Farm computer software – deer, production and profitability
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Abstract

Farmers are using a range of software to aid day to day management of their properties and to provide an analysis of policy changes that could increase productivity and profitability.

There is a subtle change in direction away from benchmarking to feed planning and decision support systems. A lot of information is entered into the computer and a good deal of it is never seen again. Ideally the data input is directly related to the key reports needed to help make production decisions that will affect the bottom line.

A breakdown of the types of software available puts them into 5 groups:

- *Weight recording*
- *Farm maps, diaries, feed budgeting*
- *Performance recording*
- *Decision support systems*
- *Performance management groups*

Veterinarians can use these programs to support diagnosis of animal health and production problems and as an aid to work with farmers on their production results using decision support software directly or through a performance monitoring group.

Why should veterinarians be interested in the software?

1. Advice to clients

The unfortunate situation with software use is that rarely does one package provide for all the needs of the user. A farmer may be considering availability of deer/production programs and be looking for some direction re purchase.

List their needs: what information do they need out and taking it back a step further, what reports are they requiring as their key indices to enable them to manage productivity on the farm. A lot of data is entered into the computer never to be seen again or the report printed and filed with no further use.

Prioritise their needs: what is needed the most and what would be useful but not absolutely necessary.

Consider the software options and link with the farmer.

Finally, assess the level of support for the software package that the farmer needs.

2. Awareness of high technology used on farm

Commercial farmers are using a considerable amount of high technology on farms. Software is a small component.

3. An aid to diagnosis of animal health or production problems

4. Involvement with decision support systems (DSS).

Software availability

A brief discussion of the more commonly available software follows. There are other options available eg accountants with financial software for client use, software developed specifically for a farmer, excel, access.

1. Weight Recording

Winweigh (Tru-Test), Winfx (Allflex). These programs download data from scales and will rank according to weights, calculate growth rates, note condition scores and are able to export the data to other packages.

2. Farm maps, diaries, feed budgets

A lot of farmers now have their farms mapped on the computer combined with event records. These programs will record all details regarding farm paddocks including fence lines, irrigation lines, areas, etc. Paddock information can be recorded such as fertiliser applications, cultivation, pasture seed mixes, dry matter levels and stock movement. The stock information can be input as a mob or as individual animals. Daily climatic information can also be recorded.

Feed planning encompasses budget dates and covers required, paddocks and pasture growth, stock mobs and targets and supplement feeding. All the information is pulled together to provide feed budgets over any timeframe specified. Information can be downloaded directly from weighing scales, pasture probes or any .csv file.

Quality assurance requirements become easy to comply with as all information can be readily retrieved. Within the next two years we will be seeing animal tags that can be scanned via remote control (1.2 metres), entered directly onto software, combined with inputs that the animals have received and e-mailed to the relevant meat processor. This will provide the traceability of product that the markets are starting to demand.

The farm maps can originate from a scanned aerial photo or using GPS points.

Endeavour, Intelligent Diary, All About Grass

These are developed by Agresearch and supported by computer concepts in Masterton. Endeavour is the farm mapping and is able to extend its application in links with decision support software. Intelligent Diary is a new product about to be released that will work as a farmer's notebook to record events and dates. All About Grass is a feed planning tool.
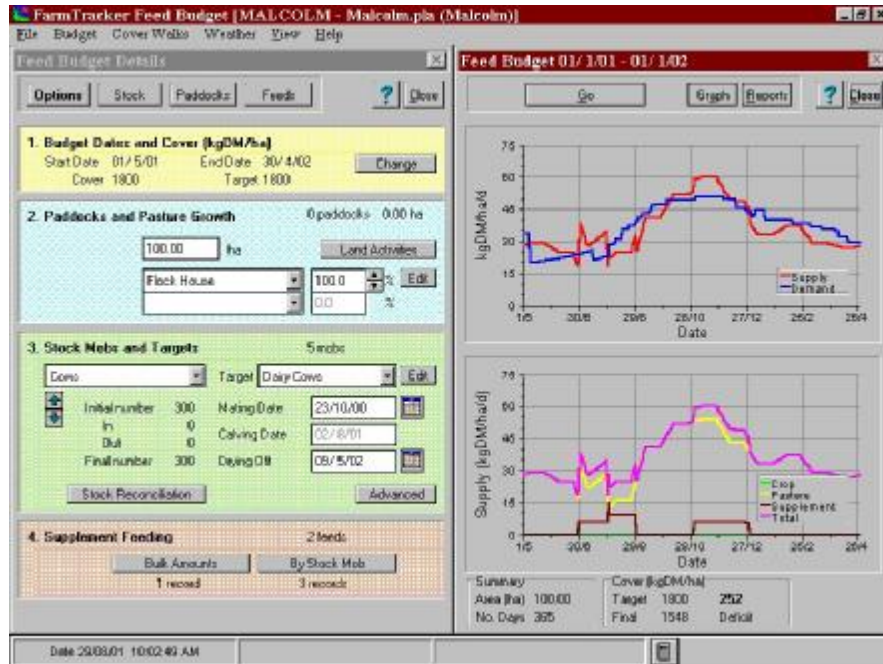
Farmtracker

