

GROUP DISCUSSIONS ON
REPRODUCTIVE PERFORMANCE IN BEEF CATTLE

The same format was used as for the session concerning reproductive performance in sheep. A summary of the comments made follows:

Question 1:

Does the objective of obtaining a maximum calf drop from the beef breeding herd conflict with other more important farm objectives?

Comment:

It may do depending on the farmer's objectives and the nature of his enterprise. On an all beef property for example the objective is likely to be one calf per breeding cow per year produced over a restricted mating period. In the more usual mixed enterprise of cattle and sheep, however, while cattle may be carried for calf production this may have to be sacrificed to some extent where they are required as land developers or where they are essential for pasture control aimed at maximising returns from sheep. The approach taken may also depend on the relative returns per stock unit from cattle and sheep.

Question 2:

What is your attitude to the critical mating weight concept outlined by Mr Mossman?

Comment:

This is a worthwhile approach since it gives the farmer an 'objective target' for high performance in his heifers, and subsequently cows, and commits the veterinarian to a 'follow up' programme concerning performance on the property. It is dependent on stock identification and the use of weighing scales. While use of condition scoring in association with weighing may be desirable this should not be allowed to confuse the issue - an appropriate weight for efficient mating is the target. Critical mating weights can be used in all breeding herds but it must be remembered they may be property dependent since values assessed as being critical may vary with breed (e.g. exotic versus Angus), type of farm (flat versus hill), and district. These probable variations have still to be evaluated.

Question 3:

Is restricted mating of the beef herd desirable in all beef raising areas in this country?

Comment:

Under our seasonal pattern of pasture production, restricted calving should be the aim where farm management has reached a level which will allow adequate feed at the appropriate time to maintain high in calf rates. Restricted breeding is potentially dangerous where there is an ill defined fertility problem or where there is nutritional stress in the post partum period - under these circumstances a longer breeding period should be permitted and restrictions on the length of calving should be imposed following the results of carefully timed pregnancy examinations. The advantages of restricted calving patterns are:

- better utilisation of food resources
- more even line of weaners and improved prices
- more flexible weaning dates
- early identification of non-productive stock which can be fattened for slaughter or used for other purposes
- easier supervision of heifer calving
- easier control of metabolic disease such as 'grass staggers'
- more efficient utilisation of labour
- better utilisation of bull power depending to some extent on the mating period selected for the heifers and the main herd

Question 4:

Is pregnancy testing really necessary when reproductive performance in the herd is efficient?

Comment:

It is and should be regarded as a form of insurance against problems that could arise from:

- introduction of disease
- bull fertility
- management changes

As an aid to management it can be of considerable help with the organisation of grazing groups; moreover where 5% or more not in calf animals are found the saving in winter feed is likely to more than offset the cost.

Question 5:

Is the mating of 15 month heifers in our beef breeding areas really a practical proposition?

Comment:

The general consensus of opinion was that 15 month mating was undesirable under our hill country conditions unless the heifers were exceptionally well grown - it was conceded however that more knowledge concerning lifetime performance was required because of obvious advantages in respect to reduced overheads where acceptable results could be obtained. Criticisms of the practice concerned:

- the reduction in stocking rate required to achieve adequate feed supplies for growing the heifers up to critical mating weights by 15 months of age
- problems with dystocia (particularly with some breeds and sires)
- effects on future reproductive performance and a possible reduction in mature cow size (the latter may not be undesirable provided reproductive performance is not impaired).

It was agreed that on some properties, where heifers were reaching over 450kg liveweight at 24-27 months, mating a year earlier was likely to be successful.

Question 6:

What is the percentage calf loss from pregnancy testing to calf marking and what causes this loss?

Comment:

The loss figure was generally unknown in most practices - estimates varied from 7-10%. (Losses reported in an extensive survey of cows in the Gisborne area during the 1950's averaged 7% with a between property range of 0-12%. Causes were not established. See Fielden, E.D. and McFarlane, David (1959) Proc. Ruakura Farmers' Conference Week pp 16-24.) Factors involved in losses were related to:

- terrain
- abortion often of unknown cause
- dystocia and postpartum deaths for a wide variety of reasons
- metabolic disease resulting in loss of both cow and calf

Much of the loss according to Mossman could be reduced by identifying safe paddocks by the use of 'paddock analyses' and concentrating calving on these areas. Furthermore, since heifers tend to have poorer mothering ability than mature cows, this could be helped, in hill country particularly, by including several mixed aged cows in the heifer groups at calving to act in the capacity of 'baby sitters'. One cow looking after several calves during grazing periods had often been observed on hill country in the Wairoa area.

