



New Directions and trends in Cattle breeding

Hielke Sportel | 08-04-22



Introduction

- **Hielke Sportel**
- **Farmers Son, Grew up in Zambia, Africa**
- **Work as an Area Manager for CRV in the Baltic States, Poland and Sub Sahara Africa**
- **CRV – Breeding Cooperative focussed on adding value for farmers by breeding for CRV Health and CRV Efficiency – Core business is bulls semen**

Context – Turbulent times with much to solve

- **Cost of Production, Margin and Profits**
- **Animal welfare and Calf destination**
- **Environmental impact and Circularity**
- **Zoonoses and Antibiotic resistance**

ITS ALL ABOUT MODERNIZING, ADAPTING AND BECOMING MORE EFFICIENT

Trubulance in the Dairy Sector – Rising Cost of production

- Feed Costs
- Electricity Costs
- Gas Costs
- Labour Costs
- Fuel Costs
- Farm input costs
- Pharamaceutical costs
- Management costs
- Technology costs
- ETC ETC



Cutting down on Farm Costs - Feed Efficiency

- Feeding costs are major part of cash flow – 50% of production cost
- Make the largest difference in cost reduction
- Are irreplaceable or unavoidable
- Fluctuations in quality are unacceptable
- CRV focusses on CRV efficiency – More milk from the same amount of feed

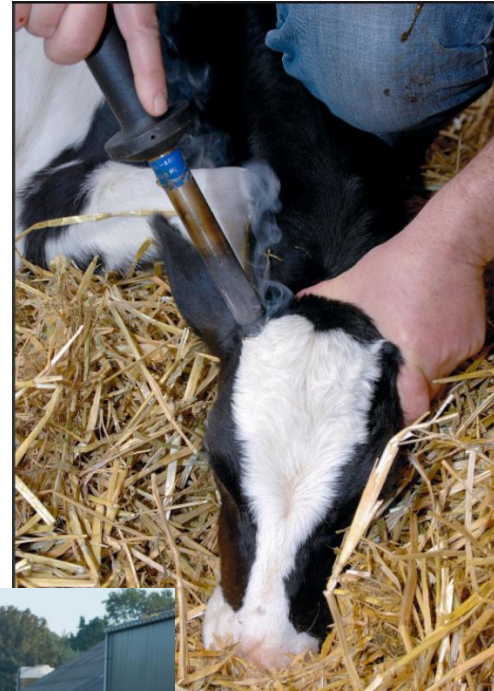
CRV



Feed Efficiency

Challenges in Dairy – Animal welfare

- Housing & Bedding – e.g. Tie Stall
- Dehorning of animals
- Longevity of animals on the farm
- Semi grazing or need to graze
- What about the beef cross calves?
- 2023 – German calves must stay on Farm for 28 days



What does CRV focus on for genetic solutions?

- **CRV Health focusses on improving the three main culling reason – Udder and Hoof health and Fertility**
- **Polled bulls for hornless animals**
- **Genomic Analysis to pick out horned animals – make more accurate breeding decisions**
- **Genetics suited to semi-grazing and grazing circumstances**
- **Beef on dairy solution**

Challenges in Dairy – Environmental

- **Methane production**
- **Nitrogen leaching**
- **Nature conservation**
- **Excessive use of hormones – infertility issues in the ecosystem**
- **Feed Efficiency**
- **Manure and fertilizer use**



4 ways to Reduce Methane

- Feed: studies on how feed and the rations thereof influence the emission of methane and ammonia
- Barn: studies on how adjustments to the barn, both of technical and managerial aspects, can help prevent methane and ammonia from forming
- Manure: studies on solutions in manure storage to prevent ammonia and methane from forming
- Animal: studies on the difference between animals' emissions based on genetics (nature) and animal management (nurture)

