Organising and servicing an efficient A. I. beef breeding scheme entails a great deal more than merely providing the necessary collection, storage and distribution facilities.

During the past thirty years A. I. has become firmly established as a farming technique in dairy herds all over the world. Experience has grown with each new improvement to the overall processing, storage and distribution technique, and with their application to dairy farmers’ herd management. Thus the facilities required, the selection of animals in heat, the results which may be expected, all form part of the knowledge which has been acquired through the use of an A. I. Service.

On the other hand, in New Zealand beef breeders are relatively unacquainted with the technique, as little use was made of A. I. in the beef industry until recently, when great interest has been shown in it, associated with the introduction of exotic beef breeds.

In organising an A. I. beef scheme it will, therefore, be necessary to undertake preliminary extension work to accustom newly interested beef breeders to the day to day details of an artificial breeding service.

In New Zealand beef breeders who are interested in using A. I. can be divided into three broad groups.

In the first group are those who are able to join a viable A. I. group in their area, such a group would contain beef cattle in sufficient numbers to justify the employment of a salaried technician, with assistance in the matter of organising workable groups from some experienced adviser.

* New Zealand Sire Services, Artificial Breeding Center, P. O. Box 8036, State Highway 3, Rukuhia, Hamilton, New Zealand.
Until recently there were in New Zealand few such groups as interest was rather scattered. It was, therefore, more common to find beef breeders in the early stages joining an existing dairy insemination scheme for technical service, but using either beef semen available from the dairy scheme, or imported semen or supplies of beef semen from some independent source of supply.

These form the second group of beef breeders using A.I.; and generally their inclusion in an existing dairy scheme reduces the general running costs for both dairy and beef members. A small proportion in New Zealand (5-6%) of beef semen is used in dairy herds in any case, so the inclusion of beef herds creates no special problems in processing or distribution. The main limiting factor to the inclusion of beef herds is the original size of the dairy group (whether or not it is already large enough for one technician to handle), and secondly, the accessibility of beef farms to the technicians daily round. The third group of beef A.I. users consists of large of valuable private herds where the volume of work or value of the individual animals justifies the employment of a full time technician. In many cases this type of beef service will be undertaken by the owner himself, his son, or an employe, thus creating a demand for training schools for beef-breeders contemplating inseminating their own herds.

The extent and depth to which an A.I. service is organised depends on the objectives and organisation of the semen suppliers and how they regard their function in the beef breeding industry. Thus field organisation may be undertaken by industry co-operatives, Statutory Boards, private companies (local or international) so that the user of a Beef A.I. Service will now very likely have available some organisational aid, and field service from one of several competitive parent organisations. This creates healthy competition but unfortunately, at some duplication in resources, and overlapping in services.

Each body must decide its own policies in the wide field of A.I. service organisation. The present situation makes it impossible to proceed very far without crossing the interests of similarly motivated companies. Already frozen semen from highly rated bulls is available from several sources, and this applies to local as well as imported bulls.

Most importantly, the utilisation by several organisation of the services of existing field technicians, when the work loads permit, is a considerable saving in manpower.

In New Zealand beef breeding usually starts later in the year, than dairy breeding, by about six weeks, so that a technician servicing a dairy group could continue with a beef group as dairy cow numbers fall and beef cow number increase.

The decisions on how close this co-operation can be depends on the policies of the employing bodies.

TECHNICIAN TRAINING

If technical services are not available from existing trained inseminators, some training must be organised. In any case those user of A.I. who fall into the third group described earlier (own-herd operators) will have to be trained by someone, and in the absence of any independent official training scheme, each supplier of semen must make its own arrangements for technical field service.
Organisation of Field Groups

Large suppliers of prepared semen can organise field groups using experienced men to arrange the size of the group, the starting and finishing dates for the service, employ and pay technicians, and arrange for regular supplies of expendable items during the working season, as well as providing the day to day requirements in prepared semen, and in the case of a frozen semen service, replenishments of liquid nitrogen.

