


ICOPP

Improved contribution of local feed to support 100% organic feed supply to pigs and poultry

**An ERA- net project with 13 partners/10 countries
1/10- 2011- 30/9 - 2014**


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Expected output: New validated systems that are economical viable as well as animal welfare - and environmental friendly and adapted to local agro-ecological conditions.


- Improved knowledge of availability and nutritional value of new organic feed ingredients - focus on local feed resources
- Improved understanding of the possible benefits of roughage inclusion in relation to nutritional and behavioural needs as well as its impact on health and welfare
- Understanding how direct foraging in the outdoor area can contribute to meeting the animals nutritional needs
- Assessing the economic and environmental consequences of increased reliance on local organically produced feed

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ICOPP: Improved contribution of local feed to support 100% organic feed supply to pigs and poultry

WP1 Baseline of feeding practice/opportunities		
WP3 Concentrates	WP4 Roughage	WP5 Foraging
WP2 Feed evaluation		
WP6 Integrated impact assessment		
WP7 Dissemination		

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ICOPP partners

AU	Dep. of Agroecology, AU	Denmark	John E. Hermansen
WUR	Wageningen UR	Netherlands	Herman Vermeer
ORC	Organic Research Centre	UK	Jo Smidt
SLU	Swedish University of Agricultural Sciences	Sweden	Maria Neil
BOKU	University of Natural Resources and Life Sciences	Austria	Werner Zollitsch
vTI	Institute of Organic Farming	Germany	Friedrich Weissmann
MTT	Agrifood Research Finland	Finland	Liisa Voutila
HSWT	University of Applied Sciences	Germany	Gerhard Bellof
LBI	Louis Bolk Institute	Netherlands	Monique Bestman
FAI	Food Animal Initiative	UK	Ruth Clements
FIBL	Research Institute of Organic Agriculture	Switzerland	Veronika Maurer
ITAB	Institute Technique de l'Agriculture Biologique	France	Joannie Leroyer

The detailed activities are in the planning phase now

WP1: Feed resources– Veronika Maurer, FIBL, Switzerland

WP2: Feed evaluation– Kirsi Partanen, MTT, Finland

WP3: Local concentrates and productivity, health, behaviour and welfare– Friedrich Weissmann, vTI, Germany

WP4: Roughage and growth, health and behaviour in pigs and poultry – Herman Vermeer, WUR-LR, NL

WP5: Foraging in the range area– Klaus Horsted, AU, Denmark

WP6: Integrated impact assessment - John E. Hermansen, AU-DJF, Denmark



WP1: Feed resources and present feeding practices

Helga Willer (helga.willer@fibl.org)

Barbara Früh (barbara.frueh@fibl.org)

Veronika Maurer (veronika.maurer@fibl.org)

Feed resources

Veronika Maurer, FIBL, Switzerland

The Problem

What resource are available at a European scale (high quality protein)

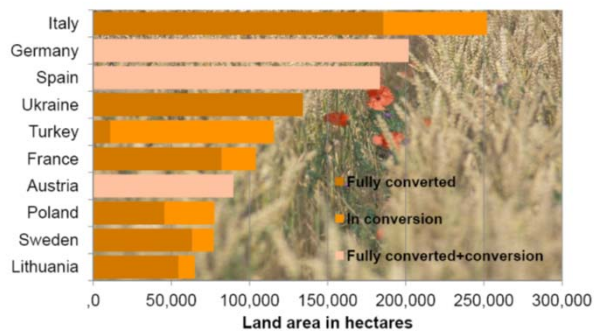
What are the possibilities to increase EU self supply with organic protein

What innovative solutions have been used by farmers

Two views: EU-local vs local-local

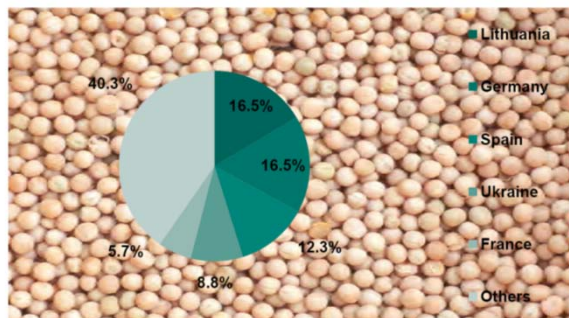
Combining this overview with the experimental work as described later will allow a good judgement on how to achieve 100% organic feeding with local sources

Europe: Organic cereal area 2009 – Top 10



Source: FIBL/FOAM Survey 2011, based on data from Eurostat, governments, the private

Europe: Distribution of the dried pulses area by country 2009 (total 0.16 million hectares)



Source: FIBL/FOAM Survey 2011, based on data from Eurostat, governments, the private organic sector and certifiers.

