European Feed Technology Center



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Closing the efficiency gap — a contribution from European Feed Industry

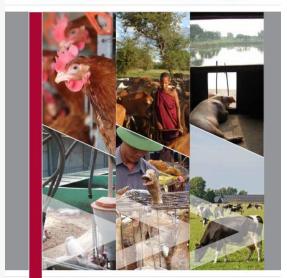
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Main challenges

- Feeding 9 billion land is scarce
- Climate change GHG emissions
- Limited resources

BUILDING A GLOBAL AGENDA OF ACTION
IN SUPPORT OF SUSTAINABLE LIVESTOCK SECTOR DEVELOPMENT



This note describes the preparation of a Global Agenda of Action through a participatory process which focuses on consensus building among key stakeholders in the livestock sector for a subsequent operational phase politically a Global Agendry of Action will focus on the improvement of recourses see

initially, a Global Agenda of Action will focus on the improvement of resource-use efficiency in the investor's sector to support theilhoods, long-term food security and economic growth while safeguarding other environmental and public health outcomes

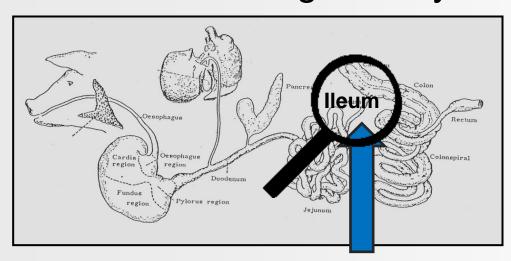
Role European Feed Industry: Mixing, milling and transport?





The right nutrient at the right time at the right place

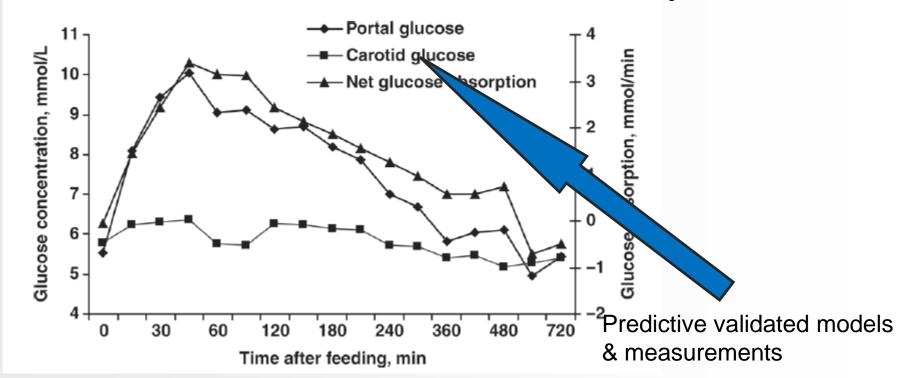
It's all about digestibility and necessity



Measurements

The right nutrient at the right time at the right place

It's all about digestibility and necessity



Feed Value & Feeding norms

- Influence of raw material
- Processing

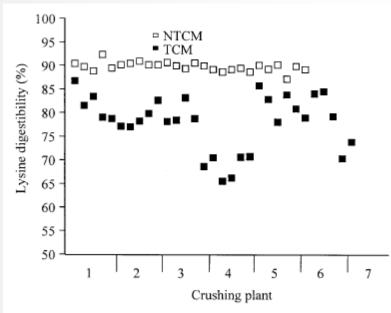
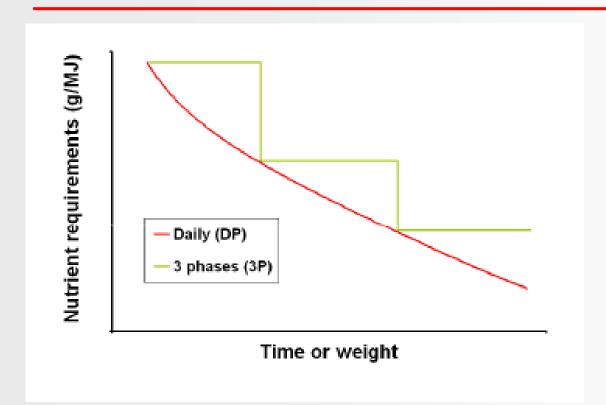


Fig. 1. Apparent Lys digestibility (%) of toasted (TCM, n = 31) and non-toasted (NTCM, n = 26) canola meal samples.

