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Assessing and Reducing the Environmental Impact of Meat from Slow-Growing Chicken Breeds

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Intro to Good Practice

Demand for slow-growing broiler breeds continues to rise in the Netherlands and across Europe. These breeds have largely been introduced for animal welfare reasons. However, they require more feed to reach market weight compared to conventional broilers. In addition, they are typically provided with more space, often including (covered) outdoor access. This setup results in higher emissions of harmful substances, and their manure contains relatively more nitrogen and phosphorus.

Background

Animal welfare in broiler production has received increasing attention in both the Netherlands and the EU. Initiatives such as the Better Life label (Beter Leven keurmerk) and organic farming standards promote the use of slower-growing breeds. Depending on the system, broilers must be kept for at least 56 days (Better Life) or 70 days (organic). These systems also require lower stocking densities and access to outdoor areas—covered outdoor space is permitted under the Better Life scheme.

While these measures significantly improve animal welfare, they also lead to a greater environmental impact. Feed consumption per kilogram of weight gain is higher, and emissions of nitrogen and phosphorus are increased. Additionally, the volume of manure produced per bird is greater than in conventional systems.

Picture 1. Slower growing broilers in covered outdoor access

Strategies to Mitigate Environmental Impact

A number of farm management practices can help to reduce the environmental footprint associated with slow-growing broilers:

- Using bedding materials that help limit ammonia formation.
- Adding substances to litter to reduce ammonia emissions.
- Lowering stocking density to around 25 kg/m² to reduce total manure production.
- Improving feed protein efficiency by adjusting the ratio of digestible to crude protein, in line with slower growth rates.

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- Reducing reliance on imported ingredients (such as soy) by sourcing feed components from within the EU, preferably locally, to lower the carbon footprint.
- Processing manure regionally to support closed nutrient cycles and reduce transport-related emissions.

Costs and Benefits

Transitioning to slow-growing broiler systems can offer several advantages—provided market conditions support it:

• Improved return on investment and profitability, assuming retailers are willing to pay a premium. In the Netherlands, this is the case under the Better Life 1-star label. Without such support, production costs may rise by approximately 30%.

• Lower mortality rates.

- Enhanced animal welfare.
- Reduced energy and water use per housing unit.
- More effective waste management and improved circularity.
- Better compliance with regulations and supply chain requirements.
- Increased job satisfaction among farm workers.
- Stronger reputation within the sector and among consumers.

Picture 2. Slower growing broilers with straw as enrichment material

Summary

Slow-growing broiler systems are gaining popularity due to their clear animal welfare advantages. However, they present environmental challenges such as increased feed usage, higher emissions of nitrogen and phosphorus, and greater manure output. These impacts can be mitigated through practical farm-level strategies, including optimized litter management, improved feed protein efficiency, reduced stocking densities, and the use of locally sourced feed ingredients. Regional manure processing can also help close nutrient loops. When supported by a market that pays a premium—such as under the Better Life label in the Netherlands—these systems can be both environmentally and economically sustainable. They offer farmers benefits such as lower mortality, improved animal welfare, better compliance with environmental regulations, and enhanced public image and job satisfaction.

Welfare, environmental impact and economy of broiler chicken production

An overview of the lessons learned from the Greenwell project

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