SenseHub

Beef Herd Monitoring Improves Estrus Detection and Saves Time

MERCK Animal Health

Allflex® Livestock Intelligence®

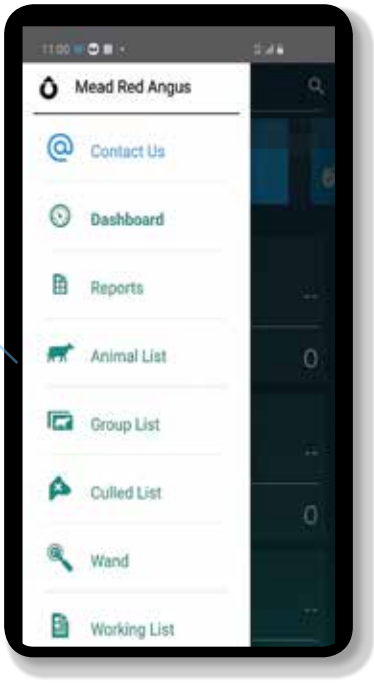
Monitor Heifers and Cows 24/7 with SenseHub Beef

Allflex Livestock Intelligence systems monitor millions of animals worldwide. Our solutions collect and analyze critical data to help producers take on the challenges of modern livestock management.

By monitoring heifers and cows coming into estrus, producers can assess intensity of natural or induced heats, make timely breeding decisions and help manage cow replacement rates.

Track onset of estrus for natural, AI and ET breeding programs

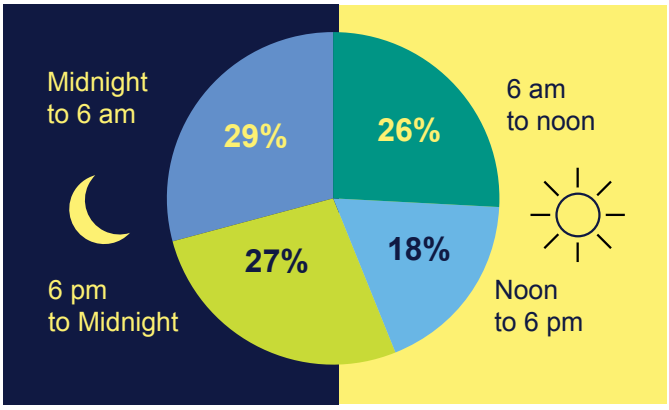
- From Allflex Livestock Intelligence, the world leader in monitoring solutions for cattle
- Backed by an unmatched team of experts who customize solutions for each customer
- Get heat alerts on your phone to detect onset of estrus and ideal breeding window
- Detect more heats and boost reproductive rates
- Schedule breeding and rebreeding plus use inputs more efficiently
- Accelerate herd fertility gains
- Uncover subtle signs of sickness or stress that impact normal cow behavior



Why Is Estrus Detection Vital to Managed Reproduction?

In work at Colorado State University,[1] animals were synchronized and monitored for standing estrus by visual observation. By day 5 after estrus synchronization, 95% of animals monitored 24 hours a day were detected in standing estrus while only 56% of animals observed twice a day for 30 minutes were detected. (SenseHub Beef was not included in the study.)

When are cows in standing estrus?



Observing over 500 animals in three separate studies showed that 56% of cows initiated standing estrus from 6 p.m. to 6 a.m.

	Twice-per-day visual observation		24-hour-per-day estrus monitoring by visual observation		
Estrus detection	56%		95%		
	Effect of estrus detection rate on increasing pregnancy rate				
Estrus detection rate (%)	55	65	75	85	95
Conception rate (%)	70	70	70	70	70
Pregnancy rate (%)	39	46	53	60	67

24/7 monitoring program can help improve pregnancy rates.

Key question: What gains are possible with a 95% estrus detection rate?

Check out the Allflex pregnancy calculator at www.sensehubbeef.com.

[1] G.A. Perry, "Detection of Standing Estrus in Cattle" (2004), Fact Sheets, Paper 101.

