

Treat The Cow, Not The Herd: This Agtech Startup Wants To Prevent Overuse Of Antibiotics



Leah Rosenbaum Forbes Staff

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I'm the assistant editor for healthcare and science.



Joy Drach gives a presentation about Advanced Animal Diagnostics during the THRIVE Challenge at the ...

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Outside of Mad Cow disease, infectious disease outbreaks in livestock rarely make the news. Yet preventing and treating infectious diseases in livestock is a **multibillion-dollar** industry—in the United States, more than 70% of antibiotics are used on farms.

Enter Advanced Animal Diagnostics (AAD), a North Carolina-based startup that creates technology to detect diseases like mastitis, an inflammation of the breast tissue in cows,

allowing farmers to reduce the number of sick animals they need to treat and make sure that antibiotics are only used when necessary.

“We can not only save their lives, we can enhance productivity, and we can ensure the usefulness of precious antibiotics by targeting them just to the animals who need them,” says Joy Drach, president and CEO of AAD at the Forbes Indianapolis AgTech Summit. AAD was one of five companies that participated in a startup pitch challenge at the summit on Wednesday.

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AAD, which began working with cattle, began sharing trial results in 2017 of a device that can detect high white blood cell counts in cows by using just a few drops of blood. The test, which has yet to go to market, can inform farmers whether or not to give select cattle antibiotics, instead of giving medication to the whole pen. Now, says Drach, it's planning to bring similar technology to the poultry industry. AAD has raised \$42 million in funding, according to Pitchbook.

There are other companies in the livestock diagnostic space, including Precision Diagnostics, Zoetis and IDEXX Laboratories. These companies have a much wider range of tests compared to AAD, but mostly focus on veterinary care and pregnancy tests for cattle, goats and sheep. None has a specific test to look for the coccidiosis parasite in poultry, AAD's next venture. With AAD's technology, farmers take fecal fluid from chicks, put it onto a test slide and insert it into a device that can count the number of parasite eggs, if any, that are in the fluid. This allows farmers to target antibiotics only to the flocks that are infected with disease.

Though American antibiotic use in livestock has [fallen](#) in the past several years, experts including the [World Health Organization](#) are still concerned that overuse of antibiotics in animals can create dangerous treatment-resistant “superbugs” that could affect humans. According to the Centers for Disease Control & Prevention, [23,000 people](#) in the U.S. already die each year as a result of antibiotic-resistant bacteria.

But with increasing demands on food production, antibiotics shouldn't be taken away completely, Drach says. They should just not be used *en masse*. “We need solutions like ours that can target individual animals and understand if they need an antibiotic.” In addition, she says, early detection can help farmers catch potential infections at a stage

where non-antibiotic therapies may still help. And the same tech that counts white blood cells in cows could potentially help humans: [1.7 million](#) Americans each year suffer from deadly bloodstream sepsis, and AAD has done proof-of-concept studies that show their tech could one day be used for rapid diagnosis of sepsis in emergency rooms. “We just realized as we were doing this for animals that humans can’t even get the same standard of care,” she says.

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Leah Rosenbaum

I'm the assistant editor for healthcare and science at Forbes, focused mainly on biotech and the business of healthcare. I have a Master's in Journalism and a Master's ... **Read More**