

The SVC Beef Herd Health Scheme

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Introduction

In the area served by the practice concerned the state of beef herds could only be classified as very poor in 1975. The average calving percentage was 64% with a breeding season of 120 days or more. In addition mortality was high with a conservative estimate of 6 to 8% not being uncommon if calf mortality was included. The entire beef enterprise in this predominantly sugar growing area, was a "cinderella" one with the occasional beef crop being taken off every now and then.

Investigation

On investigation it was found that the basic problem was one of poor management. This could be further subdivided into two very definite classes: those farmers who were totally indifferent to the prevailing circumstances, and those who were basically ignorant of sound animal husbandry practices. The latter group could be further subdivided into one of the following groups:

- a. Those that followed traditional farming methods.
- b. Those that lacked adequate motivation and who with a little guidance would change.
- c. Those that would change provided the financial reward would justify the increased managerial input.
- d. Those who were very progressive but lacked sound knowledge.

Of the above groups the farmers considered to be indifferent were not considered, the reasoning being that should they fail they would undoubtedly prove to be very bad adverts. From the remainder, the most progressive farmer and a few of his rivals were chosen as "guinea pigs".

Introduction of the Scheme

The first suggestion made to the selected farmers was to identify all their animals and to join the National Beef Performance Scheme.

Available information indicated that mortality was largely the result of inadequate dosing, dipping and vaccination whilst opportunity losses resulted mainly from reproductive failures.

To impress upon the farmers the need for improved management to optimize returns from the beef operation a chart was drawn up so that the farmer had a week by week

work schedule. This was initially in the form of a single loose leaf. It was found to be ineffective. This was then altered and an elaborate perspex and wood board was made up, gaily coloured and sold to the farmers at a relatively high price. These were readily accepted and to-date these charts have been followed with great diligence.

The chart consists of a flat square box, the front of which is of clear perspex and through which can be seen a rotateable disk. A printed flimsy is adhered to the disk and on the flimsy all required managerial procedures are detailed on a week to week basis. Each procedure is colour coded by the consultant for the particular farm, each code indicating to the farmer the degree of importance of each procedure. Thus each chart is completely customized.

The chart has seven concentric rings, one for each of the following groups of cattle, namely adult cows, heifers, calves, steers, bulls, the feedlot, and other.

Pregnancy tests were then undertaken and as the majority of farmers had not had definite breeding seasons a complete spectrum of results was obtained. If a cow was found to be pregnant she was classified together with those that had calves at foot. Those animals that were neither pregnant or with calf at foot received extra attention and examined thoroughly. Where any possibility of infertility existed it was recommended to the farmer that the cow be culled.

Bulls were also fertility tested and with surprising results—at least 25% of all bulls in use were found to be unacceptable for various reasons. These findings posed certain problems as many farmers were not prepared for it and were reluctant to accept these facts.

Attempts were also made to identify venereal disease in herds where for various reasons their presence was expected. *Vibriosis (Camphylobacter foetus)* was found in several herds, but due largely to the isolated nature of the herds (being a sugar growing area) were relatively free of sexually transmissible diseases.

The next major problem was that of one continuous or very long breeding seasons and the use of "catch" seasons. This resulted in culling being very difficult due to the total lack of comparative information. A 90 to 120 day breeding season was well accepted until pregnancy testing was done and poor conception rates found. Now, eight years later this still poses a very definite problem where herd numbers have not stabilized.

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Many of the problems encountered were directly or indirectly related to nutritional inadequacies at various times of the year. This was the result of poor planning and/or overstocking and in particular the delayed marketing of steers. Farmers largely failed to see the advantage of removing such animals at a far earlier stage and thus make way for the feeding of pregnant cows or replacement heifers. To accentuate the importance of this aspect a system of spot weighing and recording was introduced. A definite percentage of each herd is weighed at regular intervals and targets for each group are set and every effort is made to reach the required target mass at the required time.

The Scheme

All veterinary procedures are related to the first day of the breeding season. In the area concerned this is the first of November.

November: Cows: Breeding season commences.
 Heifers: Dewormed and spot weighed.
 Bulls: Breeding; check breeding management.
 Steers: Deworm and spot weigh.
 Feedlot: Monthly weighing.
 Other: Nil

Notes: The vaccination of calves for *Cl. chauvoei* commences at 2 months of age due to the very high incidence of the disease.

December: Cows: Second thirty days of breeding season: records of repeat services.
 Heifers: Nil
 Calves: First *Cl. botulinum*; deworming; debudding and castration.
 Steers: Nil
 Bulls: Second thirty days of breeding season.
 Feedlot: Monthly weighing
 Other: Complete nutritional assessment.