Farmtracker is a New Zealand program and supported by Farmworks in Palmerston North. The strength of this program is its feed budgeting. The modules include mapping, climate, feed budgeting, stock movements and farm events. There is an ability to purchase some or all of the modules. It has also had a recent significant upgrade.

Two examples of the program follow. The first is an example of the detail of recording possible. Not all information need be entered. It is important to enter only data of use in a report that will add value to farm production decisions.

The second figure is a snapshot of a feed budgeting work-up.

3. Performance recording

This involves recording and analysing information about the deer. Individual data is entered and then used to rank the animals on any measurable trait. For example, what is the average 11-month weight for progeny from, say, Sire MR 125/96? Custom made reports could include sale catalogues, pedigrees and dam summaries. Data can be exported to provide estimated breeding values. They are also able to import or export to a number of other programs eg weights recorded on Trutest scales.

By the use of EBV and to a lesser degree the rankings, the genetic gain could be increased by up to 3% per year. Sheep Improvement Ltd show possible gain in Figure 1. Over a six-year period the Kg liveweight in hoggets has increased by 4 kg across the flock average.

Figure 1.
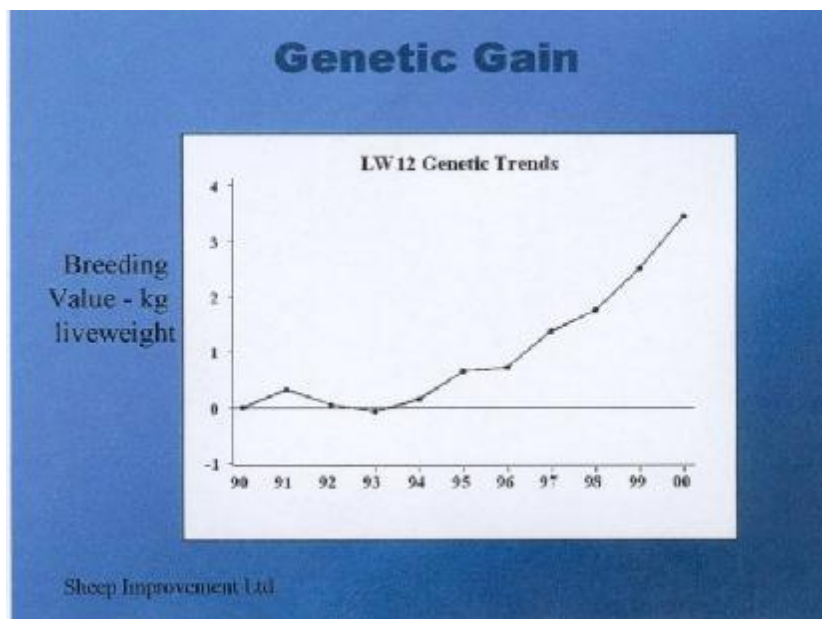
(a) **Deer Magic**

Deer Magic was developed in Saltbush, Australia for cattle breeders and is used internationally. There are approximately 10 users in New Zealand that tend to be mainly the larger studs. It has a comprehensive reporting format and high data flexibility. A new release is due with several tiers to cater for different abilities of the users.

