



Healthy animals without antibiotics

Susanne Steghöfer | Bühler AG | 2018

Innovations for a better world.

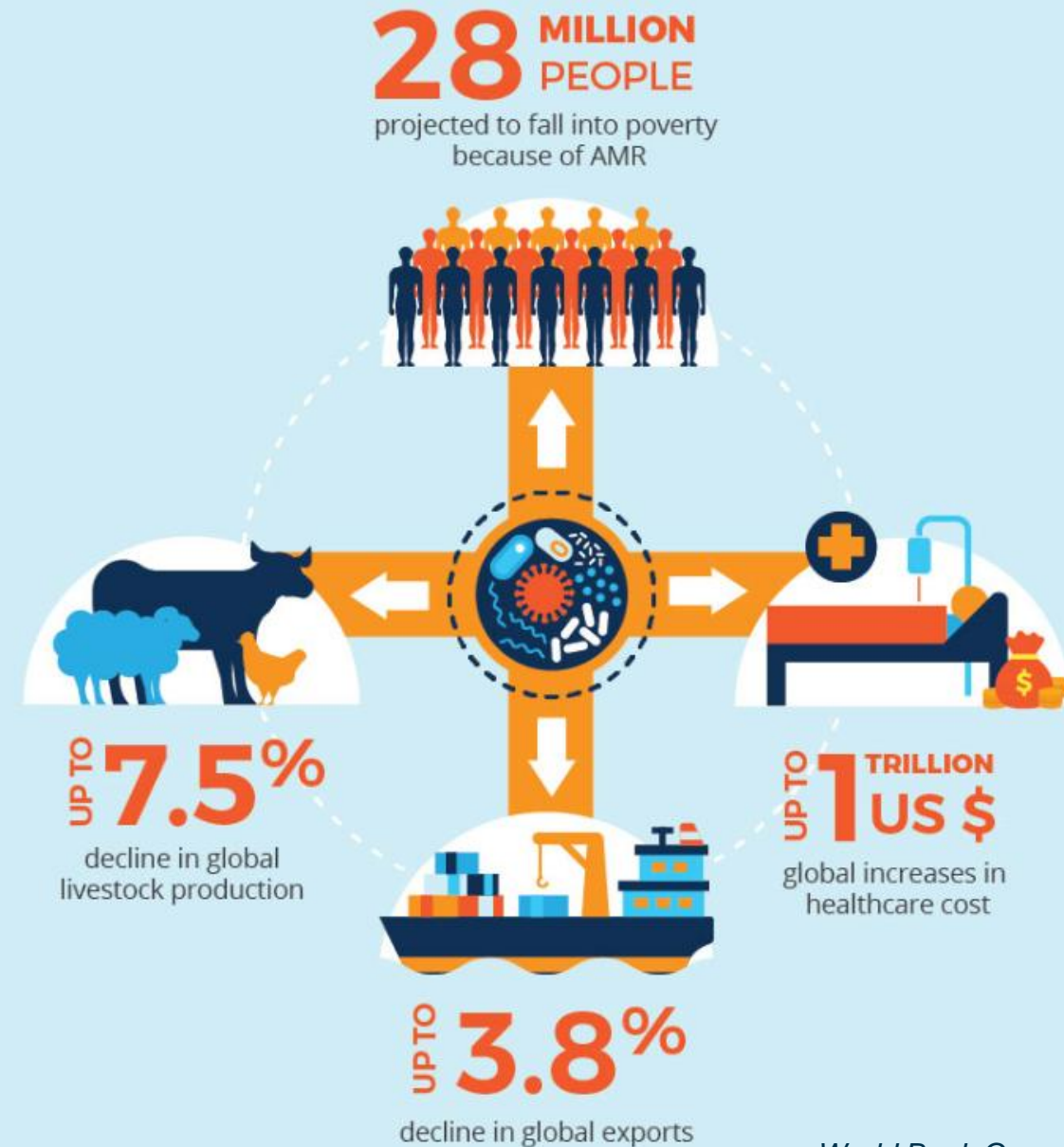


The biggest global threat: Antimicrobial resistance (AMR).

