Summary of a Paper on

ARTIFICIAL INSEMINATION IN CATTLE

by

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A herd at Ruakura has been artificially inseminated to work out details for the practical application of this method of breeding in New Zealand.

The gathering, storing and diluting of semen samples has been done in the usual types of apparatus used and described elsewhere. The Cambridge pattern artificial vagina was used to collect semen, Milovanov S.G.C.2 was used to dilute samples in equal proportions. Storage was for up to 8 hours in a refrigerator at from 5-10°C. Inseminations were made with 0.5 c.c quantities of diluted or undiluted semen.

Cows were divided into two groups. One receiving a double insemination with freshly collected, undiluted semen twice during each heat. Of 37 cows mated to two bulls, 62 per cent.held to the first service, 75 per cent. by the second, 83 per cent. by the third, and 87 per cent. by the fourth.

In the second group a single insemination with diluted stored semen was given during each heat. Of 32 cows, 41 per cent. held to first service, 66 per cent. to the second, 82 per cent.to the third and 91 per cent. to the fourth.

In another small herd, 15 out of 16 cows were settled by the second insemination.

These results compared favourably with those obtained by natural service with the same bulls on the herd in the previous season.

Some difficulty was experienced in maintaining a high grade sample of semen throughout the work (3 months) with the older bull (6 years). This was the first experience he had had of continuous use with the artificial vagina.

The older bull averaged 5.0 c.cs. for ejaculates that were actually used, and the younger 3.4 c.cs. Allowing a 25 per cent. loss in samples collected for laboratory examinations, the estimated number of cows which could have been served once with the diluted semen was 736 for the older and 436 for the younger bull. These figures do not represent the maxima, but what was actually obtained during the course of work.

Observations were made on the density on pH of the semen samples and on the pH of the original mucus of the cows at the time of insemination. No connection between these properties and the results of fertilisation were noted in this work.

A system of storing and distributing semen in small glass ampoules, and a gun to use with the ampoules is described.

Conclusions:

When some of the details in storing and handling the semen have been improved this method of breeding could be used in New Zealand to spread the services from outstanding sires, over a much larger group of cows than would be possible with natural matings.

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