It should be remembered that in some circumstances, that is where large numbers of animals are to be bred in a short period, and where the nomination of particular bulls for certain cows is unimportant, a liquid semen service would be much cheaper.

The widescale use of frozen semen has enabled beef farmers to select individual bulls, which was not possible with a large scale commercial liquid semen service. This gives added attraction to such a service especially with new bulls being added to the stock lists at frequent intervals. An active extension and advertising service is, therefore, necessary to keep present and prospective users advised of new additions and developments. The organising body will require to keep accurate breeding records for accounting purposes, but also for checking on conception rates of material supplied, and for investigating herds with infertility problems. Considerable experience is required to handle the data accumulating each day from a large field organisation, if the utmost use is to be made of the information.

A great deal of the preparatory work for successful organisation must be done some weeks or months before the actual starting date. In the case of new members in a group their facilities for holding and servicing cows will have to be checked, and adequate information provided about the detailed working of the scheme. Well defined lines of communication must be laid down, so that break downs in service can be restored with the minimum delay. Seasonal A.I. schemes in particular must be very thoroughly planned as misunderstandings in starting and finishing dates can cause avoidable irritations. The great advantage of a frozen semen service is that dispatches can be planned well ahead, provided accurate details of requirements are available.

All new members of an A.I. scheme must be advised of the following points:

a) The necessary interval between calving and breeding for good results (over 50 days).
b) The best system for picking cows in heat.
c) When to inseminate cows in self-service groups.
d) Normal range of conception rate to be expected.
e) Facilities required for insemination.
f) Identification of stock.
g) Care of nitrogen banks.
h) Consideration of the advisability of applying the latest synchronisation techniques.

All these matters are commonplace to experienced users of A.I. but not to the new commers.
SERVICING AN A.I. BEEF SERVICE

Service on the field side of an A.I. project may be directed at two different people, the herd-owner and the technician. In other cases it will be the owner only, as he will be doing his own inseminating, and will consequently receive all types of service.

BEEF HERD OWNERS

Service will be aimed at keeping beef farmers informed of new developments in the service, such as, the availability of new breeds, new bulls, changes in servicing charges, or dispatch arrangements and many other details of this sort. Frequent newsletters giving broader information, are well worthwhile if they can be regularly produced.

Of considerable importance is regular advice on frozen semen stocks on hand when a custom freezing service is being used. Most organisations dealing with livestock have developed attractive methods of supplying information to breeders, and A.I. matters of interest are usually well handled, as regards, the following: Field days, attendance at agricultural shows, and open bull centre days, are common and rewarding extension activities. The personal contacts made on these public occasions can be very helpful in extending and improving a field service.

THE TECHNICIAN

All services directed at technicians, aim to maintain their efficiency. Much of the information related to new breeds and bulls should be forwarded to them as well as the herd-owner. Again when possible, regular informative news-sheets will keep them abreast of new techniques. In large organisations, conferences at suitable intervals (two years) to allow papers and discussion on topical matters are helpful.

Much of the service to technicians will be routine replenishments of expendable items of equipment, and of vital importance of supplies of frozen semen and liquid nitrogen.

Apart from making good usage in semen stocks, all efforts at processing and distributing points must be directed to ensuring the highest quality semen is processed, and that this does not deteriorate during transport and when being transferred to field banks.

Unfortunately bad techniques in handling frozen semen during its transfer from a main bank to shippers, and from these to technician's banks cannot be always detected, and as a result the user may receive undetectably damaged material.

Great emphasis needs to be placed on the dangers of prolonged withdrawing frozen semen from liquid nitrogen for indentification of straws. In one word experienced staff, unavoidably employed during emergency dispatches, are particularly prone to this fault, and the serious bad effects of withdrawing straws for even a few seconds in atmospheric temperatures needs to be kept in mind even by experienced technicians.
TRANSPORTATION OF SUPPLIES

The modern liquid nitrogen container is highly efficient, and reasonably robust, so few problems now exist with the mechanics of holding and transporting semen at very low temperatures (—196°C) for 8 weeks or longer at one filling. As a result, replenishments can be made at long intervals, which, with modern transport, enables frozen semen to be sent anywhere in the world.