10 million deaths
in 2050

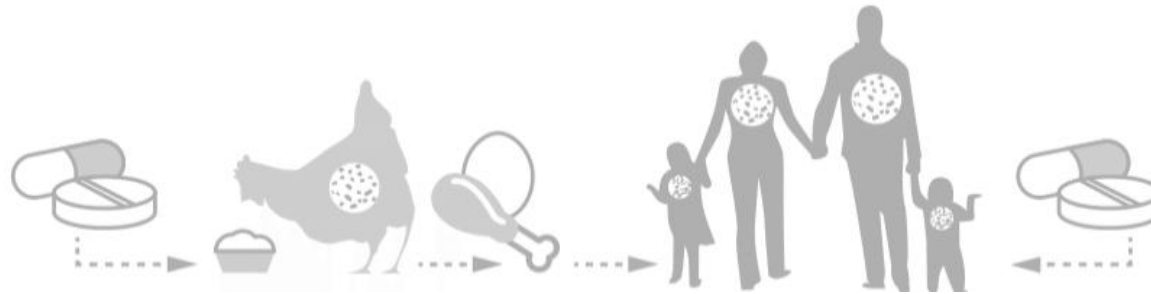
Highest mortality
in Asia and Africa

THE IMPACT OF AMR BY 2050 WOULD BE WIDE-RANGING



Overuse of antibiotics in livestock is at the origin of the AMR crisis.

2/3 of all antibiotics are used in animal production



Antibiotics fail to cure people infected with AMR bacteria

Selection and multiplication of antibiotic resistant bacteria (AMR)

Intense livestock farming as one main driver of the AMR crisis.



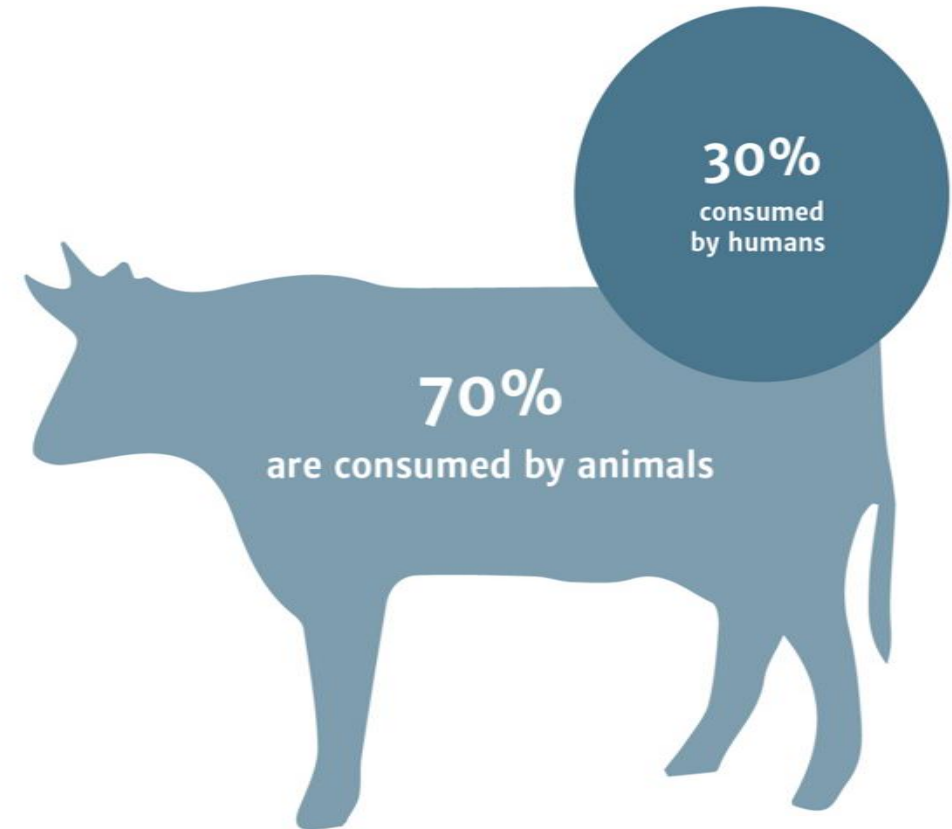
Growth promotor



Prophylaxis



Treatment



Review on Antimicrobial Resistance, 2014

It`s time for a change!

