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## Increasing of efficiency of artificial insemination in beef cattle

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### Abstract

The efficiency of artificial insemination in beef cattle to important factors to identify, separate study was conducted prior to the study, in addition to inseminate cream. In accessory was used to increase sperm number. D after insemination, 60 embryos was assessed in addition to Inseminate cream accessory had no effect on sperm number in other studies. Cry-preserved a marked bull semen (a semi flattened anterior head of spermatozoa) competitively a deep uterine insemination to determine the effect of an unmarked Bull (traditional sperm head shape) with accessory sperm from semen was matched on the number forty embryos were recovered after conception observed ratio of 6 different sperm and accessory: The imperceptible uterine body marked in semen and uterine Horn, and 72: 28 62: 38 unmarked. Uterine Horn and mark cum in uterus in the body ( $P < .05$ ). The third study, super ovulated cows fertilization conditions and accessory sperm on artificial insemination to determine the effect of the time used.

**Keywords:** artificial insemination, beef cattle's, embryos, semens, uterine insemination, Fertilization

### 1. Introduction

Artificial insemination, in the early 1900's two Russian scientists developed this bull high genetic merit for everyone available allows with. It is widely used in the dairy industry. worldwide, are the most heavily used in cattle breeding techniques Artificial insemination (AI). Semen selection and increase milk production in the AI almost 100 kg/year, can result in 1991, 44 million cows first service AI worldwide and more than 12 million units of dairy semen domestically with an additional 8.7 million units in 1997, were sold (NAAB, unpublished) received sold for export in 1997.82307 uterine flushes of cattle, 456, 258transferable (Tiber, 1998) resulted in the recovery of the embryo. Fetus was 360656 (the total number of transferred 168373 fresh and 192,283 frozen-thawed) (Tiber, 1998). Europe and North America in 1997, all bovine embryo collection and transfer activity accounted for 70% of milk production and reproductive performance is the single most important factor determining the profitability of dairy animals are the second major cause reproductive impairment. In milk production in dairy herd culling is optimal for milk production and reproductive efficiency Beef cattle, dairy 13.5 to 12 month intervals should calve. To achieve this goal, within days of calving dairy cattle nearly 100 must conceive it to many producers can be a difficult task because the service first.

Conception rates (all in an earlier period divided by the total number of cows to get pregnant The first is the number of services in the same period) in lactating cows rarely exceeds 50%. While many factors contribute to low conception rates including heat detection accuracy of personnel, is the site of semen handling, congestion, and conception, time, many producers have lost enthusiasm for AI. Flock sizes without being put on to raise new employees as, Moreover, Many growers mistakenly save labor costs in time and money and have chosen to use herd bulls. Hunter and Grave enthusiasm for AI to AI research findings, to promote increased success can be rekindled that follows the continuity of the protection of animal health and genetic progress of argues.

To maximize productive life, after a cow calving 80 should be born within 90 daysmean gap recorded in this study over long calving the first service (199.1 days) was to explore the estrus and breeding animals during periods of estrus for farmers ' failure may be caused by factors as management.

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Since most of the cows in the region in a big way primarily on the meat and draught, suckling, are raised with the purpose to factors such as nutrition and postpartum periods of long season can be attributed to anoestrous. Other factors, such as the management of farms and housing also suppress any manifestation of estrus in cows will be charged.

## 2. Aims and Objectives

Beef cattle egto improve beef cow fertility to improve milk production by improving conception rate. The main objective is similar to the artificial insemination of superior genetics. Standards in their operations by purchasing a herd sire yet costs down allows producers on a cost you want. In cattle artificial insemination (AI) to provide an overview of the process for handling and proper thawing frozen semen to get an understanding of the methods the proposed long term goal to increase fertility in cattle is to develop methods.

## 3. Advantages

1. Genetic improvement through achieved AI.
2. Use the wide dissemination and availability of genetically superior sires can breed Bull 1 500,000 cows in a lifetime.
3. After death, semen can be used. The oldest frozen semen 40-45 years old rapid proof of Mr Tests with natural mating characteristics desired offspring only examines 100 offspring would pass.
4. Sires available anywhere in the world.
5. Removed the threat of the Bull (male).
6. Decrease in disease
7. Crossbreeding
8. Mr. can try without buying
9. Very good sire since expanding cost of semen
10. To maintain low cost Mr. as many as all the females do not need to breed.
11. Frozen semen can be stored and used long after the donor or honor the dead is also a wounded unable to honor naturally reproduction that allows for the use of the semen.
12. Estrous synchronization, unsynchronized animals compared to 21 days from 3 to 7 days over a period of breeding cow's process allows for more efficient use.