(b) **Studfax**

Studfax has been designed by New Zealand deer breeders and is production orientated. It is flexible and customisable. Eg. A recent addition has been the linking of foetal age at scanning time to the birth date of the fawn once the dam/offspring matching has been noted in the computer. It has strong import/export features. At least 22 farmers are now using this product and this will lead to an increase in a more objective performance ranking of animals. The limiting factor is the accuracy, ease and cost of obtaining a dam/offspring matching.

Below are examples of the primary screen and some reports.
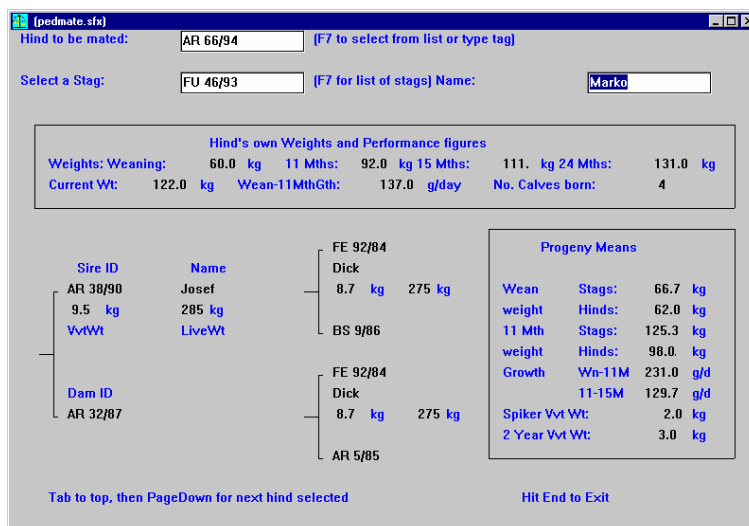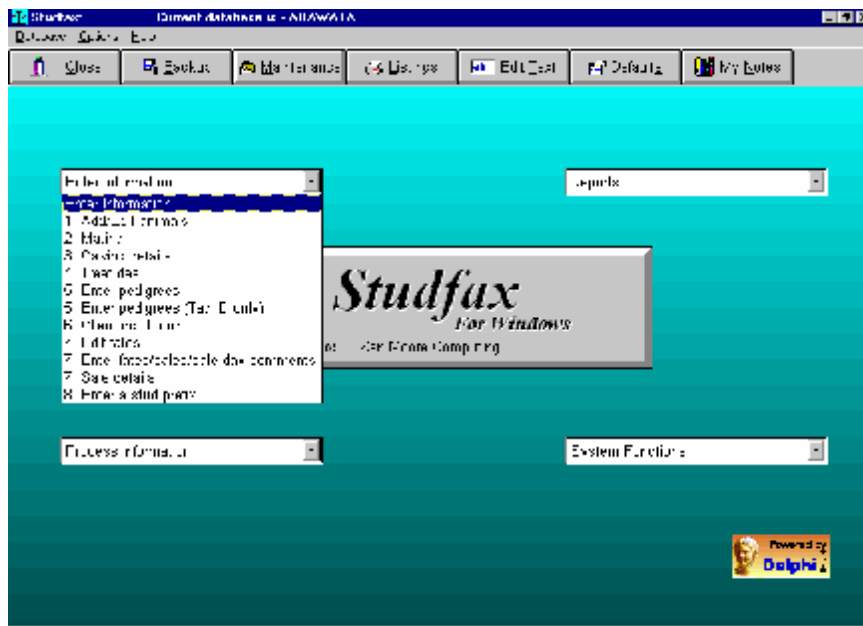
```
Text Editor - e:\estudwin\arawata\viewlist.lst
 File  Edit  Search
                    Weaning weights

Weaning Weight mean:  58.4 kg
========================================
         Tag        Plastic Tag    Sex    Wean Wt

      AR 113/99                    Stag    77.0
      AR 54/99                     Stag    76.0
      AR 55/99                     Stag    75.0
      AR 111/99                    Stag    74.0
      AR 382/99                    Stag    73.0
      AR 37/99                     Stag    73.0
      AR 182/99                    Stag    72.0
      AR 92/99                     Stag    72.0
      AR 100/99                    Hind    72.0
      AR 33/99                     Stag    71.0
      AR 102/99                    Hind    70.0
      AR 210/99                    Stag    69.0
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Text Editor - e:\estudwin\arawata\viewlist.lst                              _ □ ×
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         Current Hinds Summary ranked on progeny growth rates

                           Averages over all progeny
    Tag          No    WnWt   WnWt    11MthWt  11MthWt   Wn11Growth   Spiker   2Yr Vvt
                Prog   Hind   Stag    Hind     Stag      Rate (All)   Vvt Wt   Weight

  AR 66/94       5    62.0   64.3    98.0     125.3     173.0        2.0      3.0
  AR 230/96      2    48.0   55.0    89.0     105.0     172.6
  AR 2/96        2           59.0             104.0     171.8                 2.0
  AR 3/96        2    54.0   62.0    93.0     113.0     170.9
  AR 200/95      3    52.5   52.0    91.0     109.0     170.8
  AR 102/92      6    63.0   63.0    98.0     111.0     170.8                 2.2
  AR 217/94      4    46.0   50.0    75.0      98.7     170.7        3.0      3.2
  AR 155/96      2    60.0   50.0    99.0      99.0     170.6                 2.3

 Line : 8      Col : 2              ✓  OK        ✗ Cancel
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Text Editor - e:\estudwin\arawata\viewlist.lst                              _ □ ×
 File  Edit  Search

               Progeny Summary for Stag WP 100/93   The Sultan

Tag         Dam         Wean    11      15      24     2YrVvt    Fate
                        Wght    Devn growth in g/day   Weight

AR 204/99   AR 5/91     60.0     9.9
AR 207/99   AR 106/92   67.0     7.3
AR 211/99   AR 1/94     50.0    -4.5