Antimicrobial resistance affects everybody!

- General acceptance that antibiotics have to be reduced in animal production
- Ban of antibiotics without any kind of compensation leads to increased use of medically prescribed antibiotics
- Increasing pressure from legislation, consumers and retailers

Alternatives are needed to reduce the use of antibiotics in livestock!

Companies offering antibiotic free meat in the US



How can we reduce
antibiotics in livestock?

Antibiotic reduction in livestock.

Who doesn't need antibiotics?



A healthy animal!

“You don’t want an alternative to antibiotics, you want to change the paradigm and change the way you feed and raise the birds”

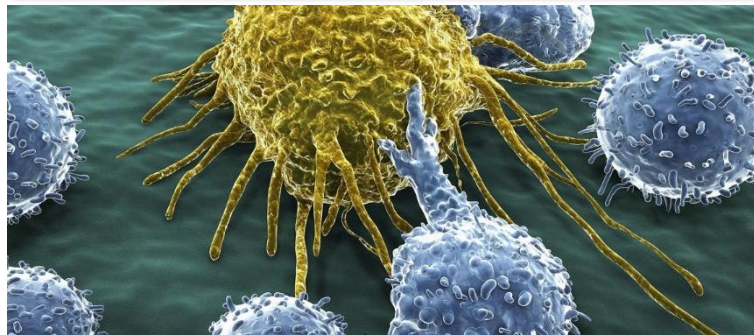
Dr. Stephen Collett, associate professor, College of Veterinary Medicine, University of Georgia

We need a multi target approach to increase animal health!

Prevention of disease introduction



Immune system stabilization



Improved animal welfare



Decreased occurrence of infections

Reduced need for antibiotics

Reduced occurrence of AMR

The role of nutrition in animal health.