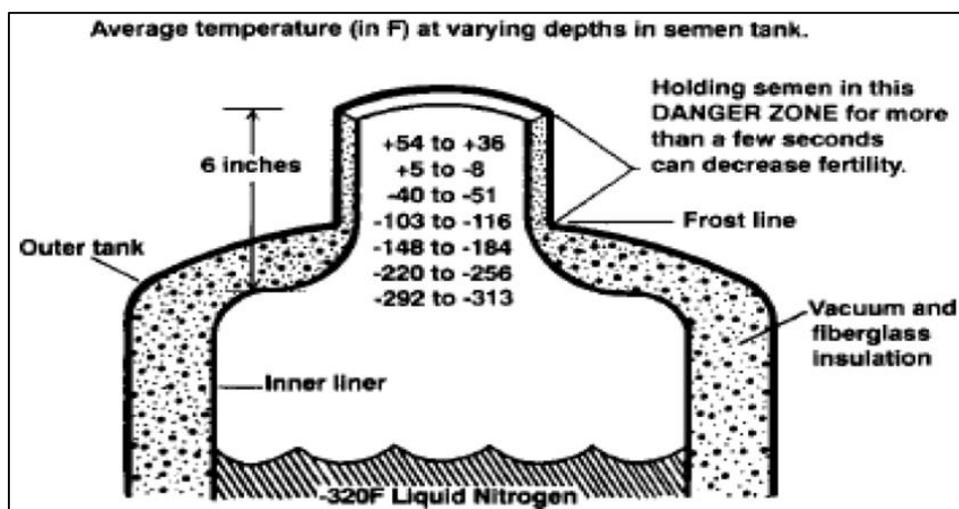
## 4. Disadvantages

1. Most economic on the semen for \$ 5.00 \$ . 15, 00 per unit is less expensive than the popular bull semen, however, can be expensive and often more than \$ 25.00 per unit. Ai. other additional costs associated with labor item detection, an experienced AI technicians, and medication costs required for item synchronization is required. On average, synchronized and a cow conception for \$ 15 to \$ 20 spent between
2. Management skills to effectively implement an AI program are required.
3. Facilities that are required to allow the proper restraint of cattle so that cattle can be inseminated. Adequate physical facilities and nutritional resources even when cattle AI being over a period of time a large number of cattle are required to handle.
4. Item detection should be good.
5. Require trained inseminator.
6. Best bull semen, not as well as other species.
7. Use the poor male may increase if not thoroughly tested
8. To sustain cold or frozen semen to contain difficult technology.

## 5. Methodology

Thawing semen and loading the gun a AI

1. AI gun East hot shower and make sure that the thaw 95 ° f. Will be inseminated with semen 2) cow he had to match up with the breeding records.
2. A straw of semen liquid nitrogen tanks to move as quickly as possible to thaw.
3. 0.5 ml straws 95 ° F or 0.25 French (37 ° C) for 30-40 seconds are thawed. Sunlight to minimize the risk of straw Semen in water bath 15 minutes time > don't leave for an extended period.
4. If you don't use it, don't try to refreeze semen. Throw it away!! Note: conducting further semen tank neck, over temperature (Figure 1) and heat shock and increase the risk of having to destroy the semen up a canister or any longer than 10 seconds AI tank neck do not hold the cane of semen if you do, a short period of time to immerse in nitrogen semen. There is a frost line where a large change in temperature indicates that is in the neck of the tank and you try and keep a cane down from semen straws removal.