Feed value & Feeding norms

- Two types of animals:
 - Growing animals → pigs, broilers, calves, beef
 - Steady animals → producing eggs, milk
- Steady is never steady: pregnancy, health status

Feed value & Feeding norms



Feed value & Feeding norms

Feeding pigs with daily tailored diets reduced N and P intake respectively by **25% and 29%**, and the corresponding excretions were reduced both near **40%**

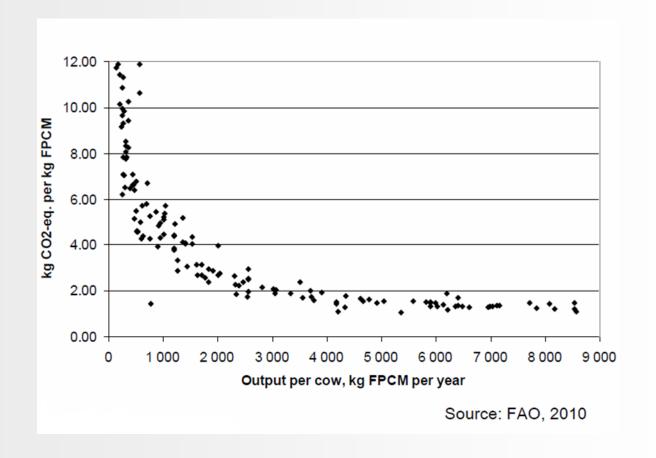
	Feeding method				
	Three-phase feeding program	Individually daily tailored diets	SEM	P value	Δ, %
Feed cost/ADG, \$/kg	1.022	0.974	0.006	0.0001	4.7
N intake, kg	5.69	4.29	0.050	0.0001	25
N excretion, kg	3.61	2.21	0.043	0.0001	39
N retention, kg	2.08	2.08	0.018	0.9090	0
P intake, kg	0.91	0.65	0.007	0.0001	29
P excretion, kg	0.49	0.30	0.005	0.0001	40
P retention, kg	0.35	0.35	0.003	0.9090	0

Pomar, et. Al 1998

European Feed Industry:

- Efficient and fast prediction of real feed value
- Efficient prediction of real utilisation and delivery of nutrients

Positive relationship between GHG-emission and productivity



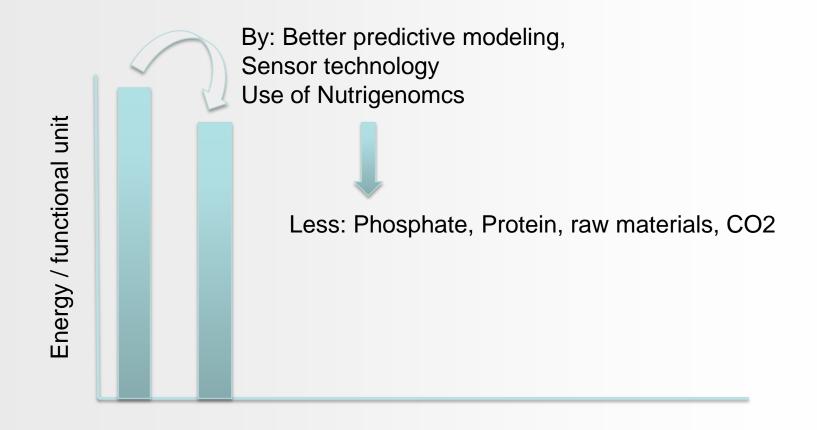
Feed industries contribution to global problems

Sector	Technology	Landuse	GHG	Resource efficiency
		M2/kg fu	Kg CO2/kg fu	% co- products
Pig Dutch	Conventional (baseline)	6,4	4,89	40,4
Pig Dutch	High energy feed	6,0 (-6,0%)	4,65 (-4,9%)	32,7 (-9,0%)
Broiler Dutch	Conventional (baseline)	4,9	3,5	33,4
Broiler Dutch	Local grains completed with high protein concentrate	4,9 (+/-)*	3,4 (-2,4%)	33,2 (+/-)
Layer Dutch	Conventional (baseline)	4,7	2,0	33,5
Layer Dutch	High fiber concept	4,5 (-3,0%)	1,937 (-3,0%)	36,5 (+3,0%)