Nutrients

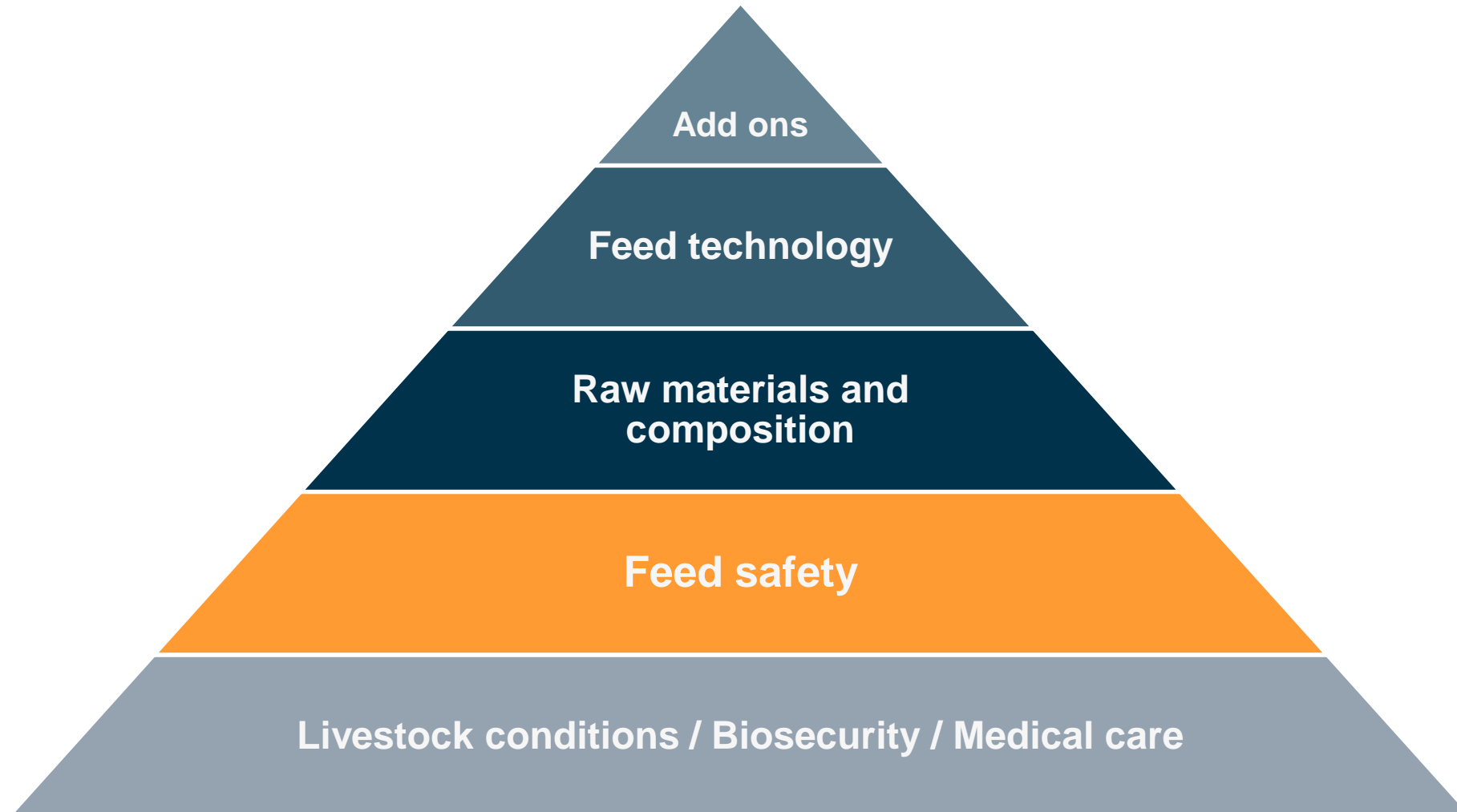
Digestibility

Feed intake

Safe feed



Feed safety: The basis for healthy animals.

