Technology's Future in Protein Production

John A. Scanga, Associate Senior Technical Consultant
Elanco Animal Health
@jascanga

June 16-19, 2013
AMSA 66th RMC – Meat Matters
Auburn University

Today’s Realities

- More people without nutritious food
- Global population increases
- Rising demand for dairy & meat proteins
- Environmental impact

OUR PLAYING FIELD

Global Population Increase
6.3 Million Monthly
Los Angeles + Chicago

TODAY 7 Billion
2050 9 Billion

meat, milk & eggs

Global Hunger

- Hunger is the #1 health problem in the developing world
- Lack of food kills more than war, AIDS, malaria and tuberculosis combined
- 25,000 deaths per day worldwide from hunger

Rising Demand for Animal Protein

- 3 billion people trying to move to middle class in emerging economies driving demand for meat, milk and eggs.

Sources:
2. World Food Programme. “Winning the War on Hunger.”

3 billion people trying to move to middle class in emerging economies driving demand for meat, milk and eggs.
"Food is the moral right of all who are born into this world."

Norman Borlaug

3 billion people live on US$2 per day
More than one-third of world’s poorest live on less than US$1 per day
Poorest nations spend 50% to 95% of income on food

Sources:

"Hidden hunger" in industrialized nations affects

1 in 5

"Hidden hunger," in industrialized nations affects

1 in 8

1 in 7

1 in 5

World population will require

In the year

2050

70%

70%

More food and

Of this food must come from efficiency-improving technology

Sources:

Food, Choice, Sustainability

Three Elements of a Solution

1. Innovation – need for innovation
2. Choice – need for choice
3. Globalization – need for trade
When farmers increase their productivity, nutrition is improved and hunger and poverty are reduced.

All lives have equal value...

-Innovation -- practices, products, genetics

Innovation... The vital ingredient to making safe, affordable and abundant food a reality

Sources: Gates Foundation January 2011 annual letter

Beef production & efficiency

Each pound of beef produced in the U.S. today requires

- 14% less water¹
- 34% less land¹
- Generates 20% less manure¹
- 18% smaller carbon footprint¹

Compared to 1977, beef production:

- Generates 20% less manure¹
- 18% smaller carbon footprint¹

The Benefits of Technology

U.S. agricultural output, inputs, and total factor productivity, 1948-2008

Index, 1948 = 1

250%+ Output

SameInput

How are Food Technologies Regulated?

U.S. Food & Drug Administration
• Center for Veterinary Medicine

U.S. Department of Agriculture
• Center for Veterinary Biologics

U.S. Environmental Protection Agency

Public Issues

Future of Agriculture Innovation

• Development – Think through the consumer and industry stakeholder lens
• Consider Societal Benefits and Animal Welfare - along with industry benefits
• Support Choice (Green ← → Traditional)
• Globalize –
  • Trade Standards (CODEX)
  • More approvals globally

Innovation – with balance

Going to All 6 Corners of the Debate

Technology equals Safe, Affordable and Abundant Food

1. Science
2. Economic
3. Environment
4. Moral
5. Consumer
6. Animal Well-being
3 Elements of a Solution

1. Innovation – need for innovation

2. Choice – need for choice

3. Globalization – need for trade
World Meat Exports
Estimated 30 Mt in 2020 (16% Increase in tonnage)

OECD-FAO Agricultural Outlook 2011 - © OECD 2011

Global Sanitary and Phytosanitary (SPS) Restrictions for US Meat Products

Precautionary Principle
The precept that action should not be taken if the consequences are uncertain and potentially dangerous

M. Peterson. 2007. European Molecular Biology Organization. 8(4)305-308

Food Security
Making safe, affordable and abundant food a reality

- We are the LEADERS of the...
- World’s biggest ISSUE during the...
- Most critical TIME in our history.

American Meat Science Association