Notes: Nutritional assessments are done by the herd consultant in conjunction with the farmer. This is to optimize nutritional utilization of available feeds and where necessary to supplement available feeds with essential lacking nutrients. The method used is that suggested by Ardington (1980).

January: Cows: Last 15 days of breeding season; consider possible extension.
 Heifers: Internal parasite assessment and necessary deworming.
 Calves: Routine deworming.
 Bulls: As for the cow herd.
 Steers: As for the heifers.
 Feedlot: Monthly weighing.
 Other: Nil

Notes: Heifers and steers are from 14 to 18 months of age and as at this stage it is the height of the South African summer it is deemed a good time to determine the internal

parasite burden. However, with sound management and thorough calthood deworming the burdens in this group of animals tends to be very light. Negative results are considered highly significant.

Where animals are finished on farm efforts are made to optimize financial returns by taking full advantage of the increase in meat prices normally seen at Christmas time. By January there are usually very few animals in the on-farm feedlots.

February: Cows: Anthrax vaccination and spot weighing
 Heifers: Anthrax vaccination
 Calves: Anthrax Vaccination
 Bulls: Anthrax Vaccination
 Steers: Anthrax Vaccination
 Feedlot: Nil
 Other: Nil

March: Cows: Internal parasite assessments
 Heifers: Internal parasite assessments
 Calves: Routine deworming
 Bulls: Nil
 Feedlot: Nil
 Other: Nutritional Assessment.

Notes: The value of internal parasite assessments based on dung sampling has been criticized as being inaccurate. This is accepted but the use of dung sampling is considered a means to an end. To improve the accuracy of this assessment complete post-mortems are undertaken whenever materials become available. However, with improved herd health the availability of animals for postmortem examinations is very limited.

April: Cows: Pregnancy tests, *Cl. chauvoei*, *Cl. oedematiens*, and *Cl. septicum* vaccinations and *Cl. botulinum*.
 Heifers: Clostridial vaccinations as for cows.
 Calves: Nil
 Steers: Clostridial vaccinations as for cows.
 Bulls: Clostridial vaccinations as for cows; Pasteurella and deworm.
 Feedlots: Nil
 Other: Nil

Notes: Not all the Clostridial vaccines listed above are necessarily used but due to the very high incidence of the disease in the area it is considered a priority.

At pregnancy testing all no-pregnant animals are carefully examined and the farmer is strongly advised to cull all open animals irrespective of the findings. This has been a very difficult concept to get across to the farmers.

Bulls are vaccinated for Pasteurellosis due to the social stress that occurs at this time when they are usually batched after the breeding season.

May: Cows: Spot weigh, Leptospirosis and Besnoitiosis.

Heifers: Spot weigh, Leptospirosis and Besnoitiosis.
 Calves: Wean, deworm, select and decide marketing strategy.
 Steers: Spot weigh, Besnoitiosis
 Bulls: Besnoitiosis
 Feedlot: Nil
 Other: Nil

Notes: Weaner mass and marketing strategy are the significant procedures to be considered in May. The productive performance of the cow should also be assessed at this stage and culling undertaken if necessary.

June: Cows: Nil
 Heifers: Nil
 Calves: Nil
 Steers: Nil
 Bulls: Pasteurella boost.
 Feedlot: Identification, weigh, Pasteurella vaccination, I.B.R. vaccination and growth implants.
 Other: Nutritional assessment.

Notes: This is the time of the year when animals are usually introduced to the on-farm feedlots. As many of the animals are preconditioned the above program has been found to be adequate.

July: Cows: *E. coli*, Paratyphoid (Inactivated) vaccination and spot weigh.
 Heifers: Spot weigh, deworm and S19 Brucella vaccination for the younger group.
 Calves: Nil
 Steers: Deworm and spot weigh
 Bulls: Nil
 Feedlot: Monthly weighing.
 Other: Nil

Notes: *E. coli* and inactivated Paratyphoid vaccination is not undertaken routinely but used in high risk areas.

August: Cows: The start of the calving season.
 Heifers: Nil
 Calves: Identify at birth.
 Steers: Nil
 Bulls: Fertility testing.
 Feedlot: Monthly weighing.
 Other: Nil.

Notes: The most important aspect of this month is the bull assessments. Breeding strategy is also defined at this stage. Included here are:

- Breeding of terminal crosses to suit the expected market.
- Breeding of replacement stock (Master herds).
- Breeding of heifers for ease of calving.
- Compatibility of bulls in the herd.
- Bull pressure and reserves.
- The use of A.I., synchronization, and extended use of high quality bulls.

