Improving Animal Health and Production: How it improves the environment

Nigel Meads
Agriculture has gone from having THE most important job in the world to having the TWO most important jobs in the world

Nourish People
Preserve the Planet
We’re not doomed.
Agriculture has the greatest potential to shape the future of our planet.
• 86% of global livestock feed is inedible by humans

• Livestock, particularly cattle, upcycle inedible raw materials into high-quality human foods

(Mottet et al., 2017)
What shall we do with byproducts?

- Feed a cow
- Compost
- Landfill

De Ondarza and Tricarico, 2021
The cow is the centre
For a 300-cow herd doing 380 kg MS/cow,

decreasing lameness from 10% to 5%

carbon footprint 4%

revenue $4,800

*Estimated based on averages, and $6/kg payout, not based on any specific farm
Somatic cell count

For a 300-cow herd doing 380 kg MS/cow,

decreasing SCC from 180,000 to 130,000

carbon footprint 1.5%

evenue $30,600

*Estimated based on averages, and $6/kg payout, not based on any specific farm
For a 300-cow herd doing 380 kg MS/cow,
decreasing empty rate from 15% to 10%

- Carbon footprint 2%
- Revenue $34,200

*Estimated based on averages, and $6/kg payout, not based on any specific farm*
Genetic gain

For a 300-cow herd doing 380 kg MS/cow,

Increasing to 395 kg MS/cow

carbon footprint 1.5%

revenue – depends on feed cost

*Estimated based on averages, and $6/kg payout, not based on any specific farm
The sum of all the parts

- Enteric emissions
- Food use
- Nitrous oxide
- Artificial fertiliser
- Manure emissions
- Fuel
- Electricity
- Others
- Improved fertility
- Reduced lameness
- Reduced death
- Improving yield from forage
- Reduced mastitis
- Improved feed conversion

Increase
Decrease
Profitability

INCREASED HEALTH AND PRODUCTION

+1 litre/milk cow per day = €238/year

4 fewer open days

-7,038 tonnes of CO₂

THE STUDY: DAIRY

14,257 cows on programme
19 countries
58 farms

2,077 fewer cars on the road
546 fewer round the world flights
Lifecycle Analysis

The Dairy Life Cycle

- view at systems level – greater than the sum of its parts
Where else can we look for waste?

- **FIELD**: 2-5%
- **STORAGE**: 2-10%
- **FEED OUT**: >10%
- **COW**: 25-100%
“We have such an extraordinary opportunity living in the time we do.”

Dr. Mark Lyons, President and CEO, Alltech
Thank you

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