Feed evaluation

Kirsi Partanen, MTT, Finland

The problem

- Scattered knowledge on feeding value of organic feed stuffs
- Different methods to estimate this, makes it difficult to transfer results from country to country
- Need for in-dept studies of new feeds

Activities

- Set up a data base for practical use
- Perform digestibility trials with pigs and poultry of new feeds – focus on amino acids (Insects protein, mussel meal, sainfoin, grass pea seed)
- Contribution of amino acids by roughage



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Feeding experiments - Local concentrates

Friedrich Weissmann, VTI, Germany

Piglets (Growth and gut health)

- Grass pea seed (Boku)
- Sainfoin (Boku)
- Insects protein (FiBL)
- Home grown mix (vTI)

Finishers (Growth and product quality)

- Mussel meal (SLU)

Sows (Reproductive performance)

- Legumes and rape seed cake in phase feeding strategies (MTT)

Roughage -growth, health and behaviour in pigs and poultry

Herman Vermeer, WUR-LR, NL

WUR-LR (NL)



ORC/FAI (UK)



SLU (SE)



HSWT (DE)



The problem

- To what extent can roughage contribute with nutrient
- Can it improve gastro-intestinal health
- Can it improve welfare
- What are implications on product quality



Experiments -roughage

- Grass silage (high quality) for growing pigs (WUR)
 - (focus stomach health)
- Clover grass for finishers (FAI)
 - focus product quality)
- Grass/chicory for finishers (SLU)
 - Interaction genotype



Foraging in the range area as an integrated approach



Qbañtjþout;
P áhbojís Sftfbdi D fouf)P SD *-VL
Gpe Bojn lmbjþjþvf)G J-VL
ÖtjjuUfdiojvf ef nðhagnvaf Cjþhþjvf)IBC*-Gðodf
Bbslvt Vojfaþjz)BV*-Efon bál

Working hypothesis

Foraging in the range area can contribute significantly to the nutritional needs of pigs and poultry

Differences in breeds exist due to differences in exploring behaviour and growth patterns

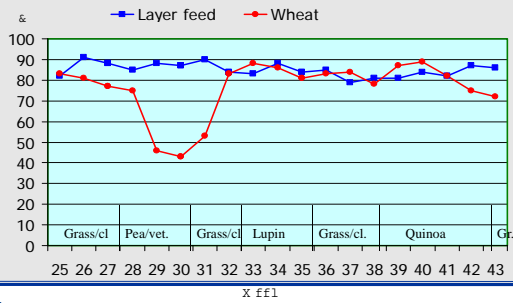


Foraging in the range area may contribute to:

- 100% organic feeding
- increased use of locally produced feed
- improved animal health and welfare
- differentiated products
- fulfilling the consumers expectations of organic farming



Experiment with laying hens foraging a sequence of different crops



Første resultat (fra pilotforsøg)

- 6.7 l h pæt pllfspn ebhfo qfstmhufwp ; 46 & bg cfipw



Periode: 59-75 kg
 Tilskudsforbrug: 1.8 kg/dag
 Tilvækst: 890 g/dag
 Foderudnyttelse: 2.3 kg tilskudsforbrug/kg tilvækst



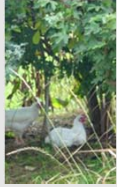
Wjefpn fe gmoethstf efsi efs pæt pllfspn
 lwls Aefsbgl foorph D/Uipn tfo

Approach/methodology

B/ Mjfbawf sfwfx pgcpejvstjz tvejftpgpo. fba ibcjbvt)dppqfe boe opo.dppqfe jdwepjh BFT pqupot*)VL*

C/ Fyqfsh fout j EL x jii haxx jh qht boe cpxjft)3124*

D/ Fyqfsh fout j Gbodf cpxjft-tpx t-qjnt boe haxx jh qht jdwepjh e ttf sfouhfopuzqft x jii psx jii pvubdfett p fphf)3123 boe 3124*



Combined pig and energy crop production - a solution?

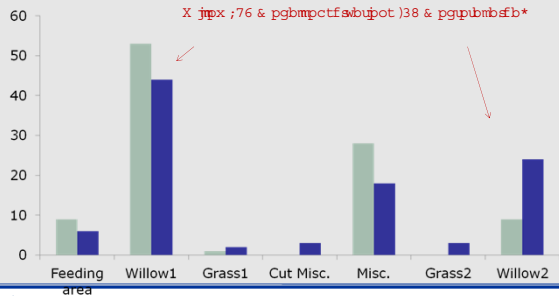
- The area with energy crops has increased in DK
- Could offer the pig variation and protection from the sun/wind
- Deep root system with high water and nutrient uptakes
- But will the pigs destroy the plants?



Spring 2009



Excretory behaviour, % of observations



area
DET JØRDBRUGS- OG LÆGEMIDDELFORSKNINGSPROJEKT
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Potential N-leaching

	BV0ifdubf	Mfbdijh-lh 00ifdubf	Qsfwpvt tvejt- 00ifdubf
Tn bm qbeepdlt	2/	41	233.381
Mbhf qbeepdlt	1/7	5	4 : .96

TÅfoto-3121



Conclusions

- Combined pig and energy crop production are possible without serious crop damages if the crops are well established
- At high temperatures the pigs preferred to rest in zones with willow
- The pigs preferred to deposit the manure in zones with willow



Integrated assessment

John E Hermansen

Generic 'optimized' systems (economic viability, animal welfare, environmental impact) based on 100% organic feed are produced for different local feed resource availabilities and agro-ecological conditions

Workplan

- Typical systems (pig, egg broiler) across Europe defined in terms of input, land use, and production **Months 12-24 (Contribution from WP 1 and all partners)**
- Prototypes converted to 100 % organic diet (taking into account innovations identified in the other wps) through an iterative process and through discussion with relevant stakeholders in different countries **Months 25-33**
- New systems will be assessed and published to be used as basis for local adaptation of the production system **Months 28-35**