



PPILOW

Poultry and Plg Low-input and Organic
production systems' Welfare



PPILOW, a European project dedicated to Welfare in Poultry and Plg Low-input
outdoor and Organic production systems (2019-2024)

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SUMMARY

The PPILOW project is one year old! - by Anne Collin (INRAE)	2
Reports on the different Work Packages (WPs).....	3
2.1 WP2: NPGs, facilitators and co-creation – by Cristina Micheloni (AIAB)	3
2.2 WP3: EBENE/PIGLOW apps and WP.3 progress – by Laura Warin (ITAVI), Frank Tuytens and Evelien Graat (ILVO).....	3
2.3 WP4: Early life innovations to improve welfare of laying hens - By Saskia Kliphuis (UU)	4
PPILOW co-creates innovations for welfare improvement thanks to professionals and associations of the poultry and pig production sectors - by Anne Collin (INRAE). 5	
New people in the PPILOW project: Evelien Graat, Helen Pluschke	6
Upcoming events PPILOW Participation.....	6

The PPILOW project is one year old! - by Anne Collin (INRAE)

The first annual meeting of the European PPILOW project (Poultry and PIG Low-input and Organic production systems' Welfare, 2019-2024, www.ppilow.eu) was held from the 5th to the 7th of October. During this 3-day online meeting, more than 80 attendees from the 23 PPILOW partner organizations in 9 countries, and several members of the project European Multiactor Board shared on PPILOW advances, arousing very rich discussions. The meeting highlighted the PPILOW multiactor participatory approach, which allows co-creation thanks to the work of 9 National Practitioner Groups. The project advances this year concerned the inventory of issues and potential levers of welfare improvements in the target systems, the creation of shared tools enabling to perform welfare self-assessment, further One Welfare sustainability assessments and to build business models. The partners presented first experiments on early management and outdoor enrichment to avoid feather pecking, and the foreseen genetic and management strategies allowing to rear organic entire male pigs without altering the meat quality. Studies evaluating the multiple impacts of rearing dual-purpose genotypes able to produce both eggs and meat are currently developed in Denmark, hence avoiding the elimination of male day-old layer chicks. On this purpose also, the development of a non-invasive in ovo sexing method is going on in experiments combining physics techniques and molecular studies. Strategies enabling to enhance the robustness and health of pigs and poultry are tested, such as i) rearing new genotypes of slow-growing broilers favoring the free range exploration, ii) selecting pig genotypes and improving hut designs for sows reared outdoor for decreasing piglet mortality rates, iii) feeding pigs and laying hens with plant extracts or fermented components for decreasing parasitism or bacterial diseases, before iv) launching studies on early life management levers for increasing broiler resilience. This experimental work will be amplified in the coming years thanks to the work of several students starting their PhD, namely Evelien Graat (EV ILVO), Claire Bonnefous and Océane Girardie (INRAE), joining in PPILOW Helen Pluschke (Thuenen) and Saskia Kliphuis (Utrecht University) who had started their PhD last year. Finally, the development of dissemination materials and the partners' interactions with collaborative networks, end-users and policy makers ensure the impact of the PPILOW project for pig and poultry welfare improvement in organic and low input outdoor farms throughout Europe.

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Reports on the different Work Packages (WPs)

2.1 WP2: NPGs, facilitators and co-creation – by Cristina Micheloni (AIAB)

Despite COVID-19 restrictions facilitators managed to keep in contact and fine tune the methodology to set up and manage the National Practitioner Groups (NPGs) on Poultry (in Italy, France, Germany, Belgium-Netherlands, and Denmark) and on Pigs (in Italy, France, Belgium and Romania). 7 out of 9 NPGs had already a first meeting, either face-to-face or online, allowing the groups to share concerns, relevance, priorities and potentials on animal welfare. Part of the discussion was also dedicated to identification of potential levers for welfare improvement and to the co-creation of welfare assessment apps. To reorganize the methodology for distance interaction was quite a challenge, but it is giving results and somehow also opens up to participation of actors who would not be able to be involved in the case of exclusively face-to-face meetings. By the end of October, the next step will start, with the second round of meetings for the presentation of first project outcomes to the national practitioners, collect their feedback to orientate the next phase of the project and start discussing about some practical implementation of selected innovations (that will take place starting from next springtime). Beyond the challenge of interacting despite social distancing, a further challenge for the facilitators will lay in passing the information from the researchers to the practitioners and vice-versa, bridging language and lexicon barriers, as well as strong beliefs and personalities (from both sides) and needs of site specific solutions.