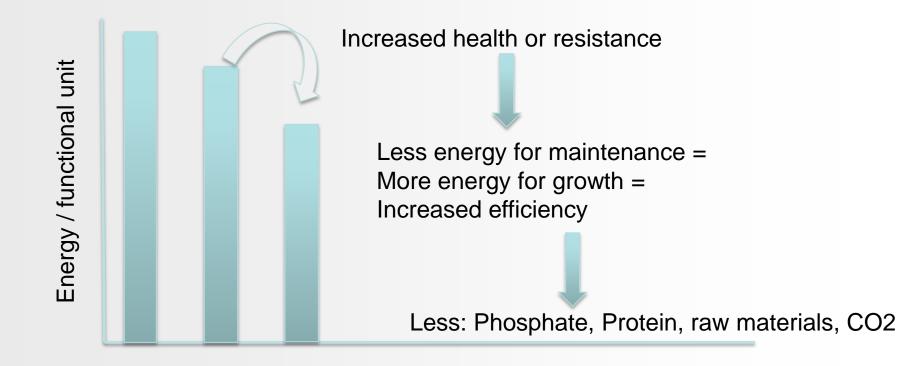
European Feed Research agenda

- Optimizing resource efficiency by using nutrients efficiently
- Healthy animals for healthy consumers
- Social responsible livestock farming

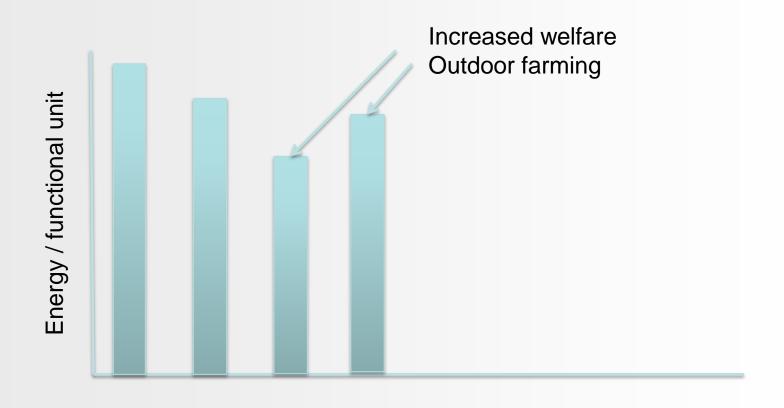
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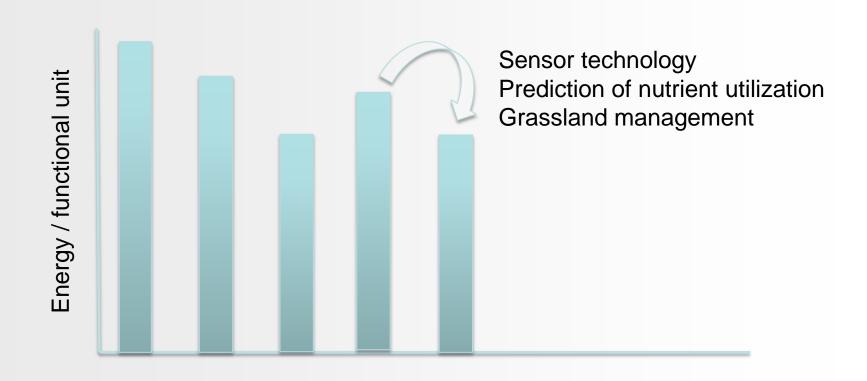
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Some more specific subjects

- Validated models for gut health and immunity
- Model prediction for feed utilization norms
- Fast screening technology for nutrient need
- Nutrient intake determination under grazing conditions
- Alternative protein sources, including NW-European Soy

Conclusions

- By developing and implementing new technologies a lot to gain
- Healthy animals are key for social acceptance and efficiency
- And social developments will ask new breakthroughs

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