

Preventing Lameness in Broiler Chickens



Animal welfare is a very complex concept but there is general agreement within the scientific community and beyond that our farm animals should be able to move easily and be maintained in good health, as described in the Welfare Quality[®] fact sheet 'Principles and criteria of good animal welfare'. Lameness in broiler chickens is one of the issues being tackled in the EU-funded Welfare Quality[®] research project designed to integrate farm animal welfare into the food chain by developing reliable on-farm welfare assessment systems and practical strategies to improve farm animal welfare. According to researchers participating in this project, farmers often significantly underestimate the amount of lameness in their broiler flocks and in doing so they risk reducing the birds' welfare as well as product quality and profitability. Between 10% and 30% of the birds in European broiler flocks may suffer from painful leg disorders caused by bone and joint infections as well as skeletal abnormalities, both of which are a result of a fast growth rate during the first few weeks of life. Encouragingly though, Welfare Quality[®] researchers have discovered how a different diet and feeding regime can significantly reduce lameness and thereby improve animal welfare.

A new kind of diet

Welfare Quality[®] has shown that lameness in broilers can be reduced by slowing down the speed at which they grow during their first few weeks and then speeding it up once their bones have developed. By using a new combination of two diets and a sequential feeding method the researchers discovered that they could slow down growth during a chick's early stages without any reduction in final carcass weight.

The researchers recommend a 48-hour feeding cycle with two diets instead of the

traditional continuous distribution of a single diet.

For the first seven days of life, broiler chicks should be fed a standard starter diet. Then, from day 8 to day 28 the diets should rotate every 48 hours between a low energy, high protein (E-P+) diet and a high energy, low protein (E+P-) diet. That makes for a total of 10 cycles of E-P+, E+P-.

The birds should then be given a standard finishing diet from day 29 onwards. In total, this novel regime not only reduced instances of lameness but also brought the



The recommended diet to prevent lameness.

This research was executed within the third Subproject of Welfare Quality®, which focuses on the development of practical strategies to improve farm animal welfare.

Research topics are:

- Improving human-animal relationships
- Genetic solutions to welfare problems
- Eliminating injurious behaviours
- Reducing lameness in cattle and broilers
- Minimizing neonatal mortality in pigs
- Alleviating social stress in pigs and cattle

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broilers up to standard slaughter weight without the need any additional feeding days.

An E-P+ diet should consist of 97% of the energy and 121% of the protein of a standard diet, respectively. For the E+P- part of the feed cycle, the diet should be 103% of the energy of a standard one with 79% of the protein.

Is this new method more expensive?

Welfare Quality® researchers are still analyzing the exact price differences between the broiler standard diet and the sequential one, but initial results suggest that the sequential one was never more expensive than the standard one. The cost of the sequential one became even lower when protein-rich feed stocks like rapeseed and DDGS (byproducts from bioethanol production) were cheap because they can be used very effectively to replace other more expensive dietary components in the E-P+ part of the cycle.

A win-win situation

The sequential feeding method discovered by the Welfare Quality® researchers could be a win-win situation for the chickens and the farmers. It could improve the birds' welfare by reducing lameness at no extra cost while safeguarding the farmers' profits at the same time.

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This fact sheet is available in several languages on the Welfare Quality® website www.welfarequality.net. Other topics like 'Principles and criteria of good animal welfare' and 'Reducing Lameness in Dairy Cows' or 'Preventing Social Stress in Beef Cattle' are listed there as well in easily downloadable documents.



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Welfare Quality® is a European research project focusing on the integration of animal welfare in the food quality chain. The project aims to accommodate societal concerns and market demands, to develop reliable on-farm monitoring systems, product information systems, and practical species-specific strategies to improve farm animal welfare. Forty-four institutes and universities, representing thirteen European countries and four Latin American countries, participate in this integrated research project.

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