2.2 WP3: EBENE/PIGLOW apps and WP.3 progress – by Laura Warin (ITAVI), Frank Tuytens and Evelien Graat (ILVO)

Two mobile applications have been developed (PIGLOW app for pigs) or modified (EBENE® app for poultry) for farmers to self-assess the welfare of their animals. These apps are available on the Google Play Store and on the App Store in 3 different languages: Dutch, English and French. The other languages spoken in the countries of the PPILOW partners will also be added later in the project. The apps provide automated feedback including anonymous benchmarking and risk factors for welfare problems. The idea is that this feedback will prompt the

farmer to discuss with staff, colleagues, the veterinarian or other advisors how the welfare of the animals could be improved.



PIGLOW



EBENE

When developing these apps, we gave preference to animal-based indicators, as these are believed to be more directly related to the actual welfare of the animal than resource-based indicators. The selected indicators were classified according to the four Welfare Quality principles to cover the main welfare dimensions, namely Good Feeding, Good Health, Good Housing and Appropriate Behaviours. We then discussed the list of indicators with National Practitioners Groups in 6 European countries including representatives of feed producers, consumer associations, retailers, veterinarians, processors and farmers. They were asked for their opinion on the importance, feasibility and definition of the different indicators. Following refinement of the indicators based on these discussions, proto-types of the apps were tested for comprehensibility and user-friendliness by pig and poultry farmers in Belgium and France. We used the farmers' feedback regarding for example feasibility, user-friendliness and clear wording of the questions to produce the final apps.

The effect of the use of the apps on a larger scale and for a longer period of time will now be tested. For this longitudinal study, we are still looking for farmers of organic or free-range broiler chicken or fattening pigs in Belgium, France and The Netherlands who want to use the app for at least two years. If you want more information about (the benefits of) participation, please contact Evelien Graat at evelien.graat@ilvo.vlaanderen.be.

Interested in the apps? Have a look at the website/manual over here: [Pig](#) and [Poultry](#).

2.3 WP4: Early life innovations to improve welfare of laying hens - By Saskia Kliphuis (UU)



Fig. 1 -Novel object test at 6 days of age (© UU)

It has been six crazy months since the previous issue of the PPILOW newsletter, when we gave our last update on our experimental work. As 2020 has shown us, a lot can happen in half a year. In spite the pandemic and the lockdown that followed, we were able to continue most of the planned behaviour tests with the layer chicks. We performed a novel object test at two ages to assess response to novelty, a lateralisation test to assess changes in brain hemisphere dominance due to the green light, and a tonic immobility test to measure reactive fear responses. In addition, we spent a lot of time observing the pullets in their home pens, to study time budget and early feather pecking behaviour, recovery from stress after a vaccination, and interaction with the larvae tubes. We are currently analysing the first results. It seems that both the green light during incubation and enrichment with larvae caused effects on behaviour, although we would have to wait for the laying phase results and the second-round next year to obtain enough data to quantify these effects. In June, we moved the hens to the mobile houses at ILVO, where the long-term effects on feather pecking, fearfulness and range use will be studied for a year.

Meanwhile, the multi-actor approach of PPILOW is already in action, since several NPG-members from other countries have shown their interest in the results of our work. We hope that fruitful on-farm experiments will follow! I would like to give a big shout-out to all the students who helped us with the experimental work. Even while working a large part of their internship from home, they have proven themselves invaluable to the project. Kjelt, Antoine, Margaux, Elyse, Jary, Rosa and Elise, we couldn't have done this without you!



