Challenges for health data recording from the perspectives of the different stakeholders

The point of view of the AI industry

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The context of breeding

• New society needs
  – More focus on health and fitness
  – More focus on environmental impact
  – Constraint human health / animal traits
The context of breeding

• New legislation in EU and outside
  – Animal Health Law
  – Animal Welfare Law

• International conferences
New era for breeding

• New tools
  – Genomic Selection
  – Sequencing

• New goals
  – Easy-going cows
  – Smart breeding
Challenges of health traits

• Low heritability
  – $h^2 < 0.2$ / Interaction with environment

• Complex traits
  – Immunity
  – Interaction with other functions
  – Long-term effects?
Challenges of health traits

• Different players for the record
  – Farmer’s organization
  – Vets
  – AI industry

• Difficult to collect
  – Variability in clinical signs
  – Indirect test (PCR, ELISA) : sensibility, specificity ?
  – Exhaustive data collection (healthy animal is a data to collect)
  – Use of models : « vaccine » challenges
Challenges of health traits

• Registration
  – Quality and simplicity of the system
  – Standardization

• Priorisation
  – Traits with economical impact
Challenges of health traits

• Some examples of new traits
  – Clinical Mastitis
  – Quality of the Hoof
  – Paratuberculosis
Conclusion

1950: AI Industry helped in the dramatic improvement of the health status of the herds

2013: AI industry focus breeding for healthy, easy-going and sustainable animals for dairy and beef farms