

Effectiveness of artificial insemination in beef cattle



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Initial Research Report Understanding Why Artificial Insemination in Beef Cattle is a Smart and Effective Tool

Understanding Why Artificial Insemination in Beef Cattle is a Smart and Effective Tool

Artificial insemination is the process of collecting semen from a bull (male bovine) and impregnating a cow or heifer (female bovine) with the sperm cells (Taponen, 2009). This process has been around for a little over thirty years, making it still fairly new and uncharted territory for many beef cattle ranchers (Lamb, Dahlen, Larson, Marquezini, & Stevenson, 2010). Majority of the dairy cow industry uses artificial insemination, but beef cattle ranchers are still holding onto the past and live cover impregnation. The process of artificial insemination is more effective, cheaper, and puts less stress on the bull and cow/heifer.

When using artificial insemination, semen from bulls housed across the world can be bought and shipped directly to your ranch and then put in your freezer to use when needed. Many ranchers will buy semen from a bull in bulk and use the semen over an entire breeding season. The ability to breed your females to any bull on the market and being able to pick out characteristics that your females may lack but this one bull may have, may increase profit margins greatly, “ I can’t guarantee better calves from AI, but if you do a good job of selecting semen, you will get a bull proven for such things as calving ease, growth, maternal traits, and carcass traits,” (Johnston, 2016). However, if you have the money to house and maintain a

prized, well-known bull, you could be the one selling his semen for a profit, while also impregnating your females with his semen.

Why Artificial Insemination Is More Effective Than Live Cover

When using the practice of artificial insemination, ranchers are able to time the impregnation to when the cow/heifer is in heat (Bó & Baruselli, 2014). Heat is the term used when a female cow is going through estrous, and ready to accept a bull. The detection of heat means ranchers know when to pull the cow/heifers from pasture and inseminate them. However, with new technology, estrous synchronization protocols have allowed ranchers to inseminate at a predetermined time, while still achieving the same pregnancy rates as heat detection (Artificial insemination in beef cattle, 2019). When breeding the natural way through live cover, a bull is put in a pasture with one female or multiple females who the rancher believes is in heat. The rancher then hopes for the best and that the female(s) allow the bull to breed her. The rancher will then wait and do a pregnancy check on all the females that should be bred. With artificial insemination, there is no question as to whether the female received semen, the only variable is whether her body accepted the semen and she became pregnant. This shows how artificial insemination is highly effective, as each female is guaranteed to be bred.

Why Artificial Insemination Is More Cost Friendly Than Owning and Managing A Bull And Using Live Cover

When looking at the price difference between artificial insemination and live cover, many ranchers focus on how many straws of semen they have <https://assignbuster.com/effectiveness-of-artificial-insemination-in-beef-cattle/>

to buy and the grand total of the semen. What they do not realize is how much money and labor is required to maintain and care for a bull on their ranch. There is an ownership fee, a maintenance fee, and a risk fee every year that costs these ranchers over \$7, 000, just to breed their females to one specific bull every year (Parish & Riley, 2016). With artificial insemination, the average price of a straw of semen is \$25, along with labor and manpower required to pull the females and impregnate them. A ranch running one bull would have to artificially inseminate almost 300 females to make a profit off of the bull. Most ranches that would be breeding that many heifers will be owning and maintaining more than one bull, therefore, decreasing their profit margins to start out with. However, when using the process of artificial insemination, these ranches that are running 300 or more head of females can eliminate their bull fees and replace them with fees for straws of semen, averaging about \$7, 000 to impregnate all their females. Artificial insemination also allows ranchers to breed their females in a shorter amount of time. Females will be brought in from pasture in groups of around 75, allowing the breeding process to be done in around 4 days. When practicing live cover, the bull will be put into one pasture with females for multiple days, and then moved to another pasture to breed to the next round of females (Johnston, 2016).

Risks of live cover versus artificial insemination

Artificial insemination takes away many of the risks that come with live cover. When artificially inseminating, the female is in a machine, called a squeeze chute, which makes them much more clam, rather than if they are out in a pasture under the stress of a bull. The squeeze chute works with <https://assignbuster.com/effectiveness-of-artificial-insemination-in-beef-cattle/>

levers that close certain parts of the chute at certain times. When the female enters the chute, the person running the chute will first close the hind gate, cutting the other cows off and securing them out of the shoot. Almost immediately after, the head gate will close around the neck of the female, securing the female in the chute. Next the sides of the chute are pressed close to the female, allowing her to feel comfortable. The rancher and his help then inseminate the female, which takes around 20-40 seconds depending on how skilled the help is. After the female is inseminated, she is released into a pasture with the other inseminated females, where she will stay until the rancher brings them all back to pregnancy check them. The females that are not pregnant get put in a separate pasture and will be inseminated again or sent to slaughter. Those who are pregnant will be put together and watched until they calve.

When females are used for live cover, they are not protected by a chute or help. The bull will mount them, and if the female is willing, he will breed her. Many times, the bulls are much bigger than the females, especially young heifers, causing injury.

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