Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 05, Issue: 04 (JULY-AUG, 2025)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

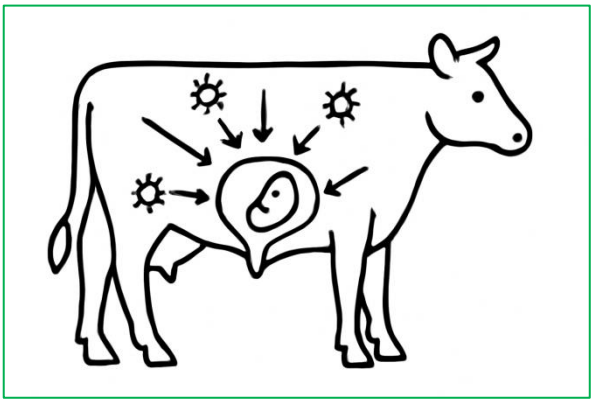
Why Healthy Cows Won't Conceive: Scientists Finally Have an Answer

*Arif Pandit, Sofi Imran, Rameez A Dar, Anees A Shah, Manzoor A Yatoo, Gowhar G Sheikh, Syed M Shah and Syed A Haq
Mountain Livestock Research Institute, SKUAST-Kashmir, India
*Corresponding Author's email: arif.pandit@skuastkashmir.ac.in

The mystery that's been costing dairy farmers millions has been solved—and it's not what anyone thought. Meet the most frustrating cow on any dairy farm. She looks perfect. She eats well. She acts normal. But no matter how many times you try to breed her, she just won't conceive. Farmers call these cows "repeat breeders," and they're everywhere. About 3 out of every 10 dairy cows have this problem. It costs farmers thousands of rupees per cow and has puzzled experts for decades. Everyone had theories. Maybe it was the feed. Maybe the timing was wrong. Maybe her hormones were off. They were all wrong. The real problem? Her own body is fighting against her pregnancy.

The Real Culprit

Here's what's really happening inside these cows. When they conceive, their immune system—the part that's supposed to protect them from germs—goes crazy. Instead of protecting the pregnancy, it attacks it. Think of it like this: You invite a friend to your house, but your security alarm keeps going off and calling the police. The friend gets scared and leaves. That's what happens to the baby calf—the dams's body kicks it out before anyone even knows it was there. Scientists at Sher e-Kashmir University of Agricultural Sciences and Technology of Kashmir are actively involved in figuring this out by looking at blood from cows. Half conceived easily. Half couldn't conceive no matter what. The blood told the whole story. The cows that couldn't conceive were missing something important. Every healthy body has special cells that act like guards. Their job is to keep the immune system calm when it needs to be. In normal cows, these guard cells say, "Hey, this pregnancy is okay. Don't attack it." But in problem cows, the guards are either gone or giving the wrong orders. Without these guards, chaos breaks out. The immune system treats the tiny calf like a dangerous invader and destroys it. This happens in the first two weeks, before anyone knows the cow was even pregnant.