Installing SenseHub Beef – Count on Allflex Before and After the Sale

Based on years of expertise with monitoring technology, Allflex field support and technical specialists work with producers to map the best SenseHub Beef setup for their operations.

They will use available aerial maps to specify:

- Power supplies and office internet access
- Primary and secondary breeding pastures
- A site plan that integrates with preferred breeding practices
- A detailed cost estimate with all options specified and mapped

Visit SenseHubBeef.com to get in touch. Get started with the world leader in Livestock monitoring technology.

Put SenseHub Beef to Work 24/7 – To Better Manage Fertility Rates

Invest in Females with the Best Potential

Cows and heifers that conceive earlier also calve earlier, have longer rebreeding intervals and wean heavier feeder calves.[1]

- A 13-year Nebraska study[2] compared heifers born in the first, second or third 21-day period of a typical calving season.
- The earlier they were born, the greater the percentage of heifers cycling at the beginning of their breeding season (70%, 58%, and 39%, respectively).
- 45-day pregnancy rates were lowest for heifers born in the third calving period (90%, 86%, and 78%, respectively).
- Heifer calves born during the first 21 days had greater weaning, pre-breeding and pre-calving bodyweight; greater percent cycling before breeding; and greater pregnancy rates compared with heifers born in the third calving period.
- First-calf progeny from early calving heifers also had earlier birth dates and higher weaning weights. The steer calves born earlier in the calving season had lower birth weights, plus higher weaning weights, hot carcass weights and marbling scores.

Window into Stayability – Early Calving Heifers Last Longer in the Herd

Longevity and lifetime productivity also have major impact on cow-calf assets.[3]

- Longevity data were collected on 2,195 heifers from South Dakota Integrated Resource Management groups. Longevity and weaning weight data also were collected on 16,549 heifers at the U.S. Meat Animal Research Center (USMARC).
- Average longevity for South Dakota heifers that calved in the first or later period was 5.1 and 3.9 years, respectively. Average longevity for USMARC heifers that calved in the first, second, or third 21-day calving period was 8.2, 7.6, and 7.2 years, respectively.
- Heifers that calved early in the calving season with their first calf had increased longevity and pounds weaned compared with heifers that calved later.

[1] R. A. Cushman, L. K. Kill, R. N. Funston, E. M. Mousel, G. A. Perry, "Heifer Calving Date Positively Influences Calf Weaning Weights Through Six Parturitions," Journal of Animal Science, Volume 91, Issue 9, September 2013.

[2] R. A. Funston, J. A. Musgrave, T. L. Meyer, D.M. Larson, "Effect of Calving Distribution on Beef Cattle Progeny Performance," Journal of Animal Science, Volume 90, Issue 13, August 2012.

[3] Cushman, "Heifer Calving Date," Journal of Animal Science, Volume 91, Issue 9, September 2013.

Seedstock Revenue Increased from Higher Conception Rates in Bull Production

Scenario: An Angus seedstock program installs SenseHub Beef to increase bull-calf crop value while saving time on heat detection.

Executing the plan:

1. All cows are tagged with SenseHub Beef to pinpoint the onset of estrus. Pregnancy increased from 62% to 71%, increasing the inventory of AI-bred bulls for sale.
2. More cows were bred per AI group, with a labor savings of 4 to 6 hours per AI group. Calving window was reduced 10 to 14 days.
3. More animals sold at a higher average sale price increased revenue S35,000. (Based on real sale results adapted to 100-cow herd example.)

	Year 1	Year 2
AI Pregnancies (%)	62	71
Ave Bull sale price-AI bred	$3,150	$3,375
Ave Bull sale price-bull bred	$1,600	$1,786

Year 1 Sale Results		
AI Animal (Head)	62	$195,300
Natural Service (Head)	35	$ 56,000
		$251,300

Year 2 Sale Results		
AI Animal (Head)	71	$239,625
Natural Service (Head)	26	$ 46,436
		$286,061

Shorter Calving Intervals Among Replacement Heifers Produces More Pounds Weaned

Scenario: A 200-cow commercial operation with a 20% cow replacement rate aims to detect early cycling lightweight heifers and increase first-cycle pregnancy rates. The goal is to wean more pounds per exposed replacement heifer.