Fig. 2 - Behavioural biologists in their natural habitat (© UU)



Fig. 3 and 4 - Building test set-up with colleagues and students and Pullets with larvae tube at 15 weeks (© UU)

PPILOW co-creates innovations for welfare improvement thanks to professionals and associations of the poultry and pig production sectors - by Anne Collin (INRAE)

PPILOW, as a multi-actor project, involves several private partners from the poultry and pig sectors in order to propose innovations for improving the welfare of pigs and poultry in organic and low-input outdoor production systems. Among them, Circular Organics (Belgium) produces live insect larvae that are currently tested for avoiding feather pecking when offered to laying hens with intact beaks at young age. The breeding company syndicate SYSAAF (France) enables the use of new breeds from poultry breeding companies for dual-purpose production (of both meat and eggs) and free range exploration. The Danish firms Fermentation Experts and Vanggård Staldmontage provide new fermented feeds for poultry and hut prototypes for sows reared outdoor, respectively. Finally, the proposed innovations are discussed, co-built and tested thanks to the PPILOW's National Practitioners Groups gathering numerous actors in the value chains and facilitated by the project organic associations, technical institutes, research institutes and universities in Belgium, France, Germany, Italy, The Netherlands, and Romania.



Fig. 1 and 2 - Farrowing huts from the Danish PPILOW partner firm Vanggård Staldmontage (© Vanggård)

New people in the PPILOW project: Evelien Graat, Helen Pluschke



Evelien Graat (ILVO, PhD student)

Evelien Graat is a PhD student in the animal welfare research group at ILVO who works on the PPILOW project full time. She has a bachelor's degree in biology and a master's degree in behavioural ecology from Utrecht University. Her PhD project focusses on welfare self-assessments of pigs and poultry by farmers (WP3) and on resilience in broiler chickens (WP6) and is supervised by prof. Frank Tuytens (ILVO) and prof. Bas Rodenburg (Utrecht University).



Helen Pluschke (Thuenen Institute)

Helen Pluschke holds a B.Sc. in Agricultural Sciences (UBC Vancouver, HU Berlin) and a M.Sc. in Crop Science (MLU Halle). She is part of the researcher team at the Thuenen Institute of Organic Farming, where part of Task 5.1 of the PPILOW project will be conducted. She is committed to the development of robust dual-purpose breeds for organic production systems and tackling the challenges that this currently entails. She is curious about exploring actual nutritional requirements, suitability for currently used systems (mobile coops, foraging behaviour), overall robustness and vitality and in the end the taste and quality of products of the dual-purpose genotypes used in the PPILOW project.

Upcoming events PPILOW Participation

- [Joint Conference OK-Net EcoFeed - PPILOW - FreeBirds – POWER European projects](#) "Improving sustainability and welfare in organic poultry and pig production": 25th – 26th January 2021, remote meeting. Involved partners: AIAB, AU, ACTA(ITAB), INRAE, LUKE, UU, EV ILVO.
- [The European Association of Agricultural Economist Congress \(EAAE\)](#): 20th to 23rd July 2021 in Prague, Czech Republic. Involved partners: LUKE, Thuenen.
- [World Poultry Congress \(WPC\)](#): 8th to 12th August 2021 in Paris, France. Involved partners: INRAE, AU, UU, EV ILVO, Thuenen.
- [The 8th International Conference on the Assessment of Animal Welfare at Farm and Group Level \(WAFL\)](#): 16th to 19th August 2021 in Cork, Ireland. Involved partners: UU, EV ILVO, ACTA (ITAVI).
- [The Organic World Congress \(OWC\)](#): 6st to 10th September 2021 in Rennes, France. PPILOW will organise a dedicated session. Involved partners: INRAE, AIAB, ACTA (ITAB)

Keep safe, and for more information, visit our website:

www.ppilow.eu



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