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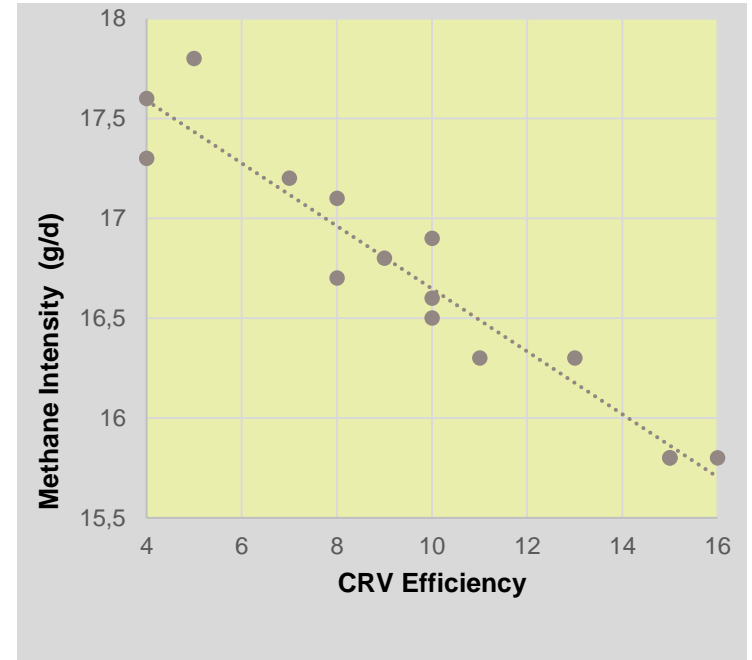


Relevance of Feed Efficiency in Methane production

- Of the total CO₂ production on dairy farms, 62% comes from methane gas from cow burps
- A cow produces about 80-120 kg's of methane per year
- There is a high correlation between feed efficiency and methane production

Methane Production

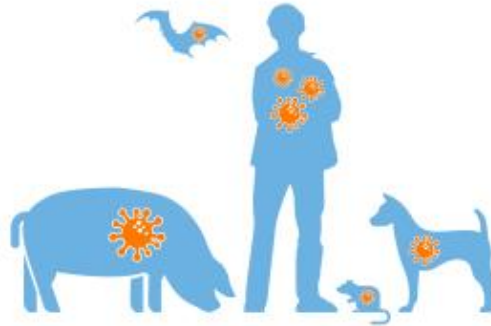
- **Methane emission is strongly dependent on:**
 - *Milk Production*
 - *Number of Lactations*
 - *Feed Efficiency*
- **Methane emission is strongly correlated to the CRV efficiency index**
- **Methane measurements in practice and genomic data will be combined**



Zoonoses

Infectious diseases that can spread from animal to human

Zoonoses



Up to **75% of new diseases** affecting people over the past 10 years originated from animals



There are over **150 zoonotic diseases** worldwide, which are transmitted to humans by both wild and domesticated animals



13 zoonoses are responsible for **2,2 million deaths** per year; this includes influenza, tuberculosis, rabies, brucellosis, Q fever and hepatitis E



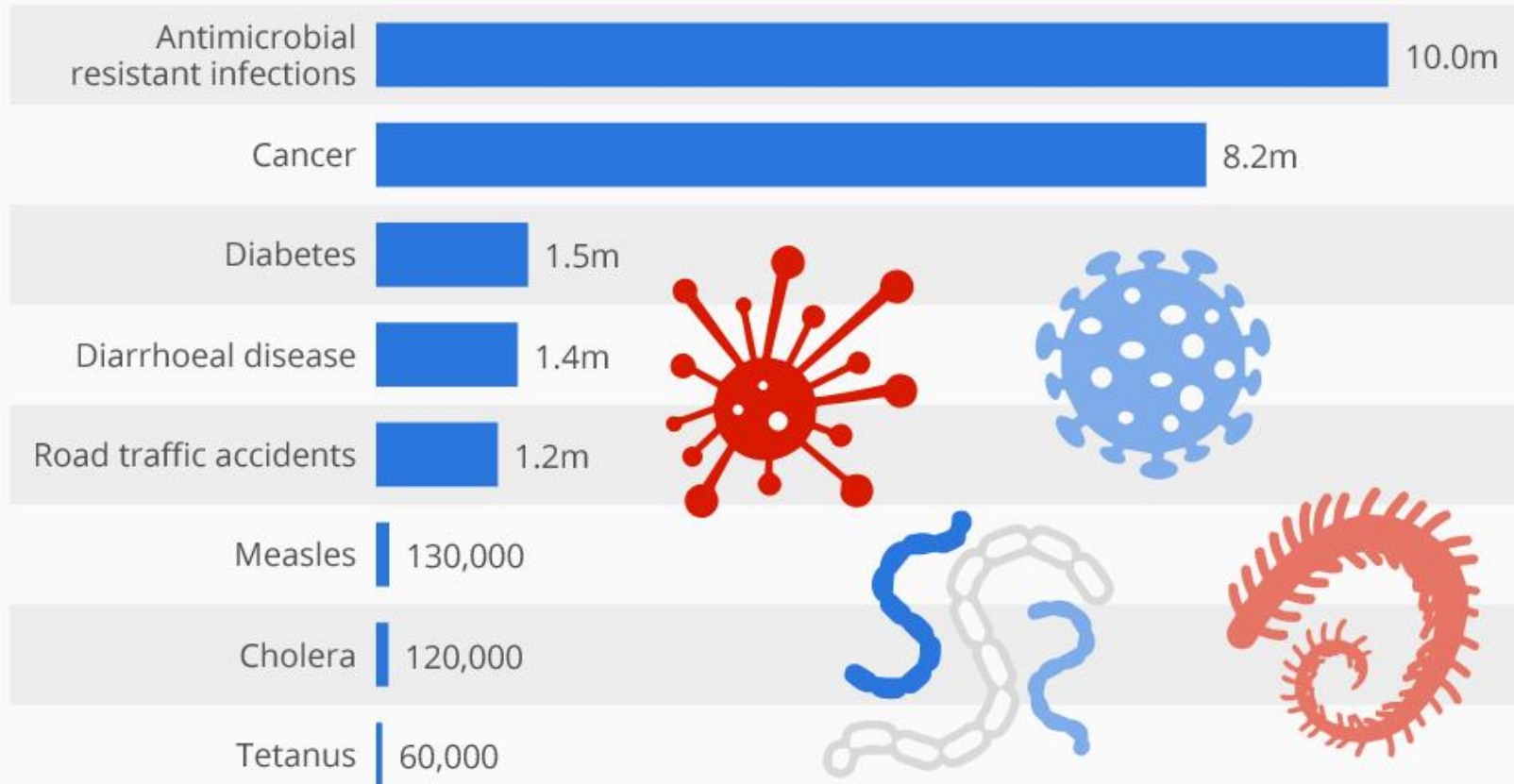
Controlling or eradicating **zoonotic diseases in animals** is more effective than in humans