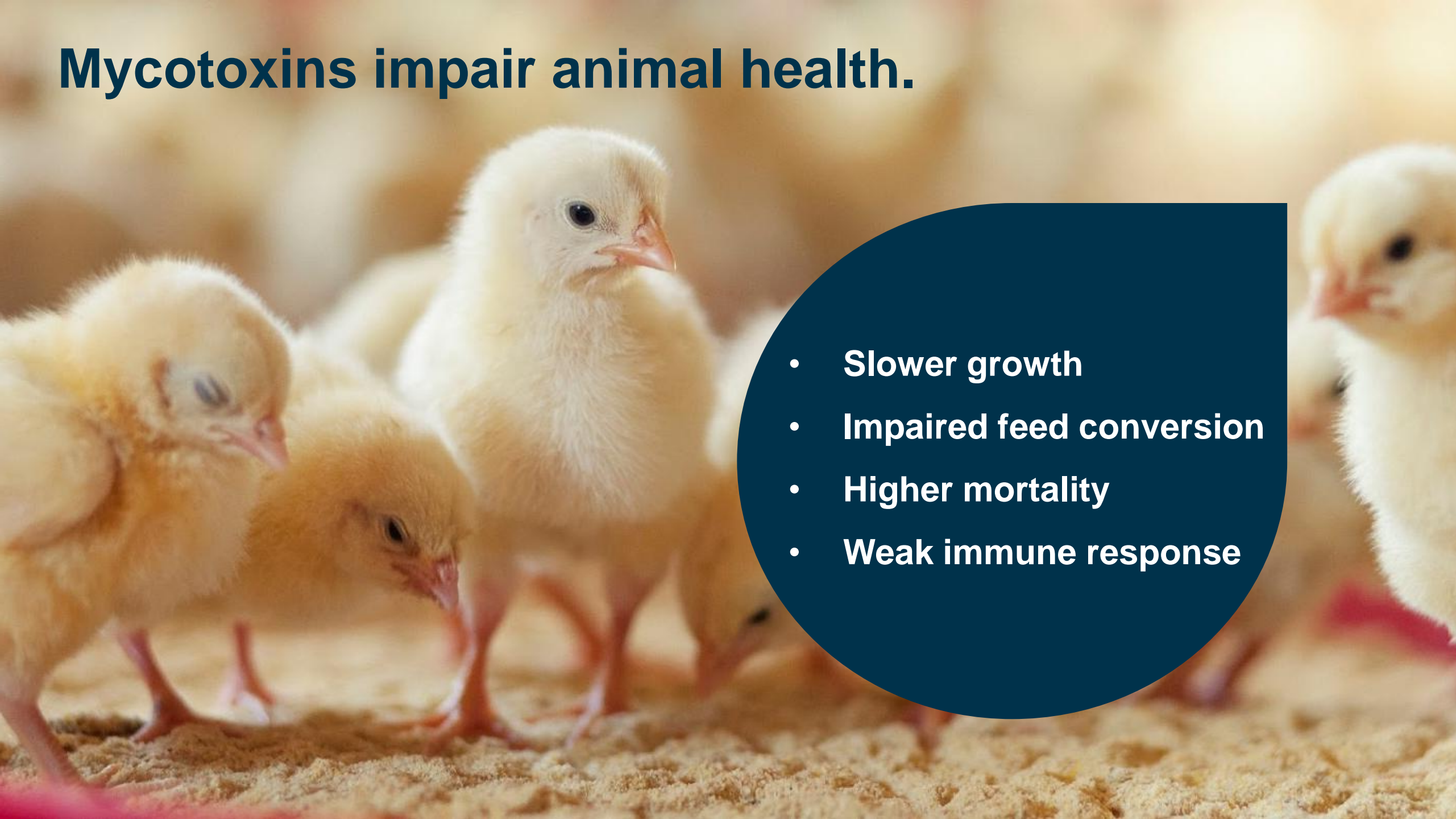


Main feed safety issues.

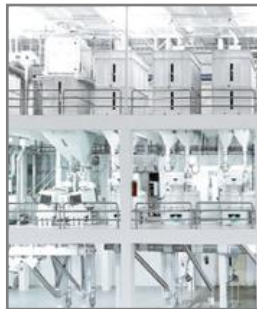
**Feed free of
harmful bacteria
and toxins that
compromise
animal health**



Mycotoxins impair animal health.

- 
- A photograph of several young yellow chicks on a sandy surface. A dark blue circular overlay is positioned on the right side of the image, containing a bulleted list of health impacts of mycotoxins. The chicks are fluffy and have orange beaks and feet. The background is slightly blurred, showing more chicks in the distance.
- **Slower growth**
 - **Impaired feed conversion**
 - **Higher mortality**
 - **Weak immune response**

Solutions to reduce mycotoxins in feed.



- Good agricultural practices

- Grain drying
- Grain cleaning

- Safe storage

- Grain cleaning
- Optical sorting

- Mycotoxin binders



The significance of *Salmonella* contaminations in feed.

Salmonella
infected
feed

Selection of
resistant
Salmonella
in infected
chicken

Introduction
of resistant
Salmonella
into the food
value chain

Non-
treatable
Salmonella
infection in
humans



Salmonella control by targeted processing.

Conditioning with steam

Temperature: 75-90°C

Product moisture: 12-19%

Pelleting



Retention time
30 s to 6 min



Feed safety solutions.