AR 203/99   AR 66/94    62.0     9.9
AR 210/99   AR 1/93     69.0   -52.0
AR 213/99   AR 3/91     59.0    17.8
AR 208/99   AR 100/94   68.0   -16.4

                        Progeny Means
Stags
 Wean Wt:61.6kg   11Mth Wt:106.6 kg     15Mth Wt:      kg    24Mth Wt:
 Growth Rates  Wean-11Mth: 177.9 g/d  11-15 Mth:      g/d  15-24Mth:
 Growth Rate Devs Wn11Mth: -12.4 g/d  11-15 Mth:      g/d  15-24Mth:

Hinds
 Wean Wt:59.7kg   11Mth Wt: 95.3 kg     15Mth Wt:      kg    24Mth Wt:
 Growth Rates  Wean-11Mth: 141.0 g/d  11-15 Mth:      g/d  15-24Mth:
 Growth Rate Devs Wn11Mth:   8.6 g/d  11-15 Mth:      g/d  15-24Mth:
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4.   Decision Support Systems

These systems take farmer production information and use it to predict pasture/animal responses to different policies. It includes consideration of stocking policies, feed requirement evaluations and budgeting, development of stock sale strategies and the financial applications. They are an aid for farmers in making management decisions and/or give confidence to make significant policy changes with supporting financial information. They can be short-term ie annual or long-term from 10 years plus. The important thing to remember is that the DSS are to be used as a tool. There is always a need for a critical analysis of the final scenarios presented by the DSS.

Rangepak is a specialised package developed in Australia and converted to New Zealand situation. Its strength is its farm financial analysis. It uses Stockpol figures and will provide monthly budgets.

Stockpol. This is developed by Agresearch and involves farmers, consultants, farm monitor groups and veterinarians. It aids macro decisions on the farm and has recently had a major upgrade that is currently under trial (see reference to Farmax later in this paper). Examples of the detail in the program follow. The first figure shows the main screen giving the available cover compared to the required cover. The detail is entered via the fields provided in stock, land, supplements and constants.

The above drafting screen is particularly useful to work through stock sell strategies varying schedule prices and weights of animal. Once the farm has a feasible cover and all detail is entered the function 'modify' can be used to investigate possible scenarios to increase production and financial returns. This could include variations on pasture growth, feed conservation, supplements used, addition of nitrogen, stock performance or alteration of the numbers of stock. The reports give an indication of direction that can then be further critically analysed as to viability.
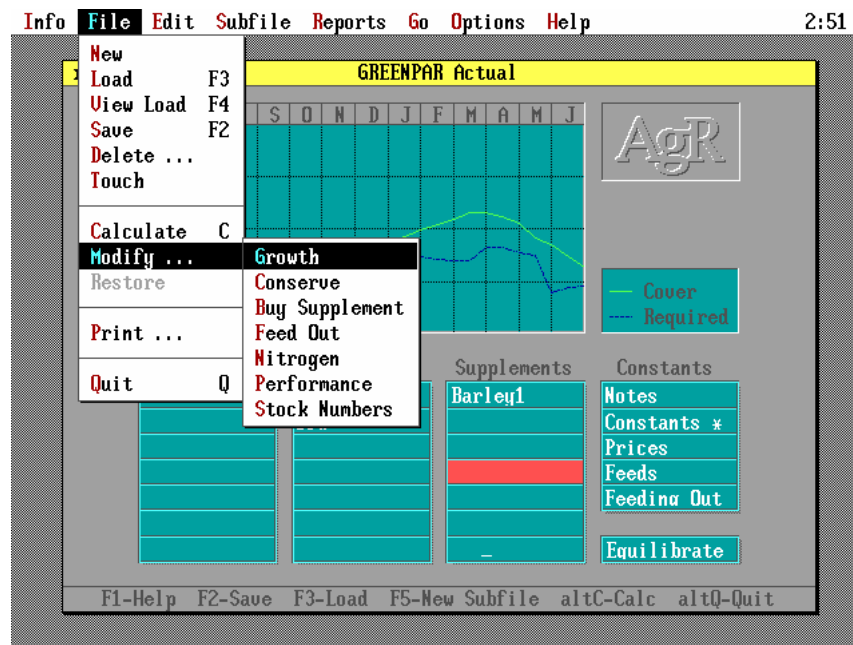
Performance Management Groups

These groups involve farmers providing data and the groups analysing the data at a central bureau to either benchmark, feedplan or provide financial comparisons between different stocking policies, feed options etc.

There may be smaller groups in the various regions but there are 2 groups looking to provide services nationally over coming months.

Farmax

