FoodID and Antibiotic Testing: Fact Sheet

The Problem

We do not know enough about what is in our food. Those “No Antibiotics Ever” “Raised Without Antibiotics,” and “No Added Antibiotics” labels you see on meat and poultry packaging are based on producer assertions and are rarely – if ever validated through testing.

Excessive and improper use of antibiotics in livestock production is accelerating the development of antimicrobial resistance. Fully 70% of antibiotics used in the U.S. today are given to animals raised for food.[1] This widespread use of antibiotics in livestock is contributing to an increase in antibiotic-resistant superbugs, which has been identified by both the CDC and WHO as one of the biggest public health threats of our time According to the CDC, more than 2.8 million antibiotic-resistant infections occur in the U.S. each year, and up to 162,000 people die as a result.[2]

About FoodID

FoodID is a scientific food testing company working with forward-looking companies to enable food transparency and the authentication of brand label claims. The FoodID platform tests for the presence of antibiotics and other substances in meats, including beef, poultry, and pork. The platform is comprehensive – testing for 7 drug families representing 95% of the most common antibiotics and other adulterants administered via feed and water. It is rigorous – with sufficient sensitivity to detect even low levels of substances. All while working in near real-time – at the speed of modern livestock production.

We are ranchers, scientists, and technologists dedicated to building a future where everyone knows what’s in their food.

Testing Solutions

- FoodID has developed comprehensive and rigorous testing solutions for antibiotics and other adulterants.
- FoodID testing solutions are operational with beef, pork, and poultry—with plans to expand to other food types.
- Drug families identified, representing 95% of the most common antibiotics and other adulterants administered via feed and water:

  - Ractopamine (RAC)
  - Tylosin (TYL)
  - Penicillin (PEN)
  - Sulfamethazine (SMZ)
  - Sulfadimethoxine (SDM)
  - Tetracyclines (TET)
  - Monensin (MON)
  - Fluoroquinolones (FLU)

[1] Pew: https://www.pewtrusts.org/en/projects/antibiotic-resistance-project/antibiotic-use-in-food-animals
[2] NRDC: https://www.nrdc.org/sites/default/files/better-burgers-antibiotics-ib.pdf

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Benefits

- **Comprehensive**: Tests for 95% of the most common antibiotics and other adulterants administered via feed and water.
- **Rigorous:** 5-10x more sensitive than marketplace alternatives. Sufficient sensitivity to detect even low levels of substances.
- **Fast:** Results in near real-time plant line speeds
- **Affordable:** 100x more affordable than industry standard mass spectrometry.
- **Easy:** Samples can be tested simply at the source and are not required to be shipped offsite

Company Leadership

Our leaders bring diverse expertise from the fields of ranching, science, technology and food.

Kevin Lo, Chief Executive Officer
Technology leader. A veteran of Google and Facebook. Led Facebook's efforts to connect the billions not online and was GM and Co-Founder of Google Fiber. A founder of two software companies and a public telecom services company COO, Kevin has an AB from Harvard University.

Bill Niman, Co-founder
Rancher, author, and natural food pioneer. Founder of Niman Ranch, Inc. and BN Ranch, Bill's been called "a pioneer of the good meat movement" by the *NY Times*, the "Guru of Happy Cows" by the *LA Times*, and "the Steve Jobs of Meat" by *Men's Journal*.

Dan Denney, Co-founder
Stanford Ph.D. in microbiology and immunology. Founded Genitope Corporation, a public biotechnology company. Recipient of the prestigious Merck Fellowship for Global Health, Dan holds patents for work related to the cancer drug Interferon.

Joel Martin, Sr. Director Technical Operations
Animal Welfare authority for all segments of commercial beef, pork, chicken, and dairy production. A veteran of Chipotle.

Chuck Templeton, Board Member, Managing Director at S2G Ventures

STATE OF FOOD TESTING

Antibiotic resistance is a crisis—in the US and globally.

- More than 2.8M antibiotic-resistant infections occur each year in the US (CDC)
- "Superbugs" result in up to 162,000 deaths a year in the US (NRDC) and 700,000 deaths a year globally (WHO).
- "[a]ntibiotic resistance is one of the biggest public health challenges of our time." (CDC)
- Antimicrobial resistance is one of the world's top 10 public health threats (2019). (WHO)
- 40-50% of post-surgery bugs are already drug-resistant (The Lancet Infectious Diseases)
- "With AMR [antimicrobial resistance], we have a public health threat [that] could have as great, if not bigger an impact on our health, health systems and economically as Covid-19 (Financial Times)

Excessive and improper use of antibiotics in livestock production is accelerating the process of antimicrobial resistance.

