

# Benefits of Artificial Insemination and Estrus-Synchronization of Dairy Heifers

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COOPERATIVE  
EXTENSION  
SERVICE



The answer to the question "Why Artificially Inseminate Heifers?" is quite simple: to increase the number of genetically superior heifers available for herd replacement and sale. Certainly there are many other valid reasons for using heifer AI: higher conception rate, increased semen value, calving ease, controlling transfer of reproductive diseases, safety, controlled breeding, better records, and accurate due dates. However, the bottom line is heifer AI puts the dairy farmer in a position where he or she has plenty of genetically superior heifers available for replacement and sale.

## **The Genetic Edge**

The genetic advantage of AI is well documented. Simply put, daughters of average AI sires out milk daughters of average non-AI bulls by a wide margin. The AI advantage is usually about 1,200 pounds per lactation for mature daughters of average Holstein AI sires over daughters of natural service Holstein bulls. Dairy farmers should not be satisfied with average sires, and should be encouraged to breed heifers to above average sires. With a little selection, dairy farmers should expect daughters of AI sires to out milk their non-AI counterparts by much more than 1,200 pounds per lactation. The most genetically superior animal on a farm should be the heifer born today out of a first calf heifer.

## **Predictable Results**

AI allows dairy farmers to predict calving ease and to predict the production and type of their future herd with a reasonable degree of accuracy. The information available on AI sires is not available on natural service bulls so dairy farmers assume several unnecessary risks when heifers are bred to unproven non-AI bulls.

## **The "Alternative Crop"**

A popular topic in Agriculture is alternative income and alternative crops. Most dairy farmers could generate substantial increases in income if they would do a superior job of managing genetically superior cows. This of course requires genetically superior replacements. In addition, the sale of quality extra heifers for a premium price is an excellent "cash crop." Dairy farmers who AI their cows and heifers and have low calf mortality, have more than enough genetically superior replacement females to maintain herd size. For example, a 100 cow herd with a 12 month calving interval, 10 percent calf loss and 100 percent AI of cows and heifers has 45 replacements available each year, but only needs 30 replacements (30 percent culling). This dairy farmer is in a position where he or she can select which replacements will enter the herd and reap additional income by selling the remaining heifers. The other option would be to add the extra heifers to the herd allowing the dairy farmer to cull low producers or problem cows they would have put up with otherwise or to increase herd size.

## **Higher Conception Rate**

Breeding heifers AI is also advantageous because the conception rate for heifers is higher than cows. Conception rate influences semen value so the higher conception experienced with heifers makes semen placed into heifers an even better buy than semen placed into cows.

## **Calving Ease**

Calving problems (dystocia) with first calf heifers have always been a valid concern of dairymen, particularly Holstein breeders. Calving difficulty is costly in death of calves as well as losses due to health care expense, decreased milk production and increased days open. Many dairy farmers have bred heifers to British breed beef bulls to cut down on difficult first births. This is not a good management practice.

Calving ease information is available on AI Holstein sires and can be utilized to make good decisions when deciding what sires to use on heifers. Dairy farmers can now have the best of both worlds -- superior genetics and predictably fewer problems when calving first calf heifers.

The National Association of Animal Breeders Dairy Sire Summary for Calving Ease lists the Percentage of Difficult First Births in Heifers – abbreviated %DBH. The %DBH, commonly referred to as the calving ease score, estimates the proportion of births that would be scored 4 or 5 (4 = considerable force needed and 5 = extreme difficulty). The average % DBH is usually 9 to 9.5. Calving ease scores can be used to identify sires which absolutely should not be used on heifers as well as those that should.

## **Estrus-Synchronization**

Estrus-synchronization facilitates the use of AI with heifers – enough said.