Agro-ecology @ILVO

Animal Science Unit

Charlotte Vanden Hole
Nico Peiren
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POULTRY/PIG/CATTLE:

- Feed: OPTIPLUIM, LEGMEME, MELKMETHGRAS
- Worm infections: ALTBIOLEG, PREBEBIOLEG
- Range use: PPILOW

ANIMAL – POULTRY

OPTIPLUIM

Optimal cultivation of protein crops for poultry feeding

Goal
Maximize the use of regional protein sources in poultry

Why?

- ✓ Protein independency
- ✓ Sustainable, circular and animal friendly poultry production systems
- ✓ Less fertilization, pesticides and soil erosion

Contact

Marta.Lourenco@ilvo.vlaanderen.be

Research Questions

- ✓ Which alternative protein sources can be used in mixed cropping systems for poultry feeding
- ✓ Which cultivation techniques for mixed crops
- ✓ Which optimal processing technique for mixed crops
- ✓ What is the nutritional value of the processed mixed crops and its impact on egg and meat quality
- ✓ What is the economic viability and environmental impact (LCA)

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ANIMAL – POULTRY

LEGMEME

Insect meal and whey powder: new potential protein sources for 100% organic feed

Goal

Evaluate if these new potential protein sources match the requirements in organic production

Why?

- ✓ From **1/1/'22 30%** of the feed ingredients has to be **regional**
- ✓ **5% protein rich feeds** in young birds no longer allowed from **2026** on
- ✓ Challenge to formulate feeds that meet the animal requirements, particularly for **methionine & vit B2**

Plan of Approach

- ✓ Evaluation of **insect meal** and **whey powder** as potential protein source
- ✓ Why? High **nutritional value** and fit in the concept of **circular economy**
- ✓ **Local production** and possible **alternative** to **soy**
- ✓ Implementation in research and commercial farms

Contact

Annatachja.DeGrande@ilvo.vlaanderen.be

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ANIMAL – POULTRY

ALTBIOLEG

Alternative methods for deworming in organic laying hen production systems

Goal

Provide guidelines to organic laying hen farmers for a better management of helminthic infections

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Contact

Annatachja.DeGrande@ilvo.vlaanderen.be

Why?

- ✓ Systematic use of flubendazole for laying hen deworming
- ✓ No general deworming thresholds
- ✓ Risk of resistance against the only allowed pharmaceutical
- ✓ Little insights in the dynamics of worm infection and effects on production and animal health

Research Questions

- ✓ What is a **correct indicator** for the infection pressure (**egg counts, autopsy, blood**)?
- ✓ What is the effect of **flubendazole** on the infection pressure?
- ✓ What is the effect of **not deworming** on the infection pressure?
- ✓ What is the effect of **alternative methods** (fytogenic products) on the infection pressure?

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ANIMAL – POULTRY

PREBEBIOLEG

Alternative Methods to Prevent and Control Worm Infections in Organic Laying Hen Production Systems

Goal

Increase the choice in alternative and preventive methods to control worm infections for poultry farmers

Without impact on animal performance

Contact

Annatachja.DeGrande@ilvo.vlaanderen.be

Why?

1. Change in EU-regulation regarding the use of chemical products in organic production

- Waiting period of 48h
- Eggs can not be sold under the label of organic eggs during treatment + waiting period of 48h
- Economic losses

2. Minimal use of pharmaceuticals = belongs to basic principles of organic production

Research Questions

- ✓ Desk-study: inventarisation of the current practices
- ✓ Making SOP's with the available knowledge on
  - ✓ Monitoring and diagnose
  - ✓ Prevention and alternative methods
  - ✓ Treatment strategies
- ✓ Apply and optimize SOP's in practice
- ✓ SOP's available for free via LivingLab Animal Production - Poultry

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PLUIMVEELOKET

ANIMAL – POULTRY / PIGS

PPILOW

Poultry and Pig Low-input and Organic production systems

Goal

Innovative strategies for the welfare improvement of pigs and poultry in organic and low-input systems

Why?

- ✓ Increasing consumer demand for free range/organic products, but still many welfare challenges
- ✓ Increasing attention for the 'One Welfare' concept

Contact

Evelien.Graat@ilvo.vlaanderen.be

Research questions

- ✓ Does the use of welfare self-assessment tools lead to an improvement in welfare?
- ✓ Incubation and rearing strategies (without mutilations) to improve welfare?
- ✓ **Optimised design of the outdoor area for laying hens, that maximises the use of the outdoor area and minimises feather pecking, feather damage and mortality**

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ANIMAL – CATTLE

MELKMETHGRAS

Nutritional mitigation and grassland climate adaptation in relation to enteric methane emissions from dairy cattle

Goal

Develop nutritional grass-based mitigation and adaptation strategies in relation enteric methane emissions for dairy cattle

Why?

1. Climate Mitigation through lower enteric methane emissions in grass fed diets

2. Climate Adaptation through grass and grassland that is more drought tolerant and resilient to more extreme weather conditions

Research Questions

- ✓ What is the mitigation potential of different grassland herbs (Ribwort plantain, Chicory, Sainfoin, White clover, Red clover, Alfalfa) and can this be determined via *in vitro* CH_4 emissions screening?
- ✓ What is the optimal harvest moment of these herbs?
- ✓ What is the effect of these herbs on dairy cows? (dry matter intake, milk production and composition, CH_4 production, digestibility and microbiome)

Contact

Joni.VanMullem@ilvo.vlaanderen.be

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ANIMAL – CATTLE

BROCHURE

Practical guide to Organic Beef Farming

https://www.vlaanderen.be/publicaties/praktijkgids-voor-de-biologische-vleesveehouderij

Contact

Karen.Goossens@ilvo.vlaanderen.be

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Thank you for your attention

Flanders Research Institute for Agriculture,
Fisheries and Food
Animal Science Unit
Scheldeweg 68
9090 Melle – Belgium
T + 32 (0)9 272 26 00

dier@ilvo.vlaanderen.be
www.ilvo.vlaanderen.be