we producing less, is our wool getting stronger or finer or has it just been a good year? Using between year comparisons we can see the effect different management decisions have had on

our production. I also think it is important to know at what level we are producing in comparison to other farmers.

As far as feed budgeting is concerned I use it to evaluate stocking policies. For example, to carry lambs through the winter on our dryland farm, means that we have to make the decision to do so before we have the feed supply available. This is because these winter contracts are usually signed in Feb or March which is often before the autumn rains. This puts us in a high risk situation in a potential late summer - early, autumn drought because as lamb prices fall the temptation is to hold onto lambs for a longer time because we have budgeted for higher prices. As this happens feed planning becomes increasingly difficult. Using the computer gives me the ability to evaluate the costs against the potential losses in production in the following year.

I believe there is as much money to be made as there is to be lost in choosing stock policies. The use of our computerised feed budget allows us to get a reasonable look at the "what, if" scenario and, on the other hand, if you just want to sell stock the optimum time to do so can quickly be identified.

CONCLUSIONS

All these models, (and other ones), I have been able to set up myself. They are what I want, I know how they work and I know how to change them. Also, I find I do a lot more recording and budgeting than I would, if I did not have a computer. This means that in the long run, better decisions are made and I will be financially better off for having a computer.