**Safeguard
raw material
quality**

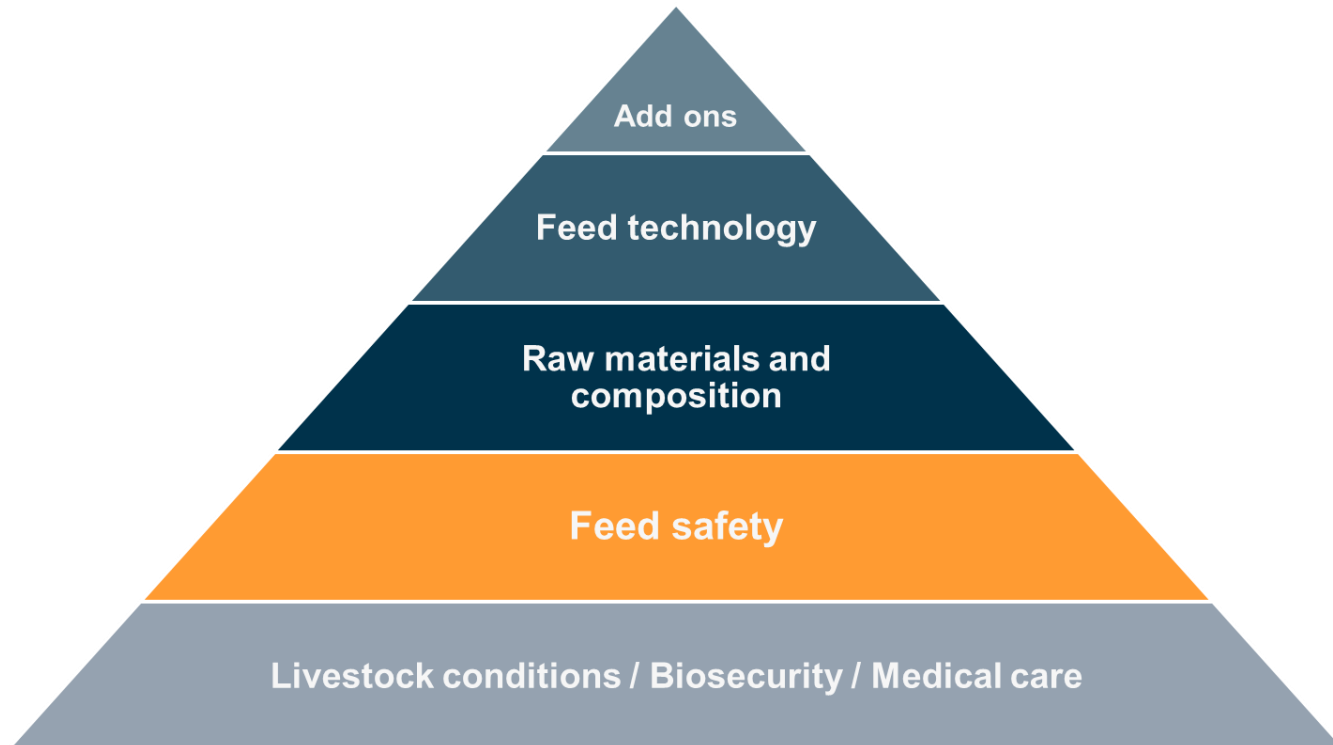
**Ensure
top hygiene**

**Implement
a validated
kill step**



Summary: Safe and nutritious feed.

What is the contribution of feed producers?



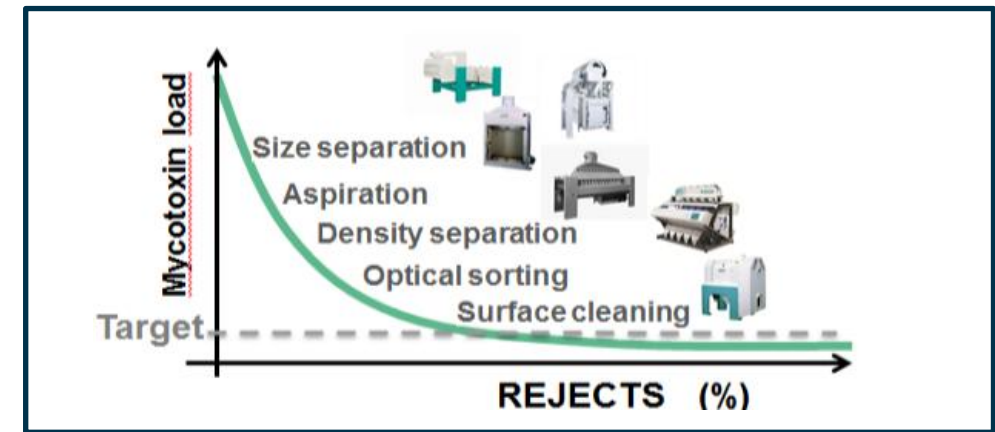
- **Absence of pathogenic bacteria**
- **Compliance with mycotoxin limits**
- **Balanced nutrient composition**
- **Appropriate physical structure**
- **Appropriate feed form**
- **Additives**

Bühler solutions to ensure safe and nutritious feed.