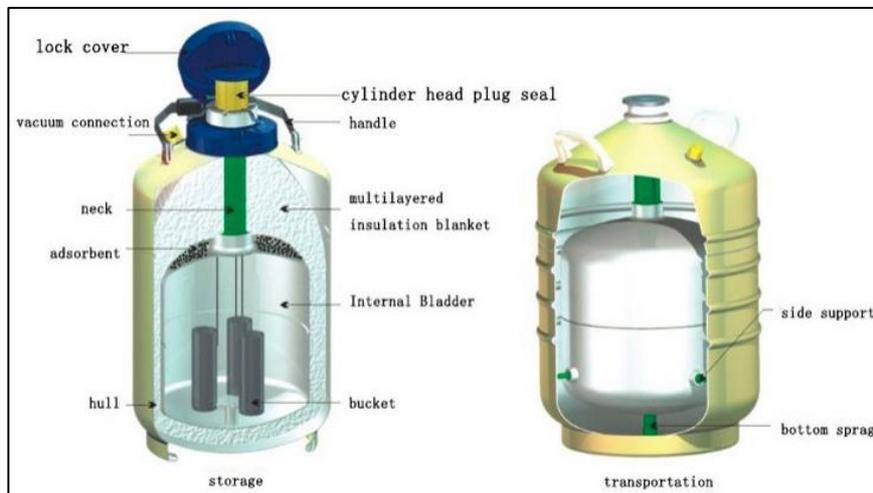


**Fig 1:** Example of the temperature gradient in the neck of a semen tank. Notice that the temperature gets warmer farther up the neck of the tank.

**In the typical farm semen tank, dangerous temperatures exist in the upper half of the neck tube**

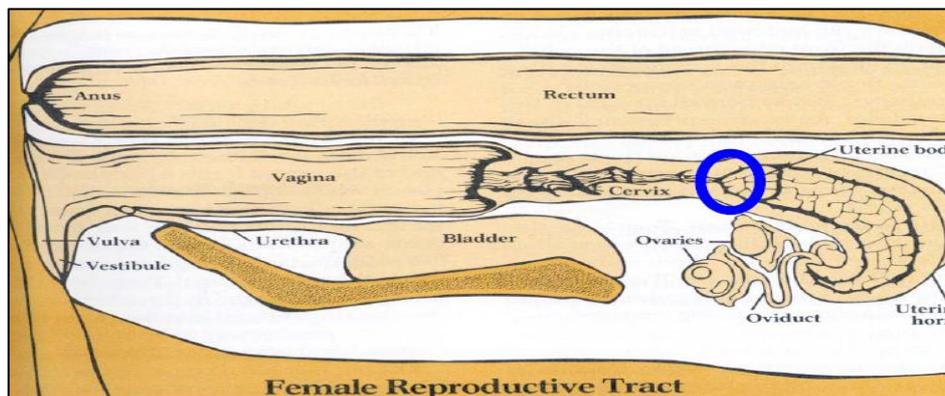
Location in neckube	Range in Temperature (Fahrenheit)
Top	+36 <sup>0</sup> to +54 <sup>0</sup>
Inch from top	+5 <sup>0</sup> t to -8 <sup>0</sup>
Inches from top	-40 <sup>0</sup> to -50 <sup>0</sup>
Inches from top	-103 <sup>0</sup> to -116 <sup>0</sup>
Inches from top	-148 <sup>0</sup> to -184 <sup>0</sup>
Inches from top	-220 <sup>0</sup> to -256 <sup>0</sup>
Inches from top	-929 <sup>0</sup> to -313 <sup>0</sup>

The upper half of the neck tube is the critical danger zone Adapted from Saacke 1978, Proc. On AI Beef Cattle



**Store only the amount of semen needed for six months**

- wipe all water from straw); Check the name of bull on the straw that's right (Unlike the cotton plug) crimped end either scissors or a cutter with cite-clip.
- Place the straw in a prewar med sterile sheath AI gun and a gun is more space than straw Rectally by palpating the cervix conception process through the rectum and this conception gun, ready to receive.
- Wipe away any fecal material or brad on secretion from using a clean paper towel. Place to avoid the opening of urethra AI pointed with gunpoint up a slight angle into the vagina on the gun.
- AI with the gun, and traverse right cervical/uterine cervix junction, (Figure 2) on the tip of the semen deposit. Semen slowly (5 sec) deposit.



**Fig 2:** Anatomy of the female reproductive tract indicating the target location (Depicted by the circle where semen is deposited during AL. Also described in figure below.

**Straw of semen**

- Information recognizes the semen.
- Bull breed (one), AI Centre code (1), Bull AI ID within the Centre (100)
- Sir name and breed Association registration number.
- Collection date/freeze code: tells you when the Bulls had collected, processed, and frozen.
- Penis sperm cells either packaged as male or female.
- CSS (certified semen services) if straw abbreviation, it means semen under very strict hygiene guidelines of

CSS was processed that are usually exported semen is processed in accordance with the guidelines of the CSS.