- 70% of antibiotics used in the US are given to animals raised for food (Pew). It is estimated that 75-80% of all antibiotics globally are given to animals raised for food.
- U.S. beef industry consumes antibiotics 3 to 6 times more intensively (per kilogram of livestock) than many of its European counterparts (NRDC)
- 42 percent of all medically important antibiotics sold for use in U.S. livestock operations are for cattle (FDA).
- Antimicrobials are used in livestock production to suppress disease and boost productivity. Due to the conditions under which farmers rear animals in intensive agriculture, the use of antibiotics to maintain the health of livestock is widespread.
- These practices contribute to the spread of drug-resistant pathogens in both livestock and humans.
- AMR can be spread through both live animals and their meat —including touching or eating food contaminated with resistant germs. Chart.
- "Another worsening health crisis is staring us in the face, one caused by antibiotic-resistant infections. Without urgent action to stop the overuse of antibiotics, including by the U.S. beef (and pork) industry, it too is a crisis likely to claim more lives." (NRDC)

Improving antibiotic use in people and animals slows the threat of antimicrobial resistance and helps preserve the effectiveness of today's drugs and those yet to come.

Regulation in the US and globally:

- Since 2017, veterinary oversight has been required in the US for the use of medically important antibiotics in the feed and drinking water of food animals for treatment, control, or prevention of infection.

Currently, there is no single definition for "antibiotic-free" on food labels. This label is not approved by the USDA and has no clear meaning. (CDC)

There is a lack of testing to back antibiotic claims and to support regulation:

- Existing testing platforms for antibiotics in meat are expensive ($800-$1500/test), time-consuming, or nonexistent.
- The bulk of antibiotic-free meat validation comes from producer's statements or affidavits, not actual testing of the animals or meat.
    - USDA's planned 2019 testing for drug residue is ~700 Beef Cattle (out of 40 Million+), ~700 Young Chickens (out of 9 Billion+). ~700 Market Swine (out of 120 Million+).
    - Among the more than 9 billion animals that are slaughtered in the U.S. for meat each year, the USDA tests fewer than 7,000 for antibiotic residues (USDA)

- Testing is necessary throughout the supply chain to reduce the undesirable impacts of antibiotics and the safety of our food chain.

American consumers care about antimicrobial resistance and are demanding transparency when it comes to antibiotic claims.

- 67% of American say that it is important that the meat they purchase is Antibiotic-free (Zogby Poll)
- More than 77% of consumers want meat producers to "release independent verified data" to show that antibiotic-free claims are valid (Zogby Poll in Forbes)
- 75% of Americans are willing to pay more to have testing data verifying the antibiotic free label claim (Zogby Poll)

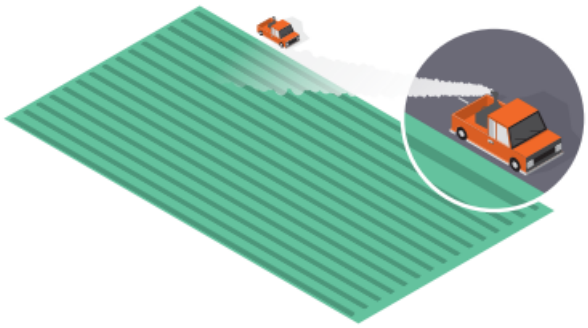
A COMPLEX WEB: EVERYTHING IS CONNECTED

Food, Farms, & Animals

Animals, like people, carry germs in their gut, including antibiotic-resistant germs. The U.S. food supply is among the safest in the world, but these germs can get into the food supply and people can get sick.

- When animals are slaughtered and processed for food, germs in the animal gut, including resistant germs, can contaminate meat or other animal products.
- People can get sick from eating or handling contaminated food or from contact with animals or their surroundings.

- Antibiotics save lives. However, any time antibiotics are used, the drugs can contribute to the development of antibiotic resistance.
- Animal waste (poop) can carry traces of previously consumed antibiotics and antibiotic-resistant germs. Sometimes animal waste is used as fertilizer on farms.
- Food, such as fruits and vegetables, can become contaminated through contact with soil or water containing waste from animals.



- Antibiotics and antifungals are sometimes applied as pesticides to manage crop disease. This may speed up the development and spread of resistant germs by contaminating surrounding soil and water.
- Stormwater and irrigation water from farmland can contaminate nearby lakes and rivers.

Source: https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf