

Cows and the art of sexting

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Sensors implanted in cattle can help send text messages to farmers to indicate when the animals are in heat, writes John Tagliabue.



I just called to say ... Christian Oesch with one of his cows, which wears an Anemon device on its neck. *Photo: The New York Times*

When Swiss farmer Christian Oesch was a boy on his family's hog farm, mobiles were a thing of the future. Now, Oesch tends a herd of dairy cattle and carries a smartphone wherever he goes. Occasionally he gets an SMS from one of his cows.

That is because Oesch, 60, who cares for a herd of 44 Red Holstein and Jersey dairy cows, is helping to test a device that implants sensors in cows to let farmers know when they are in heat. When that is the case, the device sends an SMS to the farmer's phone. The Swiss do not settle for half measures: the SMS can be in any one of Switzerland's three main languages - German, French and Italian - plus English or Spanish.

If there is anything to be learnt from this project, which will bring the devices to market early next year, it is that Heidi's world of goats - or cows - placidly grazing in Alpine meadows is gradually becoming the stuff of storybooks.

The electronic heat detector is the brainchild of several professors at a technical college in the nearby Swiss capital of Bern. It fills a market gap, they say, because dairy cows, under growing stress to produce larger quantities of milk, are showing fewer and fewer signs of heat. That makes it harder for Swiss farmers to use traditional visual inspections to know when to bring on the bull or, in about 80 per cent of the cases these days, the artificial inseminator.



The sensor implanted in the genitals of Fiona or Bella (favourite names for Swiss cows) measures body heat, then transmits the result to a sensor affixed to the cow's neck that measures body motion. (Cows in heat become restless.)

"The results are combined, using algorithms, and if the cow is in heat, an SMS is sent to the farmer," says Claude Briemann, a computer specialist who helped design the system. The detector on the cow's neck is equipped with a SIM card so the farmer can pay for the calls.

"Our recognition rate is about 90 per cent," Briemann says.

The device, known as a heat detector, raises concerns among animal rights advocates, not so much because of its intrusiveness in the private parts of the cow - its use involves inserting a thermometer with a tiny transmitter and antenna in the cow's genitals - but because of what it says about the stressful lives of Swiss cows. It also prompts scepticism among dairy farmers, who are startled by its cost, which is expected to be at least \$1400 per unit.

"Will it bring anything financially?" asks Ulrich Tschanz, 76, who raised Red Holsteins in the neighbouring town of Oberlindach, where the clanking of cow bells is everywhere, until he turned over his herd of 40 cows to his son some years ago. "Always keep an eye on your cows, keep an eye on them," he says. "That's the best."

But experts say measures taken to increase milk production - adding proteins, minerals and vitamins to their feed - upset the cows' metabolism, making the device increasingly necessary. "With greater productivity, there is a drop in reproductive activity," says Samuel Kohler, a veterinarian who is among the developers of the device and now serves on the board of the company, called Anemon, that hopes to sell it. "It happens fairly frequently that you miss the right moment."

Few people anywhere are as sensitive to animal rights as the Swiss, who have some of the toughest animal rights laws in the world. A comprehensive law enacted four years ago, for instance, obliges dog owners to take a course on the proper treatment of their pet and requires that certain animals deemed social, such as guinea pigs or canaries, have one or more companions in captivity. (Even the Swiss have their limits. In 2010, voters overwhelmingly rejected a proposed law that would have appointed free lawyers to represent animals in abuse cases.)

The managing director of the Swiss animal rights agency Tierschutz, Hansuli Huber, says the dignity of the cow was less of an issue with the new device. "There is a certain justification," he says. Yet he adds: "The real problem is the cows' not showing signs of heat, and this is linked with the demands made on cows to produce ever larger quantities of milk."

Moreover, he says, cows are also calving less frequently than in the past because of stress. "Now maybe they do so three times in their lifetime," he says. "While 20 or 30 years ago it used to be perhaps seven times."

Many Swiss accept this reasoning. "It's a shame that it's come to this," says Harri Hofer, 54, a security specialist, as he shops along Zollikofen's main street.

With global milk prices slumping, productivity is crucial for Swiss cows, whose owners are feeling the financial pinch. According to the government's Office for Agriculture in Bern, every year about 2 per cent of farms such as those around Zollikofen shut down, unable to compete with bigger, more efficient producers abroad.

Kohler says he does not expect significant opposition to the new device. "It's not cruelty to animals," he says. "The cows behave very normally. I don't see a problem."

Indeed, Oesch is very pleased with his results so far, despite some early problems. "The first attempts were not trouble free," he says. "The problem was with the sensors. They were not sturdy enough."

Occasionally, the device will send a false signal that a cow is in heat, he says. Other times, it fails to detect when one of the cows is in an amorous mood. This week, he says, he will begin testing newer, sturdier models.

Aside from the cow's love life, mistakes have a negative impact on a farmer's bottom line. Missing the right moment can cost Oesch, who uses artificial insemination, as much as 300 Swiss francs (\$310) in unused semen.



Even with such results, farmers such as Tschanz react soberly, especially given the steep purchase price of the device.

"Cost is important," says Martin Baumgartner, 33, who is the fourth generation in his family to tend cows here. Only about 20 of his herd of 100 are now milk cows, while the others are more profitable Simmental and Black Angus beef cows.

His neighbour Urs Konig, 48, who got out of the dairy business a few years ago to focus on hogs, is equally unromantic. "It's a cost-benefit question," he says.

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