**The concentration of sperm cells in the semen of a straw**

The concentration of sperm in the factors that a straw semen quality, effects, which usually survives the freezing and thawing process based on how are semen is dictated by the bull breeds, adaptation., factors involved and the time of year the bulls collected. Dairy bulls usually freeze better than beef bulls. Average number of sperm cells/straw: straw 20-40 million sperm per. Survive the Thawing process

percentage of sperm is between 30 and 80%, depending on the factors listed above that. Good AI studs are usually less than 30% survival rate thaw will not release a post that semen. The average number of live sperm cells/insemination dose: 5-10 million living sperm/straw. If the straws of semen sex desire are almost 2 million sperm cells. Additionally, only 30% of sperm to survive thawing cold & process therefore, most companies that selected sperm recommended that only Virgin heifer's yearling on estrous cycling used gender to sell.

### Conception period

Breeding twice a day (AM/PM rules)

After 8-12 hours in estrus were observed standing breed was observed if the PM was celebrated in the evening heat race.

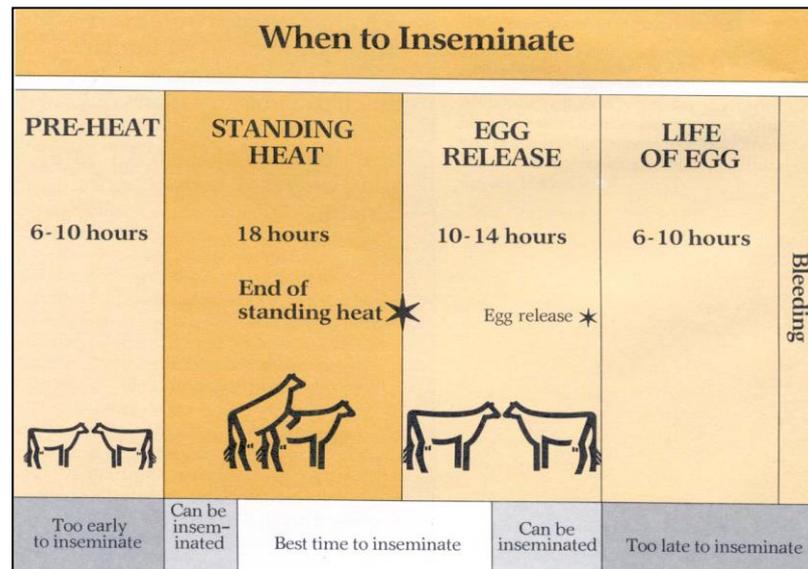
If, following am breed. Breed breeding: once a day in the AM. Heat check x 2 days after the start of 0-24 HR item with fertility. Psycho physiological assessment of key factors.

### Standing itemized period about 8-16 hours.

After the start of Ovulation item is 24-30 hours.

Sperm life span of 16 to 24 hours.

Before it is able to be capacitated sperm fertilization therefore, sperm capacitating ovulation of oocyte to be on time with need. For that reason, which is about 15 hours before ovulation item, about 12 hours after the beginning of conception? Oocyte is the life span of 6 to 10 hours.



**Fig 3:** Schematic that displays the timeline of the best time to inseminate cattle after an observed oestrus to achieve maximum pregnancy rates.

### 6. Conclusion

Beef cows inseminated in lower reproductive efficiency studies, long interval calving to first appear as AI and farm management (livestock husbandry, housing arrangements and the purpose of the AI) cow (season, BCS and type of oestrus), less paint-related factors, and AI technician (level of education and type of work) influenced the results. Progesterone treatment using CIDR + Estradiol benzoate item behavior driven effectively in suckling cows is, but a high proportion of them failed to ovulate. An ovulation during the dry season of events was determined by RIA technology profiles ovarian progesterone activity and had a high correlation with the results of AI, and increase the efficiency of AI Bulls with can be used to make genetic merit raises are available to everyone the possibility of performing in the bull calves to sell. Option value added markets. Percent of the embryo fertilization rate with accessory sperm in side-by-side accessory 24 h after the start of the inseminated item recovered from the animals with the highest percentage of sperm increased with embryonic.

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