DISCUSSION ON A CASE STUDY PRESENTED BY E.D. FIELDEN

Members considered that the approach taken had been satisfactory in view of the limited time that the property had been under investigation by the consultant veterinarian. No major modifications were suggested to the programme being implemented but a number of aspects invited further consideration:

- a. Early consultation with a Farm Advisory Officer and the property Accountant may have helped determine dry matter potential for the property as well as clarifying financial objectives.
- b. There was general concern as to whether adequate steps were being taken to ensure the heifers were attaining critical mating weights. Even though mated at 27 months of age the range of body weights was likely to be high because of the prolonged calving span that had been operating in the herd in the past. The use of a 'mini herd' of heifers and a vasectomised bull with a chin ball mating harness might have been a more efficient method of evaluating the rate at which heifers were cycling and when joining should begin.
- c. Why had a calving span analysis not been carried out to determine the most appropriate time for joining the bulls with the cows? Alternatively, pregnancy testing at 90 and again at 133 days after the 12 week mating period had begun would have enabled reasonably accurate identification of cattle into early, late and not in calf groups for culling, grazing and calving management.
- d. The restricted mating period employed, in the absence of a known cause for the earlier poor performance of the herd, may have been an unduly risky approach. Would not an extended mating as before have been better with the calving span then restricted on the basis of pregnancy diagnosis information and culling.
- e. The method used for testing for vibriosis was queried. Why were mature cows selected and why was an indirect haemagglutination test 40 days or more after mating not used in the test system?

Professor Fielden's reply:

The consultant veterinarian had been called upon specifically to investigate the problem with the beef breeding herd. Results with sheep were improving and because of the relative returns from sheep and cattle, objectives were to reduce cattle numbers and increase sheep. Cattle were essential for pasture control and for pasture development. This seemed to be a clear enough brief to begin with. This property was isolated and hilly with considerable areas of scrub. It had very large paddocks, experienced difficulties with recruitment of farm labour and was still under development.

Weighing of heifers could not be considered initially because of yard facilities and lack of scales. The range of weights can be assessed from the weighband results and are illustrated in the case study. An objective was to increase uniformity by both restricted calving and attention to the feeding of heifers from weaning to first mating - this had to be part of the plan for the future and the first steps had been taken (see case study).

Use of a mini herd and vasectomised bulls with marking harnesses on this type of property was considered impractical - ovarian examination of a random group of animals provides an excellent guide as to cyclical activity and is something that can be done quickly. Since a sample of heifers was being brought in for weighbanding this was the approach taken.

Pregnancy testing of cows with calf at foot was not an acceptable approach to the manager because of the effort needed to muster up to yards on this large property. Calving paddock analyses because of the size of the paddocks, general terrain, and limitations of labour were not a practical proposition.

While the marked restriction in mating period implemented may have had an element of risk it was adhered to because of the desire to reduce herd numbers considerably. This meant that the pregnancy rate required could be lower than would otherwise be acceptable and since only one pregnancy test was desired for heifers, and one after weaning, for cows, no difficulties would be encountered in determining which animals should be culled. The pregnancy rate obtained was as it turned out more than adequate for the following year's needs.

The vibriosis test employed was carried out on cows because of convenience to the owner. It was aimed at isolation of the organism since such a result could not only be obtained relatively quickly but would provide unequivocal evidence as to its presence! For the method employed see Hoerlein, A.B. and Kramer, T. (1963) J. Amer. vet. med. Ass. 143:868-872. A slight modification was that neither brilliant green nor mycostatin were added to the culture medium since with careful collection of material from the cervix this is not considered necessary. The evidence from all tests to date in this herd is that vibriosis is not a problem.

POINTS RAISED IN GENERAL DISCUSSION

Question:

Can a condensed calving pattern be repeated year after year?

Reply:

Yes, if feeding is well controlled. The feed may come from three sources

- autumn saved pasture
- autumn saved pasture and spring growth
- spring growth alone

The two latter systems are less reliable because spring growth does not always occur at a given date and local knowledge may become very important. A condensed calving pattern and knowledge of when cows are going to calve within this shortened span allows the manager to make best use of autumn saved reserves which are known when calving begins.

Question:

Can you readily get co-operation from farmers to muster cows with calf at foot for pregnancy testing?

Reply:

Not always and hence a calving pattern analysis is most useful in determining the best joining dates and what has happened during the breeding period. By concentrating

calving, marking, weaning and pregnancy testing can all be carried out earlier. This allows the farmer to use his cows more efficiently in development work.

Question:

Is the concept of a 'mini herd' useful on a beef property?

Reply:

It is better generally to identify individuals within the main herd and monitor these.

Question:

Has Mr Mossman had any failures when implementing his beef production schemes with co-operative clients?

Reply:

Yes. One farmer decided to use his autumn saved pasture for the ram hoggets anticipating that they would bring a good price that season. He received an extra \$5 per head but 27% of his first calf cows failed to get pregnant at mating that year! Another client has only a 68% pregnancy rate in spite of good heifers with good body weights. Moreover, he loses calves and we cannot determine why. His problem is a complete mystery at the moment.

Question:

What value is Vibrio vaccination of bulls?

Reply:

Reports from both Australia and Belgium indicate that 'vibrio' vaccination of bulls has both a 'therapeutic' and 'prophylactic' effect (see Clark et al. (1974) Aust. vet. J. 50:407-409). Where the disease has been identified in a beef herd it would appear to show great promise as a method of control. Whether the vaccine available in New Zealand produces a similar result has not yet been established. Strain variation of this organism (which has been reclassified as a Campylobacter species and not a Vibrio) may still prove to be a problem.