Prevention of Zoonoses Through breeding

- **Breeding for animals that are less susceptible to infection reduces prevalence of infection can reduce risks**
- **Less infections = less transmissions**
- **Some examples are:**
 - Salmonella
 - Bovine TB
 - Hepatitis E
- **Of course, less health issues improve herd performance and profitability**



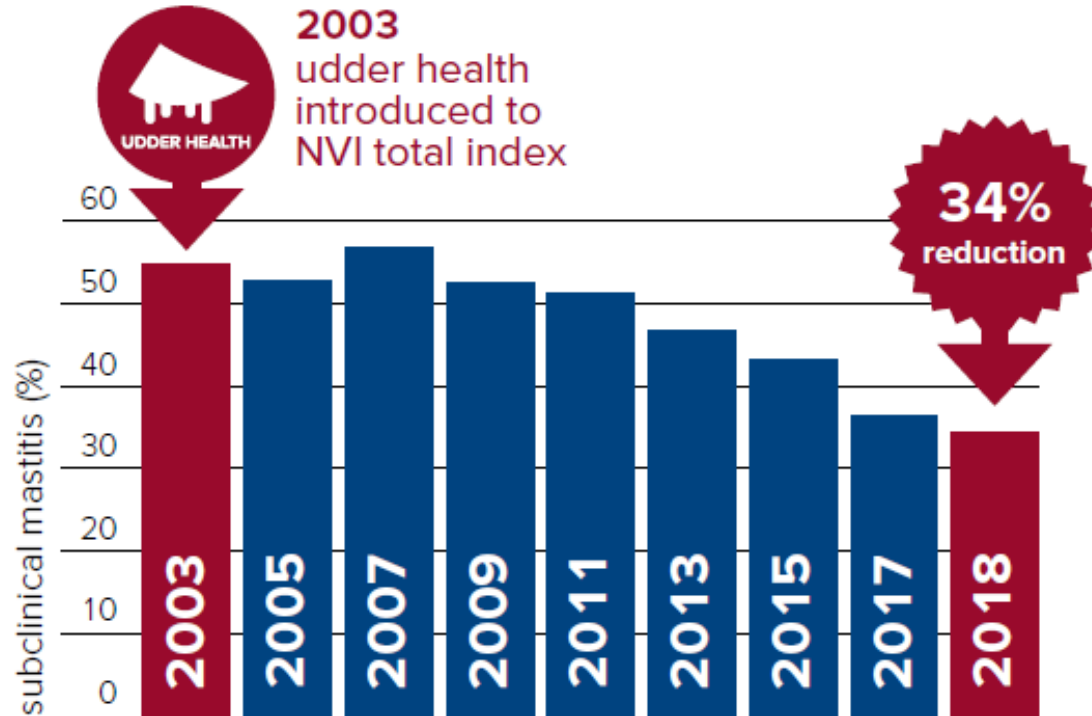
Deaths from antimicrobial resistant infections and other causes in 2050



