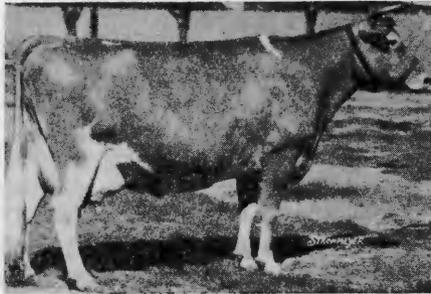


# The Artificial Insemination of Dairy Cattle



**Agricultural Extension Service  
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# The Artificial Insemination of Dairy Cattle

M. B. Nichols

Artificial insemination is not a new thing. The claim is made that it was successfully used by an Arab chief to inseminate a mare in the 14th century. The first scientific research on the subject was conducted by an Italian, L. Spallanzani\* in 1780. His work was largely with dogs. In modernizing artificial insemination, a leading role has been played by Russia. A Russian scientist, Professor Eli Ivanov, discovered the effect of lowered temperatures on semen preservation. This, together with the perfection of a practical method of obtaining semen, has given the practice widespread use in Russia today. Prior to the war, Denmark had made good strides in developing artificial breeding groups. In the United States the first group of this kind was organized in New Jersey in 1938. Since that time the movement has been quite widespread, notwithstanding the handicaps imposed by the war.

## ADVANTAGES OF ARTIFICIAL BREEDING ASSOCIATIONS

- (1) Sires of proved inheritance and fat production are made available to all dairymen. Through careful selection and the use of family blood lines, whole communities may at one time reap the benefits of the service of outstanding bulls which formerly were used only on one farm.
- (2) The danger and bother of keeping a bull are eliminated. The feed and labor expended on him can be spent on an extra cow.
- (3) The use of heavy bulls on yearlings is no longer a problem.
- (4) There is a greater assurance that the bulls used are fertile because of the regular microscopic examination of their semen and the constant checkup on their rate of conception.
- (5) Dairymen will be assured that they are raising better herd replacements.
- (6) The cost of service is usually less than the cost of purchasing feed and caring for a bull.
- (7) Breeding and calving records will be better kept than is commonly the case on many farms.
- (8) Securing progeny of outstanding bulls will arouse interest in better feeding and management.
- (9) This program should eliminate the "stock yard" bull and stimulate interest in getting a foundation of good "seed stock" animals.

## LIMITATIONS OF ARTIFICIAL INSEMINATION

- (1) Successful artificial breeding must be done by skilled technicians who have had training in the work. A good knowledge of reproductive organs, sanitation of procedure, and the handling of semen is essential.
- (2) The conception rate from artificial insemination will usually be about the same as from natural service.
- (3) A member cannot always obtain service from the sire he desires most on the day his cows must be bred. The Association bulls must be used according to a definite schedule. A sire should not be used more often than every fourth or fifth day.

\* *The Artificial Insemination of Farm Animals*, by E. J. Perry.

- (4) To organize properly and to finance adequately an organization of this kind requires a lot of hard work.
- (5) Considerable capital is required to finance the original artificial insemination program.

### PROBLEMS FACING ARTIFICIAL BREEDING ASSOCIATIONS

"The most important problems that face co-operative artificial breeding associations and that affect their future expansion are these:

