

# DEERPLAN

by Peter Fennessy, Invermay Research Centre, Mosgiel

THE NATIONAL Deer Recording Scheme or Deerplan, as it is often called, has been set up by the New Zealand Deer Farmers Association to make a positive contribution to the genetic improvement of deer herds. It is not a devilish plan designed in some scientist's cloistered office. Rather, it is a scheme to enable practical deer farmers to improve their herds by selecting the more efficient animals based on easily recorded measurements.

The scheme is run through Beefplan, with the group responsible for it including members of the NZDFA council, deer farmers, a farm adviser and Beefplan representatives.

Deerplan is going to take time to develop and will be introduced in three stages:

- Recording
- Ranking
- Breeding scheme.

## Recording

Currently we are at this first stage which simply involves setting up the basis of the scheme by collecting basic data. At the moment, only breeding hinds are being recorded. Their offspring will enter the scheme as they come of age.

The information required is described in the panel on this page.

At this recording stage, the farmer will simply send in the data and have a computer printout of the same data returned. However, this information is absolutely essential to the development of the scheme.

## Ranking

When we have sufficient basic information from the recording scheme (after two or three years) it will be analysed to estimate any adjustments that need to be made. These may be due to the sex of the calf, the age of its mother, the influence of its date of birth, etc. By using these adjustments on the farmer's records, animals will be given

a ranking as to their position within the herd.

These rankings will be very useful and will enable a breeder to identify the top hinds and to compare the various stags he has used.

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## INFORMATION REQUIRED

### Calf

Pedigree (sire and dam)  
 Birth date  
 Weaning or March weight  
 15-month weight

### Hind

Stag to whom mated (this gives the pedigree of the offspring)  
 Annual liveweight during autumn or winter

### Stag

2-year old casting and velvet harvest dates  
 Antler weight and characteristics  
 Annual liveweight, probably either pre-rut or mid winter

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## Breeding scheme

This stage will require a vast amount of data, as it involves the calculation of important genetic parameters such as the heritability of weaning weight and 15-month weight. The genetic relationships between various characters such as weaning weight and velvet weight will also be calculated.

This could mean that the breeder will be able to identify those hinds which

will be likely to leave good velvetting stags.

Once this stage is reached, Deerplan will give the farmer estimates of the breeding values of the animals in the herd (Sheeplan currently provides breeding values). These breeding values will give the breeder an estimate of the likely superiority of the offspring of a particular hind or stag compared with the average.

## The information

**Pedigree:** The first requirement is that the parents of the calf be known. This means single-sire mating and hind-offspring pairing are absolutely vital.

**Birth date:** This is important because a calf born earlier in the season will tend to be heavier at weaning simply because it has had more time to grow. Although we would expect early calves to be much heavier, we have no idea just how important birth date actually is.

Certainly, calves born in January are lighter than calves born in November when weighed at weaning, but it may be that a one or two week difference has little effect. Therefore, the information is required in order to find out just how important birth date is and to work out any appropriate adjustments needed.

**Weaning weight:** This is required to assess the mothering ability of the hind. If calves are to be weaned post-rut, then this weight should be taken in March and not at weaning. A post-rut weaning weight can be heavily influenced by the sire of the calf and hide information about the hind's value as a mother.

**15-month weight:** This is very important. This is the age when hinds first go to the stag, so it is a good time to select replacements. With stags it is the first real opportunity to look out for potential sire stags.

We know that 15-month weight is a ▶

▷ good indicator of ultimate body size. However, selecting only on 15-month weight would mean producing bigger and bigger animals until we all ended up with Red deer looking like Wapiti. If a breeder really wants Wapiti-sized deer, then the easiest thing to do is start with Wapiti now.

However, the real objective of the whole scheme is to select the more efficient animals (See TDF, No. 23,

page 30). Big is not necessarily better and the annual hind weight is intended to be used as a base to compare the progeny of different hinds.

**The annual hind weight:** This is recorded sometime during the autumn or winter and is intended to give an estimate of the mature weight of each hind. Relating the weight of a hind's offspring to her own weight will give some idea of efficiency.

For example, suppose there are two daughters of the one sire, each from a different hind. If one reaches 90 per cent of its mother's weight at 15 months and the other only reaches 70 per cent of its mother's weight at the same age, then it is logical that the first is a better bet.

The real objective behind the annual hind weight is to bring the information on all animals back to some common

# Practical deer recording and

by John Cowie, farmer, East Limehills, Winton. John is a member of Deerplan.

THE MECHANICS of deer recording, especially in larger mobs and on hilly country, can seem insurmountable, but with herd screening and elite mobs, much useful genetic gain can be accomplished.

## Single sire mating

Single sire mating is the first practical step to take if you are planning a deer recording scheme.

The things that I consider when my single sire mate are:

- **Age of the stag:** We mate promising 2-year old stags with 20 to 30 hinds. Older stags are given 40 to 50 hinds. Exceptional stags have had 60 hinds without problems.

- **Breed/species of stag:** With young Wapiti-type animals, it is important to watch for possible lack of interest or infertility problems.

- **Proximity of mating mobs to other mating or velvetting stags:** When using young stags in particular, we try to keep mating mobs separated either by a lane or an empty paddock whenever possible. This reduces the exhaustion caused by between-fence fighting and excessive hind herding.

Two-year old stags, especially, can spend a lot of energy herding their harem away from the fence nearest to a dominant older stag.

- **Introduction of covering (chaser) stags:** On our farm, where we get a concentrated calving, we don't put our stags out until April 1. They are withdrawn after two cycles (about May 10 to May 20).

We then introduce covering stags and the hinds are moved into larger mobs to enable us to start our winter rotation. If any health problems, such as lameness or excessive loss of condi-

tion, show up in any sire, he is withdrawn and the covering stag introduced earlier.

