“Novel concepts and methodologies around the assessment of sustainability in livestock farming: One nutrition”
Who is FEFAC?

- European Association of Compound Feed Manufacturers
- Founded in 1959

Livestock sourcing in feed in the EU+UK (825 mt. in 2020)

- Forages: 549.4 mt.
- Feed materials used on farm: 111.5 mt.
- Industrial compound feed: 164.3 mt.

- Represents 28 National Associations in 27 European countries
- Industrial compound feed production in 2020 (est): 164.3 mt.
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### Ambition 1: Contribute To Climate-Neutral Livestock & Aquaculture Production Through Feed

- Methane strategy: Reduction emissions 35%
- Carbon Border Adjustment Mechanism

### Ambition 2: Foster Sustainable Food Systems Through Increased Resource & Nutrient Efficiency

- Reduction of food waste by 50%
- Reuse of waste (Nutrient recovery)
- Use of by-products

### Ambition 3: Promote Responsible Sourcing Practices

- Due diligence law for deforestation

### Ambition 4: Contribute to Improving Farm Animal Health & Welfare

- Reduction of use of antimicrobials
- Innovative feed (additives) solutions for environment
- Increase organic land 25%

### Ambition 5: Enhance the Socio-Economic Environment and Resilience of the Livestock & Aquaculture Sectors

- Reduction of ammonia emissions
- New hazard classification for endocrine disruptors

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Role of animal nutrition to support the sustainable and competitive livestock and aquaculture production
FAO sets the record straight–86% of livestock feed is inedible by humans

Ambition 2
Foster Sustainable Food Systems Through Increased Resource & Nutrient Efficiency

UN Strategic Development Goals
12 Responsible Consumption and Production
13 Climate Action
14 Life Below Water
15 Life On Land

Nutrient Losses
Reduce nutrient losses by 50% whilst retaining soil fertility, resulting in 20% less fertilisers

EU Green Deal objectives
Reduction the excess of nutrients
Boost a circular bio-based economy
Reduce food waste

FEFAC
Experts in Animal Nutrition
The circular economy: role of livestock sector (ATF)
Future more circular food production systems

(Elbergen et al., 2019)

- Animal manure/byproducts recycling will affect overall NUE
- New food chains will appear (insects, algae, artificial meat) and change NUE
- Circular food systems complicate the attribution of NUE (waste or resource?)
Optimisation of nutrient conversion into bioresources

• So far: selecting the best resources to obtain the best conversion factor
• In future: adequate feed conversion in circular context, with a finite amount of “circular feed”
• Technology is required:
  ▫ NGTs (New Genomic Techniques),
  ▫ detoxification technologies,
  ▫ increased digestibility via processing

Evolution of feed conversion rate for poultry

Source: ITAVI
The proven record of plant breeding innovation

25. The further development of plant breeding is essential to produce certain technical improvements for animal feeding. Rapeseed is a crop with particular odour and harmful compounds which are toxic for mammals and also restricts its use for animal feed.
Preserving “co-product” status to minimise food waste

- 62 mio tonnes of co-products used by EU feed industry:
- Nearly all feed used in compound feed manufacturing is « non-food grade »
  - not suitable for human consumption as they do not meet the minimum quality and standards required for food production.
Recovering nutrients from waste streams

• Recovery of nutrients from:
  ▪ Catering waste?
  ▪ Waste water?

• BUT safety concerns!

• Conditions for granting end-of-waste status are key?
Further optimising the nutrient flow along the nutritional chain via bioresources

Gnanasekaran Dineshbabua, Gargi Goswamia, Ratan Kumara, Ankan Sinhaa, Debasish Das

Possibility to optimize animal products through animal diet

- Saturated fat content – parma ham

Influence of dietary fat, on fatty acid composition and sensory properties of dry-cured Parma ham

G. Pastorelli a, S. Magni a, R. Rossi a, E. Pagliarini b, P. Baldini c, P. Dirinck d, F. Van Opstaele e, C. Corino a
One nutrition concept as the law of minimum
We need scientists from human nutrition, animal nutrition and plant nutrition to develop the „One Nutrition“ concept to provide us science base for defining sustainable nutrition along the food chain.
Thank you for your attention

@FEFAC_EU