Hygienic design of plants and machines



Safeguarding the value of raw materials



Education and training

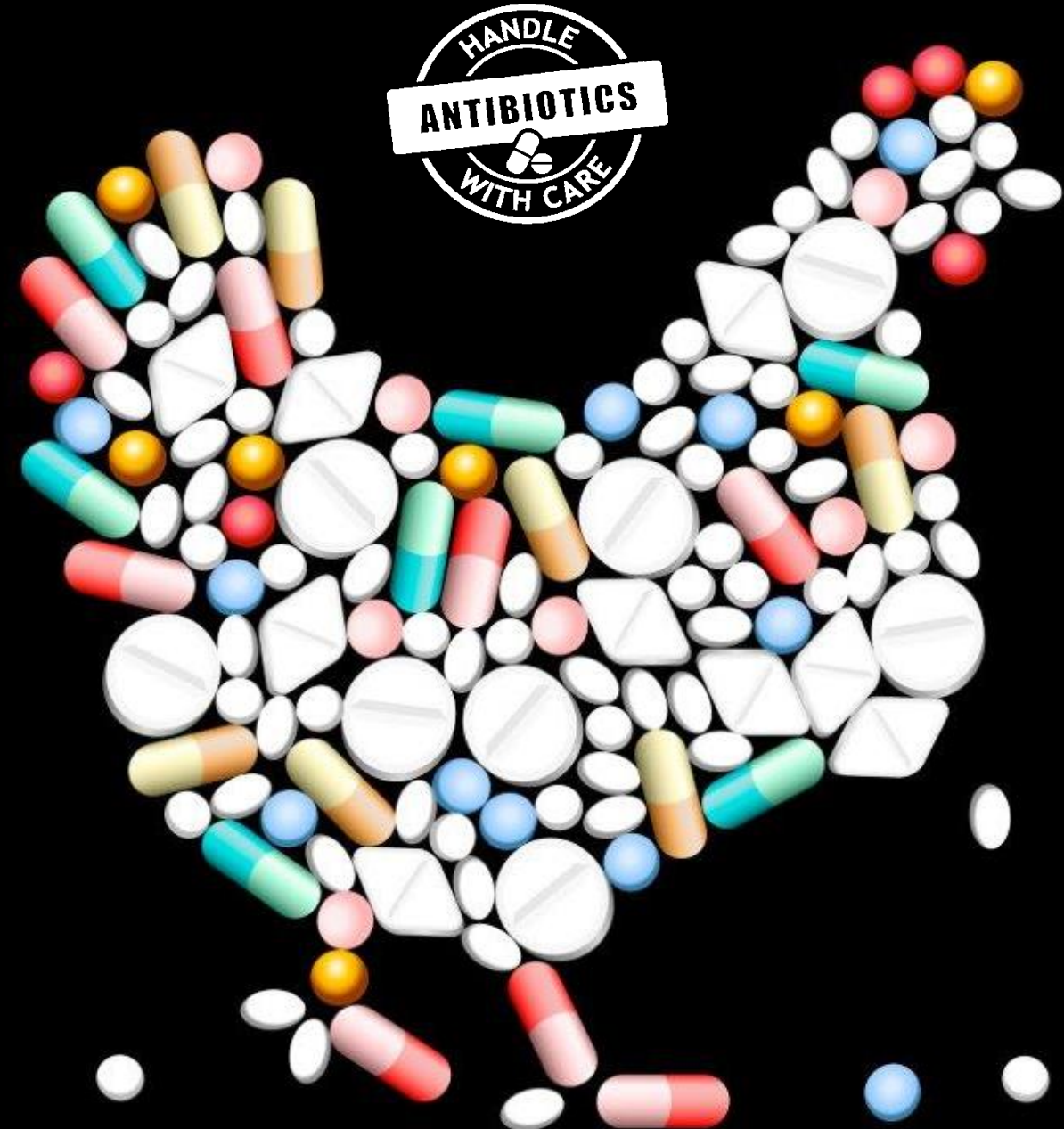


Inactivation & process monitoring solutions



How to reduce antibiotics.

- ✓ Provide safe feed for your animals!
- ✓ Maintain and clean your production process!
- ✓ Promote and apply good practices at all steps!
- ✓ Adopt sustainable systems with improved hygiene, biosecurity and low-stress animal handling!
- ✓ Only use antibiotics to control or treat infectious disease!
- ✓ Vaccinate animals to reduce the need for antibiotics!
- ✓ Rethink your own use of antibiotics!



Thank you for your attention!

Innovations for a better world.

