Challenges and Benefits of
Health Data Recording in the Context of
Food Chaine Quality, Management and Breeding

a short statement

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The Major Challenge

World Population Development

World population growth over time, with key years and population milestones indicated.

- 1804: 1 Mrd.
- 1927: 2 Mrd.
- 1960: 3 Mrd.
- 1974: 4 Mrd.
- 1987: 5 Mrd.
- 2004: 7 Mrd.
- 2012: 7 Mrd.
- 2024: 8 Mrd.
- 2050: 9.2 Mrd.

The Major Challenge

Productive agricultural land
1950: ca. 5.000 m² per inhabitant
2020: ca. 2.000 m² per inhabitant

Pallauf 2002

The key to feeding a growing population without harming wildlife habitats is research in high yield farm technics and biotechnology

Dennis Avery 1996
The Major Challenge

„Further development of already high yielding agriculture“

Avery 1996
High Yielding Agriculture

- more complex production processes
  - using more modern technologies
  - using quality assurance programs
  - high yielding animals
  - high yielding humans
High Yielding Agriculture

• more complex production processes
  • using more modern technologies
  • using quality assurance programs
    • high yielding animals
    • high yielding humans
Information Processing

Agricultural data processing centre

Animal health data processing centre

Universities

Involved institutions and public authorities

Farmers and veterinarians

Mansfeld and Grunert 1990
High Yielding Agriculture

• more complex production process
• using more modern technologies
• using quality assurance programs
  • high yielding animals
  • high yielding humans
High yielding animals

Fricke 1998, VIT 2007
High yielding animals

Proportion of energy required for maintenance (EM) and for milk production (EP)

EM:EP ca. 1:3.5

Dairy cows are high performance athletes
Unser Bauer verdient am meisten, wenn wir gesund sind und lange leben.
High Yielding Agriculture

- more complex production process
- using more modern technologies
- using quality assurance programs
  - high yielding animals
  - high yielding humans

farmers and veterinarians
consultants and public authorities
dairy industries and breeding organisations
veterinary scientists / epidemiologists
High Yielding Agriculture

- more complex production process
- using more modern technologies
- using quality assurance programs
  - high yielding animals
  - high yielding humans
Food Chaine Quality

• product quality is a result of process quality

• Process quality is a result of information/data processing

• successful data processing is a result of using key indicators reflecting animal health and performance, hygiene, biosecurity and economic aspects
Food Chaine Quality

farm level

• product quality is a result of process quality
• Process quality is a result of information/data processing
• successful data processing is a result of using key indicators reflecting animal health and performance, hygiene, biosecurity and economic aspects
Food Chain Quality

Key indicators

- must be provided by research
- must be evidence based
- must be available for all partners involved
- must be used by all partners involved

Farm data

- must be available for research
- must be available for the veterinarian
Challenges for Researchers

• Epidemiological studies to get evidence based and practicable indicators for
  – risk of disease  
    (early warning systems, health monitoring)
  – animal welfare  
    (housing, environment, feeding)

• Studies to get further knowledge of genetical disposition for diseases  
  (genomic selection, breeding programs)
Challenges for Researchers

• Development of new management/therapy procedures based on data processing (drying off)

for all these challenges the availability of current and consistent data is a must 😊

for that a superior cooperation and a clear allocation of responsibilities are necessary
Thanks!
Quiz:

What does this dairy operate?

an automatic milking system