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DAIRY HERD FERTILITY

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METHODS of increasing conception rates with herds using A.I. were discussed. Two approaches appear feasible.

1. Through a study of herds using A.I. attempt to find the reasons why certain herds have low conception rates.
2. Raise conception rates by an improvement in A.I. techniques.

Analyses of conception rates for herds using A.I. have shown that 50% of the total variation between herds is due to chance, 17% to technicians and only 33% to true herd differences. Because the major part of differences between herds is due to chance, it is unlikely that a study of herd records will give rapid improvement. However, substantial increases in conception rate have been achieved by an improvement in A.I. techniques. It has been shown that when all bulls are used the conception rate falls as the age of semen increases. However, the decline in conception rate is not the same for all bulls—*e.g.*, the three Jersey merit bulls with the best results in 1955 showed a decline of 6 percentage units from semen used on the day of collection to semen used two days after collection, while the three Jersey merit bulls with the lowest results showed a decline of 34 percentage units. Further, this decline in conception rate was highly repeatable and could be predicted by fructolysis indices determined on semen that had been cooled and stored for three days. By using as much semen as possible on the day of collection, and restricting for use on the day after collection only those bulls whose semen stored well, an increase in conception rates of 5 percentage units has been obtained. A further increase has been obtained by the use of improved diluents. Large-scale field trials have shown that a new diluent containing glycine and glycerol increased conception rates by 2 percentage units with semen used on the day of collection, 4 percentage units with semen used on the day after collection, and 9 percentage units with semen used two days after collection.