This is a new service offered by Agresearch through agricultural consultants that is currently under trial. It is based on an upgrade of Stockpol and involves a team approach. Stockpol has been divided into 2 products called FarmTools and FarmTools Pro.

The focus is efficient conversion of pasture into farm products through feed planning. The farmer can look at various options and evaluate the profitability of them.

Farmers send monthly farm data to a centralised Bureau using FarmTools. The Bureau forwards the file to the consultant for revision. The consultant is able to use FamTools Pro to model various scenarios and then the revised plans are evaluated with the farmer.

The initial services include feed planning and financial comparisons of scenarios. Farmax also intends to develop an accounts analysis system incorporating annual accounts and then combining this with feed planning.

Deer South

Reproductive, velvet and weight data is recorded by the farmer and sent in a formal format to be centrally recorded. The information is standardised to allow comparisons. For example weighing

dates are 1 March (weaning), 1 June, 1 September, 1 December and 1 February. There are currently about 40 farmers involved with 3 inputs and reports annually.

Field days are an integral part of the scheme and complement the reports to enable a transfer of information. Farmers can use this to improve their own farm production from the previous year. Each individual is also given a production ranking for their type of deer within the group. The benefit for the farmer is a relatively low labour input for them to receive valuable feedback on where they can focus for improvements and financial gain. It also provides a database to use for investigations if a problem arises.

Deer South is being developed to a national scheme. The proposal is for Deer South to encompass 3 tiers with the current scheme being the middle option. There is an opportunity for veterinarians to be involved and work with farmers in benchmarking and converting grass to meat and $.

Conclusion

Farm software is to be used as a tool to increase productivity and financial returns

No software programme covers all requirements. It is important to prioritise the clients' needs.

Software can be a useful aid to animal health and production problems.

There is a significant opportunity for veterinarians to be involved either with performance recording programmes, farm analysis programmes or with performance groups.

There is an emphasis shift to feed utilisation and efficiencies from bench marking as farmers increase their production on farm.

Future improvements that will increase farm productivity in using the various software programmes include:

1. Standardising of information for accurate benchmarking
2. Dam/offspring matching using DNA testing or other methods
3. Increased use of Estimated Breeding Values

Acknowledgements

Contacts for clients on suitable software

Decision Support Systems Booklet
AgriQual

Endeaviour, Cashmanager, Intelligent Diary, All About Grass
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