## Calving

We set-stock our hinds well before calving in mixed-sire groups. We don't calve in sire groups, because we have found that paddock differences can make a difference of 3 to 4 kg at weaning. We calve our 2-year old hinds separately, to avoid the problems due to older hinds being dominant.

Last year our first fawn arrived on November 18 and more than 90 per cent were born by the end of December i.e. by the end of the second cycle. We leave our covering stags out for quite a while, so that our last fawn arrived in late February. Last year this mating policy resulted in 99 per cent of hinds calving with only two barren hinds out of 286.

## Tagging of fawns

Fawn-tagging can cause some problems. When we first started recording our hinds in 1979, we only had about 50 hinds and so we tagged at birth. With two small mobs we had no real problems and possibly lost only one fawn because of tagging.

Tagging at birth had the advantage of giving us exact birth dates and a lot of time to mother-up the hind and fawn, with only slight mis-mothering problems.

The method we use is to place a sack over the fawn where we catch it, tag it and then keep the sack over the fawn until it settles again. Even so, if there is not much cover in the paddock, the fawn can panic and bolt across the paddock. Now, because of larger numbers, and the time involved, we use a combination of methods.

With an elite mob of 70 hinds, which are very quiet, we tag all the early fawns at birth. When about a third of the hinds have fawned, we stop because with more fawns on the ground, the hinds become unsettled very easily. We then look at the hinds every five to six days and record which ones have calved.

We do not weigh at birth because of the risks of mis-mothering, which in our situation, outweigh possible advantages of knowing birth weights.

With the 2-year old hinds, we just record their approximate calving date. I will not tag any of their fawns at birth, because we find they are so easy to unsettle.

With the rest of the mobs, we just record late-calving hinds and any possible barren hinds. These barren animals are usually in very fat condition and show no udder.

The rest of the fawns are tagged in early to mid-February, when we give all fawns a pre-wean drench. If there are any late fawns, very special care has to be taken in moving animals. Wet/dry hinds are also identified at this stage.

We use a two tag insurance system for identifying our fawns. It consists of a maxi Allflex front tag and a large Allflex back tag. In the opposite ear, we use a small brass stud sheep tag. With a policy of replacing any lost tags, we have a permanent identification of all our animals. This is very important in any recording scheme.

Although the use of a maxi Allflex tag on a young fawn can look lop-sided, it saves hours of time in the paddock when we are mothering-up fawns and hinds.

## DEER IMPROVEMENT

base. Obviously it is going to take a lot of data from farmers to develop the best way of using the offspring — hind weight relationship.

**Stag recording:** This will be very simple and involve little more than most farmers are doing now. Although the information collected will be simple, the benefits to the user should be considerable.

With the stag scheme, an annual live-

weight and antler characteristics will be recorded. The antler characteristics will probably include a stage of growth scale to overcome variations in grading between various buyers. However, 2-year old velvet weight can be a good predictor of subsequent velvet production provided we know the period of growth.

Therefore, for 2-year olds, both casting and cutting dates need to be recorded. The weights can then be ad-

justed to a standard growing period to allow meaningful comparisons between stags.

### Conclusions

The Deer Recording Scheme will have much to offer breeders — ranking of hinds on production, ranking of stags, stag comparisons, etc. At present, it is simply a recording scheme until enough information can be collected to take it to the next stage.

# its benefits

### Identifying the hind and fawn relationship

This is the one aspect of deer recording that can cause many problems. On our farm which is flat, I just sit in a vehicle, with a good set of binoculars and record which fawns are sucking which hinds. With a mob of 30 hinds this takes two to three hours, but a mob of 60 to 80 can take up to 10 hours of observation. The use of the maxi ear-tag with its large size, is extremely helpful. It took me approximately 40 hours to do 280 hinds last year.

If your animals are not used to a vehicle and will not settle, it becomes much more difficult to establish this pairing.

Problems of multiple suckling do occur. On average about 3 per cent of our hinds rear two fawns. Most have adopted an extra one in the paddock. Also, occasionally, we have the problem of one fawn being reared by two hinds.

### Weighing deer

The dates for weighing in the Deer Recording Scheme are also very good times to weigh the animals for management purposes.

- **At weaning:** This gives an indication of the hind's mothering and milking ability and should be done in March. This also shows how your hind summer management went.

- **15-month weight:** This gives a measurement of an animal's growth rate potential. In February — early March, spikers are still easy to handle and yearling hinds can also be culled at this time.

- **Annual hind weight:** This can be tied in with a useful weight for management purposes.



### Unselected Red hinds on a North Island farm in February

*John Cowie is getting an extra 8 kg liveweight in his Red yearlings solely as a result of selection.*

### Stag records

The main data required for the scheme are cutting date, velvet weight and antler conformation. With 2-year olds, casting date is also required to allow adjustment for days of antler growth. I record this by just feeding the 2-year old stags grain and observing which coronets have fallen off as they are all lined up eating the grain.

### Results from six years recording and selection.

**Hinds:** In mid-February this year, the weights of our elite uncullered yearling Red hinds averaged 87 kg compared to

79 kg in an unselected syndicate mob. This 8 kg difference in liveweight means big money in the live market today and also gives us improved weaning percentages. These weight gains will be cumulative.

**Stags:** Using Peter Fennessy's correction factors to bring all 2-year velvet weight to 60 days of growth, I am able to rank all 2-year old stags. Our best 1980 born stag had a corrected 60 day velvet weight of 2.1 kg and he has gone on to produce 4.1 kg of velvet, as a 4-year old last year.

Genetic gains such as these with the use of deer recording records are well worth seeking.