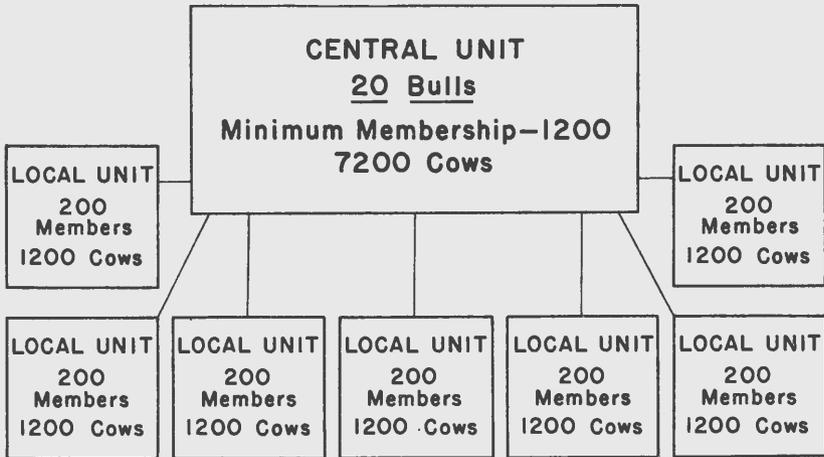
- (1) Finding good, proved bulls that are fertile.
- (2) Prolonging effective usefulness of bulls and preventing fluctuation in breeding efficiency.
- (3) Convincing new members that not all cows conceive with one or two inseminations.
- (4) Overcoming the difficulty when artificial breeding has been oversold.
- (5) Correcting the impression in some areas that artificial breeding is a method to use when natural service fails to produce conception.
- (6) Too low conception rate in certain herds.
- (7) To have sufficient cows (1200) in a prescribed area so as to reduce the mileage per cow.
- (8) A proper appreciation of the part that good inheritance can play in herd improvement.\*"

### REQUIREMENTS FOR THE SUCCESSFUL OPERATION OF AN ARTIFICIAL INSEMINATION ASSOCIATION

- (1) **Sound Breeding Program.** The sires used must give promise of increasing the milk and butterfat yield of the members' herds and transmit acceptable type.
- (2) **Provide Fertile Semen.** Getting a high percentage of the cows with calf without undue delay is one of the most important factors. In most associations the percentage of cows conceiving with first insemination is sixty or above.
- (3) Employ and train reliable, courteous, honest, and aggressive men for technicians.
- (4) At least 1200 cows should be signed up within a radius of 20 miles.
- (5) A sound financial program must supply adequate funds to pay salaries, secure necessary equipment, and purchase outstanding herd sires.
- (6) The dairymen, boards of directors of local units and central unit, civic and farm organizations, and other groups such as milk plants and creameries must be actively interested.
- (7) Each member must be actively interested in all matters of policy such as financing, sire selection, etc. He must co-operate by reporting calls for insemination before 10 a.m. each day, must have the cow in the barn and identified, and must pay the service fee on or before the day of breeding. He should attend the called meetings of the Association and should acquaint his neighbors with the program. "Every member should be a fieldman."

\* *The Artificial Insemination of Farm Animals*, by E. J. Perry.

## ORGANIZATION



Usually an artificial breeding association will be comprised of several local units joined together to form a central unit. The bulls will be kept at the central unit. This has several advantages over a local organization operating as an independent group. These advantages are:

- (1) It is more economical to operate, as the per-unit cost for bulls, buildings, and equipment is greatly reduced.
- (2) More money is available for the purchase of outstanding bulls.
- (3) The danger and labor of handling bulls is eliminated except for the central unit.

In order to insure the success of such a project, it is recommended that at least 6 local units be organized and combined to form the central unit. A representative from each local unit would comprise the governing board of the central unit. It is generally recognized that each local unit should have a minimum signed-up membership of 200 dairymen with 1200 cows. This would be a total of 1200 dairymen and 7200 cows comprising the central unit.

### FEEES

The following is an estimate of the fees to be assessed to operate such an organization:

- |                                  |         |
|----------------------------------|---------|
| 1. Lifetime Membership Fee ..... | \$10.00 |
| 2. Breeding fee—per cow .....    | 7.00    |

The \$7.00 breeding fee would include the first service and two subsequent services if necessary. Additional fees should be assessed for more than 3 services on a cow.

It is proposed that the membership fee be assigned to the central unit. With 1200 cows in a unit, \$4.00 of the breeding fee should be sufficient to finance the local project. This would leave \$3.00 to turn in to the central unit. For detailed information on artificial breeding associations, see your county extension agent.