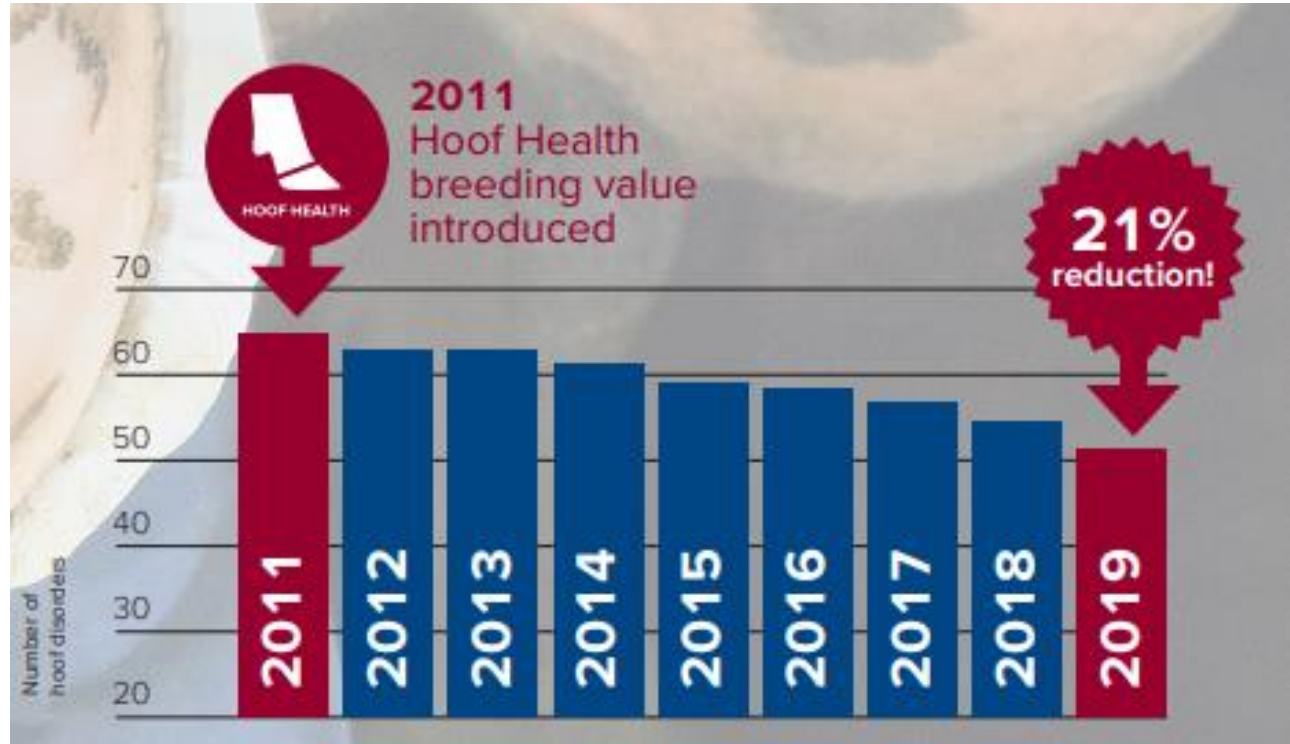
Preventative Antibiotics

- **73% of worlds antibiotics used in Agriculture**
- **In 2022, new EU legislation will prohibit all forms of routine antibiotic use in farming, including preventative group treatments**
- **No more routine use of antibiotics and more control on preventative measures keeping animal welfare at a higher level**
- **As a farm, we should be proactive and prepared**

Breeding for Health pays off and reduces antibiotic use



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Precision/Smart Farming

- **Sensors like heat detection and rumination analysis**
- **Big Data analysis**
- **Pin point climate control in barns**
- **Genomic analysis avoiding genetic disease, haplotypes and determining proteins in milk e.g. A2A2**
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Conclusions

- **We need to do what Farmers do best – Be entrepreneurs, businessman, pioneers and visionaires**
- **But! Must be smart - 3 p's:**
 - People
 - Planet
 - Profit
- **We have tools, but need to use them – start yesterday! Think about breeding for Health and Efficiency**
- **Dont turn a blind eye on consumer influence**

Questions