

Final Report-Cows Come Home

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Executive Summary:

Our project is about finding a way for farmers to cut time in half when looking for calving cows. The way we thought to fix it was with a tracker. This tracker will help farmers and ranchers find the calving cows faster. Without this tracker it would go back to the old days and driving long hours around a pasture.

My team and I conducted interviews and did research about cows and how hard it is to find the expecting female cows. This is because when they go to give birth, they most likely will go and hide their calves and take care of them by their self. By a cow doing this it makes it very hard to find all of the calves and if the farmers or ranchers can't find them then the calves could possibly get sick or die.

We hope to prove that a tracking system will save time and money for the farmers and ranchers and will help livestock owners take better care of their animals. My team member and I have conducted this experiment and program to prove a point and method to make life easier for farmers and ranchers. Being a Farmer or Rancher is already a difficult job or lifestyle. They don't need to worry about driving around for hours looking for sick or calving cattle. This is why we decided to pick this topic to work on.

Problem Statement:

Raising cows and young livestock is a way of raising money for the farmers and ranchers around the Great Plains. It's their way of survival and money making.

Presently, farmers and ranchers take lots of time to go out and look for the calving cow. Money is wasted and time is limited to finding the cow before it is lost forever. Time is valuable to a farmer and rancher that is serious about the herd, but cares about it more than anything else.

We are trying to prove that with the help of a tracker, the time taken by farmers without it, will be cut in half. Quick and easy finding without driving all over and wasting the valuable time needed to assist the livestock in labor.

Some farmers and ranchers have lots of pastures and fields to go to and check out everything to see if there are any weird things happening. With the tracker, the farmer or rancher will be able to drive to the spot with the calving cow in no time flat.

The tracker will be the size of a jump drive and range from 3 to 4 miles. The tracker could be embedded directly into the ear or on an ear tag.

Method- Computer Model:

Our computer model will show the following:

The map shows pasture with terrains that represents the pasture, low spots, and brush. The pasture is indicated as light green colored, the low spot is indicated as tan, and the brush is dark green. The brush and low spot shows the possible hiding spots the expecting mom will go to calve. There is a watering hole for the cows to go to all the time, indicated as blue.

Agents include the pickup and cattle. The pickup will drive to the watering hole first to count. If not all cows are there, the pickup will go to the brush, if nothing there, the pickup will go to the low spot to search. The cow will flash red if it will give birth. The truck will drive to the cow to assist if needed and the cow will turn brown again.

In the middle of map, there is a road for the pickup to drive on. The road is like a road seen today, (tan). The pickup will drive on road until the watering hole and will stop to count the herd.

The cow will turn red to indicate that it is giving birth and may have problems. After the farmer or rancher helps the cow, the cow will turn brown again.

The map will indicate the tracker in progress. Proving that this tracker will save time. The truck will go to the cow in red first, after assisting cow will turn brown, if there is another one, it will flash red and then turn brown again after assistance.

There will be a graph that will show how many cows have calved. It will keep count, depending on what the slider is set on. The slider controls herd-size. This is known as the population of the herd.

The truck will be able to drive around to show the farmer or rancher searching for any calving cows.

The cows will be behaving normally by grazing before showing signs of giving birth.

The program will be showing how much time it takes for the farmer to find the calving cow every day without the tracker. With the tracker, the truck will be going to the red cows saving time. Without the tracker, the truck will go to all the spots shown on the program taking a lot of time before finding the calving cow.

Verification and Validation:

Our theory helped the farmer and rancher locate their calving cows. The idea of the tracker has shown a lot of improvement during our experiment.

Conclusion and Results

This device will greatly impact the time management problems farmers and ranchers have. Cows will be saved, money saved, and crisis avoided. We tested different trackers and came to one that we thought was going to work.

The tracker will be the size of a flash drive. The range will be an area of 3 to 4 miles. The best place to put the tracker is either in the ear directly or on an ear tag.

Our program shows the possible hiding spots an expecting cow will go to. Low spots and bushes are common hiding places for the cow to be on its own away from the other cows in the herd.

The program also shows the farmer going to the watering hole to check the herd. If the herd is missing one, the farmer will go to the hiding spots. If there is a cow there, it will go red if it is going to give birth. After assistance, it will go back to brown.

We researched everything that a farmer already knew about. The rate a cow gives birth, pre-calving, possible complications, health side effects, etc.

Significant Achievement:

We think that the best place to put the tracker will be to put it either in the ear or on an ear tag. Both will work but there are some cons to doing these.

Putting the tracker on an ear tag will be less expensive, but the cow might lose the ear tag and tracker. Also, putting the tag in the ear requires tools that some farmers or ranchers may not have on hand.

Putting the tracker in the ear directly is costly. The cow might get an infection or any health issue. But the cow wouldn't lose the tracker. You have to also consider the facts of possibly losing the cow if there are complications due to the results.

These are suitable places to put the tracker. The size is good for the tracker. The range works and what the tracker will measure will help greatly.

Citations and Acknowledgements:

Our citations include:

Personal Interview: Logan Potts – DVM, Clovis Vet Hospital. Fall 2018.

Personal Interview: Kelly Powell – Livestock Producer, Grady, NM. Fall 2018.

Book: Beef Production. T.L. Hodsworth. 1972. Elsevier Ltd.

Internet research: www.thecattlesite.com. Jack C. Whittier. February 2007. University of Missouri.

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Bobbi Kunde.

We hope that this product will one day help our farmers and ranchers. The tracker will benefit in many ways. Cutting time in half will be a significant impact. Many cows will be saved and money too. Thank you for taking the time to read about our project.

