

Practice abstract

Dual-purpose poultry genotypes in organic and low-input outdoor farms

Problem

Animal welfare is an important factor for consumers' acceptance of products (eggs, meat) from organic and low-input poultry production systems. There is an increasing concern and awareness about the ethical aspects of killing of one-day-old male chicks from pure layers strains.

Solution

Implementing dual-purpose genotypes, where females can be used for both eggs and meat production and males for meat production makes the overall dual-purpose concept more sustainable. Dual-purpose females often have a lower egg production than efficient egg layers, but the males are expected to have an acceptable growth for meat production with a compromise between the performance of females and males.

Benefits

- Both females and males of the same genotypes are used to increase resource efficiency
- More sustainable production
- Ethical solution, higher welfare
- Genetic diversity
- More active birds using outdoor areas, less risk of feather pecking
- Higher/good product quality, e.g. eggs and meat
- Marketing differentiation levers
- Possibility to raise social concern and awareness among consumers
- Support change in the production system

Applicability box

Theme

Dual-purpose genotypes, slow-growing breeds in organic and low input outdoor production systems, no culling of one-day-old chickens, higher product diversity

Keywords

Animal welfare, poultry, breeding and genetics, nutrition, product quality, sustainability

Context

No geographical constraints

Application time

In all seasons; in colder climate winter veranda/winter gardens are recommended

Required time

Longer production period for slow growing males to reach desired weight at slaughter age

Planting outdoor areas

Allocation of foraging material (silages, hay)

Specific management requirements rearing the pullets

Period of impact

At all seasons, best in warmer seasons

Equipment

Technical equipment for foraging material

Best in

Organic and low-input production systems with access to an outdoor run, pasture rotation with mobile houses

Practical recommendation

- Provide more space indoors and sufficient nest area because dual-purpose females are bigger than hybrid layers
- Provide an attractive outdoor area with trees, bushes and vegetation as these genotypes can be more active than common genotypes and need conditions to express their natural behaviour
- When rearing dual-purpose females (pullets) allow access to foraging material, to perches in-door and to an attractive outdoor area to prevent unwanted behaviour
- Provide enrichment during the rearing period of the pullets, especially important in case of outdoor restriction due to Avian Influenza requirements (a covered veranda or similar is suggested to provide foraging material daily)
- Adapt marketing and pricing strategies to compensate the reduced performance

- Develop new recipes adapted to the different meat structure of dual-purpose females and males to be combined with dissemination activities, i.e. farm market events, supermarkets
- Support collaboration with dual-purpose chicken breeders and cooperation among farmers specialized in egg or meat production
- Monitor performance parameters. Adapt feeding to production potentials and cooperate with breeding companies for nutritional recommendations
- Performances on-farm of dual-purpose genotypes tested in the PPILOW project
 - Dual purpose females – laying period went from week 23 to week 60 with a laying rate ranging from 66.8 to 72% according to the genotype. Live weight recorded at 57 weeks ranged from 2.3 to 2.7 kg
 - Dual purpose males – One-day-old chicks from the selected genotypes were reared and slaughtered at 19 weeks, with a live weight of around three kg (space of the facilities to be calculated according to a longer growth period). The feed conversion rate (FCR; kg feed/kg meat) was 3.9

In the following pictures, you can see different dual-purpose genotypes, females and males, on-farm in organic production systems

Dual-purpose laying hens



Dual-purpose males on out-door area – 4-weeks



Rearing of dual-purpose pullets



Dual-purpose males – 14 weeks



Further information

Video

- [PPILOW web series: Dual Purpose Chicken Breeds](#)
- [Evaluation performance dual purpose genotypes](#)

Further reading

- Marianne Hammershøj, Gitte Hald Kristiansen and Sanna Steinfeldt² Dual-Purpose Poultry in Organic Egg Production and Effects on Egg Quality Parameters. *Foods* 2021, 10(4), 897; <https://doi.org/10.3390/foods10040897>

Weblinks

- www.ppilow.eu
- Check the Organic Farm Knowledge platform for more practical recommendations.

About this practice abstract

Publisher: INRAE - National Research Institute for Agriculture, Food and Environment

Authors: Sanna Steinfeldt (Aarhus University)



Contact: sanna.steinfeldt@anivet.au.dk

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