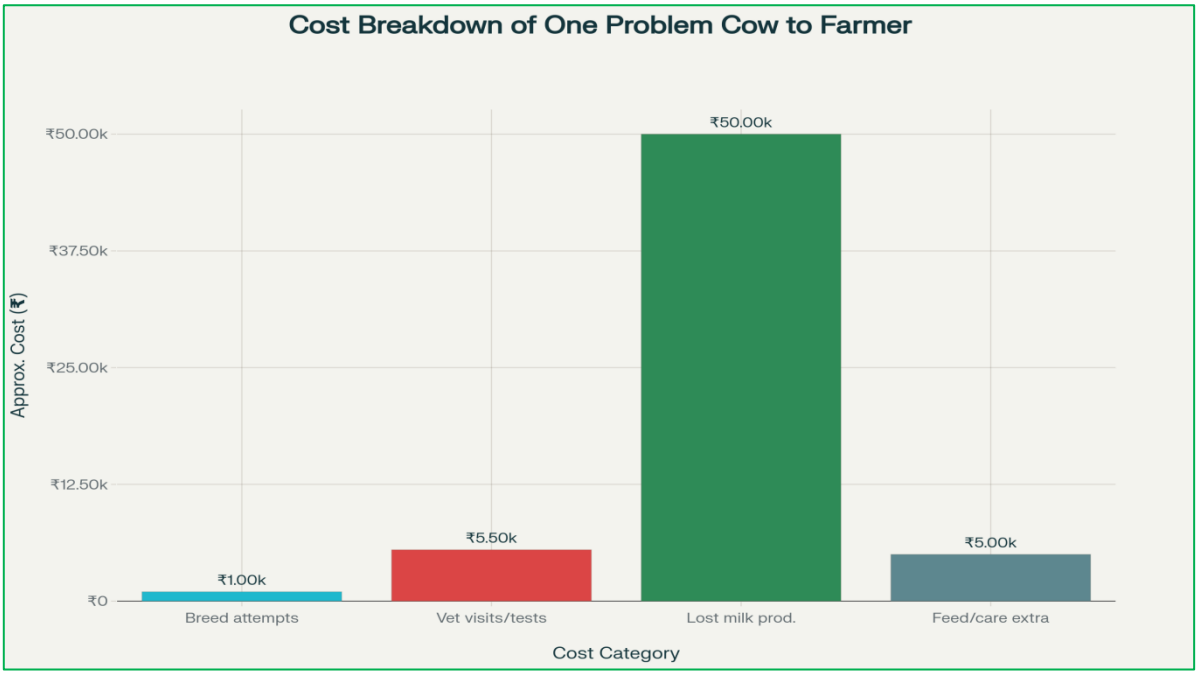


Bull's Role in the Problem

Here's the really surprising part. The bull matters too—even in artificial insemination. The scientists took immune cells from both types of cows and mixed them with different parts of bull semen. Some parts made the immune system calm down. Other parts made it go wild. It's like the bull's contribution is sending messages to the cow's immune system. In healthy cows, it's a good message. In problem cows, it's like adding gasoline to a fire. "I've been breeding cows for 20 years," says Abdul Samad, a dairy farmer from Kashmir. "I always knew some cows were just harder to settle. Now I finally understand why.

The Cost to Farmers

This isn't just a science story. It's about real money leaving farmers' pockets. One problem cow can cost a farmer ₹60,000 or more. Multiple breeding attempts cost ₹200 per AI straw, and farmers need 4-6 attempts, costing ₹800-1,200. Add veterinary visits at ₹3,000-8,000, lost milk production from delayed pregnancy at ₹50,000+, and extra feed during the extended breeding period at ₹5,000+. Multiply that by thousands of farms across India and worldwide, and you're talking about billions of rupees lost every year. But it's not just money. These cows suffer too. They go through breeding attempt after breeding attempt. Many eventually get sold for meat, even though there's nothing really wrong with them.



Hope on the Horizon

Now that scientists understand what's happening, they're actively working on solutions. The research team at the Mountain Livestock Research Institute, SKUAST-Kashmir, is studying whether they can help by changing what goes into artificial breeding. They're testing special proteins that might teach the cow's immune system to behave properly. Initial experiments are showing promise. If their research proves successful, farmers could soon have new ways to help these cows conceive. The team is also developing a simple blood test. This could let farmers test young cows and identify which ones might need special care before problems start. The scientists are currently planning larger studies with more cows across different farms. For the first time in decades, there's real hope that this age-old problem might be solvable. But the researchers emphasize that practical solutions are still being developed and tested. The researchers estimate that practical treatments could reach farmers within the next few years, depending on how well the ongoing studies progress. For millions of cows and thousands of farmers around the world, that timeline can't come soon enough. The research is being conducted at the Mountain Livestock Research Institute, SKUAST-Kashmir, in Jammu and Kashmir, India.