

# **Reproductive Management**

## **Monitoring Patterns of First Inseminations**

This article is the first in a planned series on the use of DairyCOMP305 to improve reproductive performance. These articles will focus on using DC305 and other VAS products to guide tasks, assess implementation, and analyze outcomes.

### **Introduction**

The ultimate goal of any reproductive program is the conversion of eligible open animals to pregnant animals as efficiently as possible. Pregnancy risk is the tool for monitoring the efficiency of this conversion and will be discussed in a later article. However, pregnancy risk is a measure of the final outcome of a sequence of implementation steps.

Frequent monitoring of these intermediate steps will help keep programs on the planned track and help identify problems in a timely manner. In many cases the purpose of the monitor may be the comparison of the pattern of the actual implementation versus the expected pattern of the planned program.

Some of these intermediate implementation steps include ensuring cows:

- Receive their first insemination in a timely manner post-calving
- Receive subsequent inseminations in a timely manner if conception did not occur on the prior insemination
- Have a good probability of conceiving if inseminated

### **Monitoring Patterns of First Inseminations**

Excellent reproductive performance requires animals to receive their first insemination in a timely manner after calving. Assessment of the patterns of implementation should allow answers to these questions:

- When has management chosen to begin inseminating cows after calving?
- What is the pattern of insemination?
- Has the pattern changed over time?
- Does the pattern match the stated plan?
- How many exceptions are occurring?

This article will focus on some graphical methods to assess the implementation patterns for a few of the more common approaches for first service inseminations:

- Estrus detection (including visual, tail chalk, pedometers)
- 100% OvSynch without estrus detection at first service
- “Backdoor” OvSynch

## Using Graphs to Assess Patterns of First Inseminations

The two primary graphs used to assess patterns of first inseminations are column graphs and scatter graphs. The layout of each is shown in the table below.

Type of Graph	Horizontal (X) Axis	Vertical (Y) Axis
Column graph	Days-in-milk at first service	Count of cows with a first service at a specific DIM
Scatter graph	Date at first service	Days-in-milk at first service

Column graphs and scatter graphs have their unique pros and cons, listed in the table below.

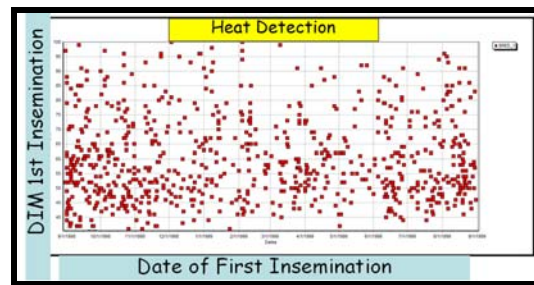
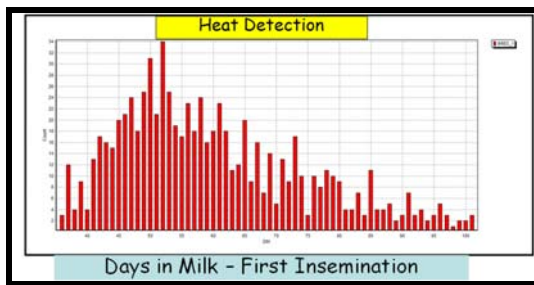
Type of Graph	Pros	Cons
Column graph	Determination of VWP Easy to quantify number of animals at each DIM	Can not directly detect changes over time
Scatter graph	Detection of change over time Access to individual cow data	Quantification more difficult as data points may overlap

## Herd Example Reports

Commonly used programs for achieving first insemination have very recognizable patterns. The actual pattern of implementation can be compared to the expected pattern to ascertain how well the plan is being put into action.

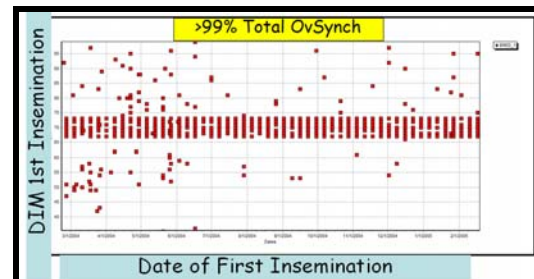
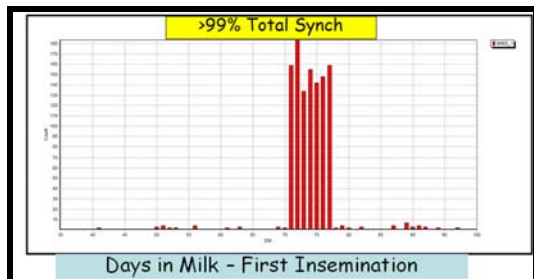
### Example 1

The two graphs below are a herd utilizing estrus detection with very little apparent synchronization. This herd starts breeding cows around 40 DIM and breeds a majority between 40 and 70 DIM, but has a significant number bred between 70 and 100 DIM for the first time.



