



Dual-purpose genotypes in organic egg production and effect on egg quality

Laying hens of different genotypes have been selected for generations for high yield and egg quality. This has resulted in efficient feed conversion and low body weight; whereby they are not suitable for meat production. Male chickens of egg-laying genotypes are therefore killed as day old. Due to the ethical dilemma and for better resource utilization, there is now more focus on other genotypes, the dual-purpose breeds, in order to be able to use the male chickens for meat production.

Dual-purpose study

The purpose of the study was to evaluate potential dual-purpose genotypes for the quality of their eggs compared to an efficient layer genotype.

Two dual-purpose genotypes with divergent characteristics were evaluated:

- **genotype A** represented an experimental crossbreed based on a broiler type male and an egg layer female,
- and **genotype C** was a crossbreed of a layer type.

These were compared to a rustic genotype B and a control genotype D, which was an egg layer. Eggs were collected from 21-54 weeks of age and a total of 990 eggs were analyzed. Parameters for egg weight, proportions of shell, yolk and albumen, along with quality parameters were measured. The layer genotype D produced the smallest eggs with the lowest frequency of blood and meat stains, compared to eggs from the two dual-purpose genotypes. The shell quality was best for layer genotype D. However, genotype A laid eggs of comparable shell quality, dry matter content in the albumen and yolk weight, and with the darkest and most reddish-yellow yolk. Genotype C, the second dual-purpose genotype, as well as the rustic genotype B, produced eggs of low-medium quality.

Conclusion

In conclusion, genotype A can serve as a dual-purpose genotype from an egg quality perspective and male chickens can be used for sustainable meat production.



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