In any set of circumstances the main consideration is cost, which is high in capital items, such as shippers and technician's banks, to which must be added costs of liquid nitrogen, and the handling and transport charges.

These pose no problem in well-developed beef raising countries but they could be a limiting factor in applying A.I. in developing countries unless outside financial support is available. Unfortunately the areas where most problems (in costs) are likely to occur are developing tropical countries, so that an alternative cheaper (liquid semen) service would be difficult to apply successfully.

METHOD OF DISTRIBUTION

The ideal system of restocking technicians field banks is where a service truck travels a set route on a regular time table. This allows technicians to meet the truck and restock with semen, liquid nitrogen and expendible stores.

When the volume of work or its irregular demand does not warrant such a service, supplies can be forwarded on call, or at set intervals using public transport. In small countries with good communications this is not problem, except at public holidays or when regular staff are on leave.

The only problem encountered in servicing beef units in this way has been the slow return of nitrogen shippers. When shipping very small quantities, sometimes less than 10 straws are required, it seems a very much smaller and cheaper shipper, which would hold low temperatures safely for 4 to 5 days would be an advantage and would discourage consignees from using nitrogen shippers as storage banks.

FIELD SYSTEMS FOR ADVISING SERVICE REQUIREMENTS

In most circumstances the telephone with an answer/phone attachment for unmanned office hours is the established method of advising group technicians that service is required. For a large number of cows a technician may travel a set round each day, in which instance a simple semaphore system for advising that a call is required, works very well and saves a lot of unnecessary mileage. Some object, such as a coloured disc can be displayed at a point visable from the road, when the technician is required.

In scattered groups where no telephone exists, use can sometimes be made of transport lorries (milk collecting trucks, etc.) for delivering messages to a central point, so the technician can plan a daily round from this information.
SUMMARY

A brief account of beef A.I. organisation is given with particular reference to New Zealand. The types of groups which are developing and the necessary preparation for servicing them is outlined.

Emphasis is placed on the need for preparatory extension work, and where required, technician training.

Systems of servicing beef A.I. units are described, with alternatives methods for well developed and emerging beef industries.

In servicing beef groups the necessary maintenance of frozen semen quality from the time of collection and processing until it is used on the farm is accented.

Method of notifying service requirements are discussed.

RESUME

Un bref rapport est donné sur l’organisation de l’insemination artificielle des bovine avec référence particulière pour la Nouvelle Zélande.

La genre des groupes qui se forment, et la préparation nécessaire pour leur entretien sont esquissés.

Les systèmes utilisés dans les diverses sections de l’insemination artificielle sont décrits par des méthodes alternatives pour une industrie bovine en plein essor et développement.

Dans l’activité des groupes bovins, est soulignée, la nécessité de maintenir le sperme congelé dupies son prélèvement jusqu’a son emploi à la ferme.

Une méthode de notification des besoins de cette activité est discutée.

ZUSAMMENFASSUNG

Ein kurzer Einblick in die Organisation der künstlichen Besamung von Rindern mit besonderer Berücksichtigung der Verhältnisse in Neuseeland wird gegeben.

Die verschiedenen sich entwickelnden regionalen Gruppen und die nötige Vorbereitung zu ihrer Versorgung werden beschrieben.

Besonders betont wird die Notwendigkeit eines guten Informationsdienstes und, enn nötig, entsprechendes Training von Technikern.

Versorgungssysteme zur künstlichen Besamung von Rindern werden beschrieben nicht nur für bereits bestehende sondern auch für entstehende Fleischproduktionsbetriebe.

Betont wird auch die Qualitätserhaltung von gefrorenem Samen vom Augenblick der Gewinnung und Verarbeitung bis zum Gebrauch im Betrieb.

Bestellmethoden für Samen werden besprochen.