### Example 2

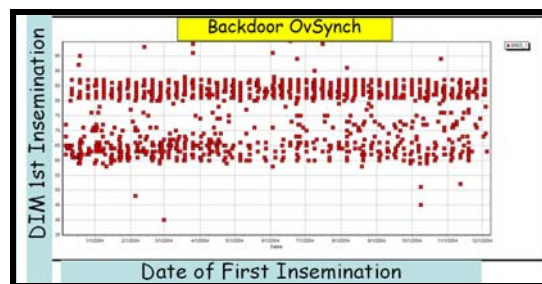
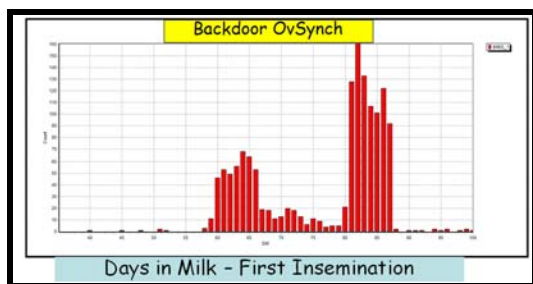
The graphs below are a herd utilizing synchronization almost exclusively for first services. This herd starts breeding cows at 71 DIM and breeds almost all cows between 71 and 77 DIM.



### Example 3

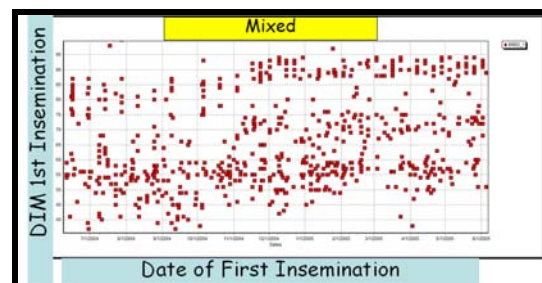
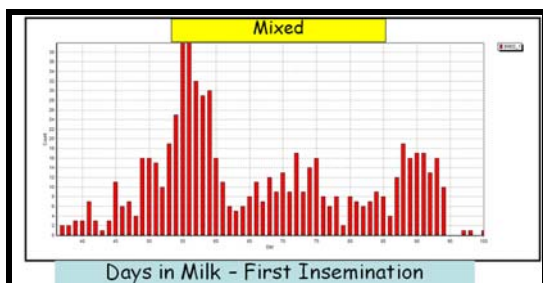
The graphs below are a herd utilizing what is often called “Backdoor” OvSynch. In these programs estrus detection is performed for a period of time following the end of the Voluntary Wait Period (usually in conjunction with some form of PreSynch progestagen program).

Note the initial group of breedings immediately after 60 DIM and a second group at 81-87 DIM. The first group was bred based on estrus detection and the second from an OvSynch program.



### Example 4

The graphs below are a herd utilizing a mix of estrus detection and synchronization in patterns that are changing over time. While herd managers should be receptive to new ideas and changes, often these patterns are seen when herds are struggling.



### DC305 Mechanics

The DC305 command to produce the example column graphs is: **EGRAPH BRED \IN1W1T100**

The DC305 command to produce the example column graphs is: **EGRAPH BRED \N1ST100**

### Switches

- I Use DIM as the horizontal axis
- N1 Select only the first insemination
- W1 Make the width of the bar equal to 1 DIM (default is 7)
- T100 Set the maximum of the horizontal axis to 100
- S Create a scatter graph

*Helpful hint:* The Options button in EGRAPH allows easy access to changes in the appearance and layout of graphs, including changes in date ranges, selection of different lactation groups, selection of different legend options, and many other options. More details on EGRAPH mechanics can be found in **Egraph\_Reference.PDF**, located on the VAS Help Desk.

