Digital breeding and assisted management in organic rabbit farming: the first results

Yayu Huang, Marie Gigou, Jp Goby, Davi Savietto, Thierry Gidenne

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Y. Huang[1], M. Gigou[1], J.P. Goby[2], D. Savietto[1] and T. Gidenne[1]
[1]UMR 1388 GenPhySE, Université de Toulouse, INRAE, INPT, ENVT, 24, chemin de Borde Rouge, 31326 Castanet-Tolosan, France, [2]Université de Perpignan, IUT, 77, Chemin de la Passio Vella, 66962 Perpignan, France; thierry.gidenne@inrae.fr

The development of organic production is growing significantly, but the organic rabbit farming remains a niche market in France. This lack of technical references is an obstacle to the development of the 'alternative' rabbit sector. A smartphone application GAELA combining decision support (breeding management) and performance recording (single, direct and secure entry on a public server) for rabbit farming using individual monitoring of breeders was created. Performance of reproduction were compiled for 6 farms over 3 years of production (2018-2021). Preliminary results indicated that the livestock size averaged 30 does and varied largely among the farms. With 3.9 matings, 2.6 parturitions per female/year were obtained (fertility rate averaged 66.8%). Total number of kits born by parturition averaged 7.8 and total number of kits born alive averaged 7.1. At weaning, a low survival rate was recorded (69.3%). If it could be increased to 85%, the sales revenue could increase 3,564 euros for a farm having 50 females producing 3 litters per year (based on an average of 1.6 kg carcass/rabbit at 15€/kg). The result confirmed the existence of a progress margin in the management of the maternity unit, by improving the survival rate before weaning (housing management, prophylaxy, etc.), while reducing the parturition interval, and without impairing the survival rate after weaning. This first study validated the usefulness of GAELA and highlighted the potentialities of organic rabbit farming. GAELA will be updated in 2022, with more features for daily management of rabbits, and data management. Moreover, a new web service 'GAELA-Web' will be available in late 2022, to provide performances analysis for breeders. In 2023, GAELA intends to provide animal prophylaxis and genealogy tracking. Thanks to GAELA, a national reference system for all 'non-conventional' rabbit farming is now in progress.

Digitalizing livestock management to improve production

J.L.M. Caçador
Digidelta Software, Rua Lino António, lote 44 R/C, Cruz D'Areia, 2410-055, Portugal; joao.cacador@wezoot.com

A market research from 2019, reported that precision livestock market is worth 2.7 billion euros, and it is predicted that it will reach 4,2 in 2024. And according to Costa (2015), which visited a lot of farms in Portugal, the worst in terms of production are the ruminant's ones, like cattle and lamb. The reasons to explain this problem are the lack of investment in technical-scientific level and reluctance to make any changes in the way the farms work, to change to precision livestock farming. In the other hand, a study made by the European Parliament, verified that there is a 30% decrease in agricultural employment due to a mechanization of the farms, which has made possible an increase of the production in all members, including Portugal. FAO (2014) says that to increase production, records made in farms with new technologies, are essential to ensure profitability, helping farmers to choose the best inputs (land, animal, etc.), and the best business strategy, always following food safety and traceability requirements. All this signs point to a need of investment in the Portuguese ruminant livestock production, in specialized labour workforce and helpful technology, in order to boost the production without more animals or resources. Wezoot is a livestock management system that allow producers to maintain all the records of the farm in one software, web-based, allowing to work offline in the field. It gives automated alerts to perform tasks in animals and has connections with Bluetooth and RFID (radio frequency identification) technologies like tag readers, auto drafters and weighing scales, allowing farms to immerse in the world of livestock 4.0, where everything can be made faster, smarter, and more efficiently. To show the results of using a software, Lince (2022), said that with the help of Wezoot, he gained more money with half of the animals, by making decisions based in data. And Leão (2022) said that without the data, it is impossible to know where a producer is heading. All this enables the producer to spend more time monitoring the animals and not only work with them, helping preventing sanitary and productivity problems. By gathering and organizing the information, it also helps to make difficult decisions regarding the farm.