September: Cows: Ephemeral fever, Vibriosis and Lumpy skin vaccination.

Heifers: Vaccinations as for cows, deworm and spot weigh.
 Calves: Nil
 Bulls: Ephemeral Fever, Lumpy Skin, Rift Valley Fever, Wesselsbron and Vibriosis vaccination.
 Feedlot: Monthly weighing.
 Other: Nutritional assessment.

Notes: The nutritional assessment must pay particular attention to mass loss post-calving of cows.

Bulls are vaccinated in advance of the cow herds to overcome any transient infertility which may result from febrile reactions.

October: Cows: Spot weight; Chlamydiosis, Rift Valley Fever, Wesselsbron vaccinations; Gynaecological examination.
 Heifers: Vaccinations as for the cows.
 Calves: *Cl. chauvoei*
 Bulls: Chlamydiosis and deworm.
 Feedlot: Monthly weighing.
 Other: Nil.

Notes: Where there has been a high incidence of calving difficulties and or retained afterbirths the cow herd is examined for gynaecological hygiene in an attempt to increase subsequent fertility.

Discussion

Since the introduction of this scheme fairly dramatic improvements have been seen on farms where the farmers have committed themselves completely. However, there are still those farmers who are not totally committed. To attempt to improve this regular Beef Study Group meetings are held. At these meetings farmer participation is encouraged to the full. Imported speakers have been used at these meetings where it was felt that certain concepts were not being grasped by participating farmers. The greatest progress has however been made by visiting the farms of participants and other members of the group being constructively critical of the operation.

Record keeping is also critical if satisfactory deductions are to be made from observations. The minimum requirements on any beef farm are those required by the National Beef Performance Scheme. However, in herds that are more advanced certain other records are required. Included here are the following:

a. *Mortality Records:* It is essential to make a definite diagnosis wherever possible. With a greater involvement and interest on the part of the farmer the majority are very happy to invest money in post-mortem examinations.

b. *Breeding Season:* The exact dates of when bulls were introduced and what bulls were used on the respective herds is critical. Where possible herdsmen should be encouraged to report on bull activity and to record on a daily basis, the cows on heat.

Results

c. *Pregnancy Test Results*: These must be complete and must be analyzed for each group of animals. Heifer and firstcalf cows require particular attention. Further, the value of attempting to determine the reason for cows not falling pregnant cannot be over stressed.

d. *Weaning Data*: It is imperative that this information be closely examined and related to projections made and results obtained in previous years. Further selection of replacement stock from these figures can be undertaken. One word of caution here is the very high indexing heifer. These animals often out-perform their peers due to masculine traits which if not selected against could have disastrous results on subsequent herd fertility.

e. *Calf Drop*: Recording the actual daily births during the calving season can prove to be invaluable in making predictions on the following breeding season and weaning mass of the current calf crop.

f. *Bull Performance*: This group which represents one half of the capital invested in genetics is most often the most neglected group of animals on the farm. All facts pertaining to these animals must be carefully recorded.

g. *Feedlot Performance*: It is imperative that this operation be very closely watched particularly where bought-in high energy rations are used. Feed efficiency must be continually monitored to minimize losses.

h. *Marketing*: Apart from the actual marketing strategy used it is also critically important to keep adequate records of all down-gradings, trimmings and condemnations and the reasons therefore.

Initial results were extremely satisfying. However, with the majority of herds now functioning at relatively high efficiency rates progress is obviously much slower, although still very satisfactory.

Herd numbers have grown considerably (from an average herd size of 90 cows to 300 breeding cows). Despite this calving percentages have increased from 65% to an average of 92% with a 90 day breeding season as against 120 days or more.

Weaner mass has improved from an estimated 150 kg at 210 days to an average of 220 kg. On one particular farm average daily gain has increased from 0.53 kg per day to 0.83 kg per day over a period of 6 years.

General herd health has improved drastically. Adult mortality is down to less than 1% with calthood mortality at 1.2% on average with the best herd being 0.5% on 400 breeding cows.

Despite these very satisfactory results there are still many problems to overcome. Some of these are outlined below:

a. Inadequate cow numbers which results in inadequate culling intensity.

b. Long breeding seasons; farmers are generally reluctant to reduce this.

c. Poor availability of proven sires or exceptional A.I. sires.

d. The high price of grain relative to the meat price.

e. A suitable computer program for the analyzing of performance figures both on a herd and group basis.

References

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