

Monitoring Trends in Conception Rate

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Monitoring results of a breeding program, especially evaluating trends in conception rate, should be an integral part of a reproductive herd health program.¹ "Conception rate" is defined here as the number of pregnancies resulting from a given number of services which when multiplied by 100 becomes a percentage. The number of services used as the denominator should be **all** services in a given period including those used in cows that ultimately leave the herd without conceiving. Counting only those services used in cows that eventually conceive gives an artificially high result and one that is unduly affected by culling. This policy also complicates and delays conception rate calculation as no decision can be made about the inclusion or exclusion of unsuccessful services in cows still being bred. Although average days open is the reproductive parameter with greatest economic significance in a dairy herd, there are several reasons for using conception rate as an indicator of herd performance. It is one of the three factors which determine days open, the other two being estrus detection efficiency and length of the postpartum rest interval. Conception rate data, when used with early pregnancy diagnosis, can indicate reproductive performance to within 21 to 35 days. These data also are easily calculated and are accepted as a standard index for dairy cattle reproduction. The most productive way to use conception rate data is to examine the time trends rather than look at one numerical figure representing an extended period, for example, one year.

A graph system consecutively listing service results according to service date has been developed.² From a list of services and service results (i.e. pregnant, nonpregnant, or rebred), a graph is constructed using one input for each service. One symbol is used for each pregnancy achieved (a P is used in the sample graph in Figure 1) and another symbol (O) is used for each unsuccessful service. The first entry starts from an arbitrary point on the left side of a sheet of graph paper; P's are entered one row up from the last entry and O's are entered one row down. The slope of the composite line formed by these entries indicates conception rate trends in the herd. A line that goes approximately straight across the page indicates a conception rate of about 50%. In Figure 1, the starting date and dates at increments of 25 services are indicated and the pregnancy rate for each 25 service group is calculated. Graph paper with 100 columns therefore will allow 100 services to be conveniently recorded per page.

The service list can be maintained by the client, and the graph should be updated and inspected at the completion of reproductive examinations during each veterinary visit. This list becomes a handy checklist to see if all cows ready to be checked for pregnancy have been examined. The system can record the results of all services or only first services. Using only first-service results in small and medium herds, however, eliminates data needed to show performance trends. Another reason to use all services is that repeat service frequently costs the same as first service. In addition, results from first services and for all services frequently are so similar that distinguishing between them is not important. Therefore, using results of all services is recommended, with the possible exception of very large herds.

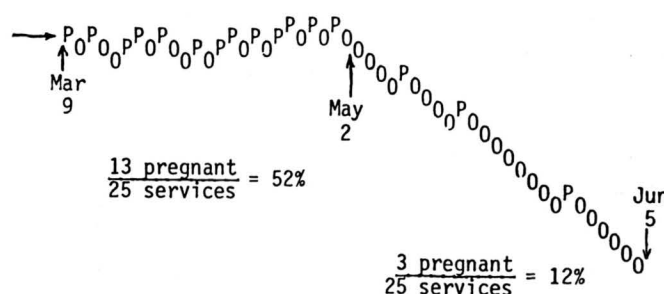


Fig. 1. Graphic presentation of service results in a herd from March 9 through June 5. Services resulting in pregnancy are indicated by a P and those not producing a pregnancy are shown by an O. The conception rate for each group of 25 services is presented, along with the beginning and ending dates for each of these groups.

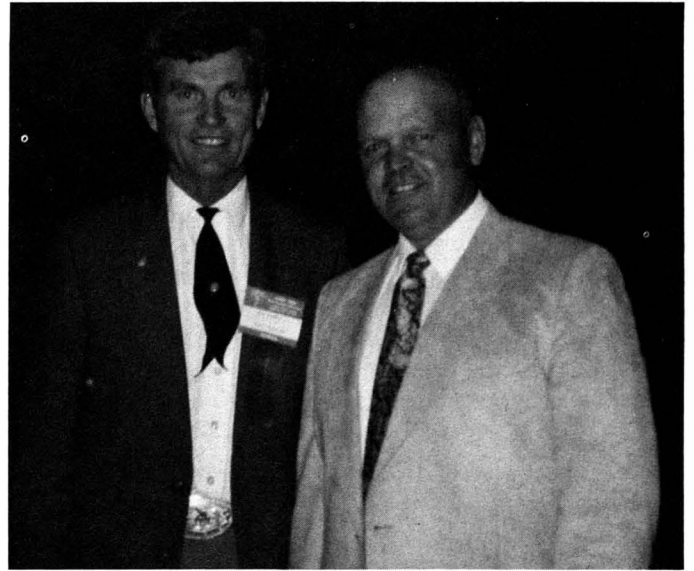
This graph system is an excellent method to determine conception rates on farms accurately. Replacing the common but erroneous practice of equating conception rate and pregnancy examination results (i.e. number of cows pregnant of those examined for pregnancy) with a system such as this should be encouraged. Percentage of cows pregnant at palpation effectively indicates estrus detection but not conception rate. The graph system also quickly indicates when conception rate changes. Notice in Figure 1 that the onset of a low conception rate can be

pinpointed close to May 2nd. With this information, an investigation can be focused on this period which may obviate a diagnosis. Similarly this graph quickly indicates when results have improved.

References

1. Seguin, B.E.: *Comp. C.E. Vet. Pract.* 3 (1981):S445.
2. Meek, A.H., Mitchell, W.R., Curtis, R.A., et. al. *Can. Vet. J.* 16 (1975): 329.

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