Executing the plan:

1. By using SenseHub Beef to identify true estrus among lightweight heifers, these females can be moved into an earlier breeding group and bred a month sooner than normal.
2. Using a pregnancy rate expected from 24-hour monitoring, 61 heifers would be successfully bred and result in 18 more first-cycle calves than twice-per-day heat observation.
3. The early bred heifers would produce 2,376 more pounds of beef weaned with an estimated $48 per head advantage.

	Twice-Per-Day Observation	24-Hour Per Day Observation
Annual culling%	20%	20%
Heifers retained	60	60
Mature BW (lbs.)	1200	1200
Heifers (55% BW) identified in true estrus	23	28
Heifers (65% BW) identified in true estrus	26	31
Relative labor cost ($/head)	$28.68	$7.33
Calves from heifers bred at 55% BW	20	24
Calves from heifers bred at 65% BW	23	27
Weaned pounds from retained heifers	17,774	20,150
Market price ($/lb.)	$150	$150
Value of calves from retained heifers ($/head)	$415.67	$463.83

Lowering Cow Replacement Rates with Planned Breeding and Herd Improvement

Using Estrus Detection to Speed Genetic Gain and Lower Cow Replacement Costs

	20% Cow Replacement Rate	15% Cow Replacement Rate
Replacement Needed	40	30
Replacement Cost	$20,000	$15,000
Calf Sales ($150 cwt/95% calf crop)	$136,800	$145,350

	Twice-Per-Day Observation	24-Hour Per Day Observation
Top 30% of cow genetics	66 head	66 head
Estrus detection rate	56%	95%
AI Conception Rate	70%	70%
AI Pregnancy Rate	39%	67%
AI Heifers from Top Cows	26	44
Heifers from Bull-Bred Crop	174	156

Scenario: A 200-cow commercial operation that uses high carcass-merit bulls aims to use AI on its best cows and produce replacement heifers with improved fertility. The goal is to reduce cow replacement rates from 20% to 15%.

Executing the plan:

1. SenseHub Beef confirms early cycling and quality heats in females, helping identify the top 30% of dams and heifers. They are AI-bred with sexed semen from elite genetics for fertility.
2. Continuous monitoring would produce an expected 67% pregnancy rate, resulting in 44 AI replacement heifers. (A twice-a-day heat inspection would produce 20 AI heifers, requiring that 20 more heifers be chosen from bull-bred calves.)
3. Monitoring doubled of the rate of genetic gain towards the goal of 15% cow replacement, which would save $5,000 in heifer development and increase calf sales by $9,000. Cow longevity also would increase.

Real Results in Real Time. Real People Tell Their SenseHub Success Stories

“We know exactly the onset of estrus and breeding window. This saves 4 to 6 hours per AI group, which frees time to manage breeding and calf health. Our conception rates increased 8% in the first year and were 5% above average in the last two years. We are doing bigger AI groups, which reduced our first-cycle calving window by 10 to 14 days.”

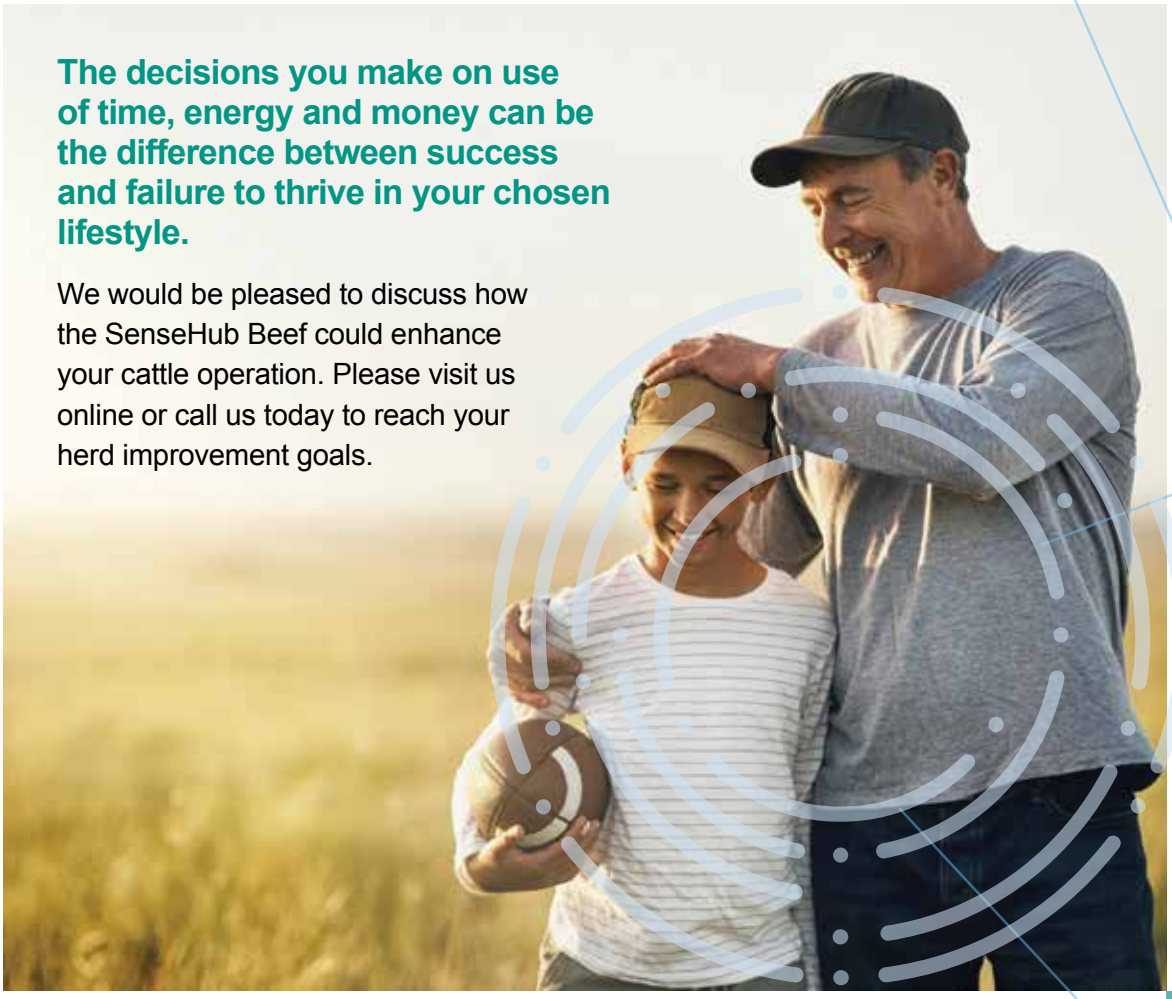
Reiss and Heather Bruning, Bruning Farms, Nebraska

Monitoring Health-Related Behavior Changes

Producers using SenseHub Beef note that the system gives them insights on otherwise subtle changes in herd status. From predation to other disturbances, from the influences of weather to changes in available grazing – as producers learn the nuances of the SenseHub Beef system, they gain new insights into the life of their herd, and the life of their operation.

- More and more, labor is a challenge on operations large and small
- SenseHub Beef frees more time for family and enjoying the rural lifestyle
- Monitoring cows from afar allows you to do other jobs

SenseHub Beef — A More Convenient Way to Live Your Chosen Lifestyle



The decisions you make on use of time, energy and money can be the difference between success and failure to thrive in your chosen lifestyle.

We would be pleased to discuss how the SenseHub Beef could enhance your cattle operation. Please visit us online or call us today to reach your herd improvement goals.

SenseHub

Get in touch today by visiting sensehubbeef.com

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