

Health and welfare in organic laying hens in The Netherlands

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Abstract

The Dutch organic laying hen farmers wanted to know the state of the art of health and welfare in their sector. They also wanted to know how they could influence the health and welfare of their animals in a positive way. Forty nine flocks on 43 farms were visited in 2008 and 2009. The farmers were interviewed and per farm 50 animals between 50 and 60 weeks of age were caught and examined. Health problems according to the farmers were E. coli (37 % of the flocks), blood mites (33 %), Infectious Bronchitis (31 %), piling (31 %), skin infections (22 %), 'burnt out' hens (22 %), parasitic worms (18 %) and chronic gut infection (12 %). The animal scoring showed that 68% of the hens had no/little feather damage, 24% had moderate feather damage and 8% had severe feather damage. Thirteen percent of the hens had skin wounds, 21 % had breast bone deformities and 9% had foot pad wounds. This paper only gives descriptive information. Statistic relations between several farm factors and health and welfare aspects are published elsewhere.

Key words: organic laying hens, health, welfare, feather pecking

Introduction

This study was done because there was no actual overview of animal health and the farmers were in need of practical clues for maintaining or improving animal health.

Material and methodology

An invitation to join the study was sent to all organic laying hen farmers. Then they were called in alphabetical order to ask them whether they wanted to join. We stopped calling as soon as we had 50 flocks. Unfortunately in a later stage the results of one flock could not be used. In 2008 and 2009 data were collected of 49 flocks on 43 farms when they had an age between 50 and 60 weeks. There was a questionnaire for the farmer about the performance of the hens and the way he managed them. Observations were done in the stable and in the outdoor run. A manure sample (20 fresh droppings mixed together) was taken and sent to the Animal Health Service for analysis on parasites. From every flock 50 hens were scored individually for feather cover (Tauson et al., 2005), skin colour on nude areas, skin wounds (Tauson et al., 2005), foot wounds (Tauson et al., 2005), breast bone deformations and they were weighed. From 35 flocks also information about the rearing period could be collected.

Results and discussion

Here we present the results only in a descriptive way. The paper with the complete and statistical worked out results will be submitted elsewhere.

Farms and breeds

The farms kept a mean of 9300 laying hens. Farms with poultry as the only branch kept a mean of 14.700 hens. Most used breeds were Silver nick (51 %), Hyline silver (20 %), Hyline brown (10 %) and Lohmann brown lite (8 %).

Housing

The hens arrived on the laying farms at the mean age of 16.8 weeks. Most of the times (90 %) they were received on litter or a mixture of sand and litter. 50 % of the farms with a veranda offered these to the hens within 1-2 days after arrival. The other 50 % of the farms offered the veranda at the mean age of 19.7 weeks, also if the veranda was considered as 'stable area'. The same happened for offering the outdoor run. 45 % of the farms had aviaries, the other had floor stables. In the litter area most of the times only dry manure was available, on 29 % of the farms 'real litter' was still 'recognisable'. This means that on most farms a simple mean of 'environmental enrichment', such as edible litter, was not available. On 80 % of the farms no ammonia was smelled in the stable, which means that on most farms the air quality was in order. 45 % of the flocks had only a bit of daylight, 39 % had sufficient, 12 % had much and 4 % had no daylight. Concerning the amount of daylight, which is regarded as a kind of environmental enrichment, 45 % of the farms should improve the situation. 80 % of the flocks had an outdoor run with less than 25 % of its surface covered with trees or bushes. 14 % of the flocks had more than half of the surface covered. Bushes and trees provide shelter, which makes the hens feel safe in the outdoor run. Of flocks with more shelter in the outdoor run, a higher percentage of the animals is seen outside than in runs with less shelter (Bestman and Wagenaar, 2003). This way, shelter contributes to animal welfare.

Additional forages

Additional forages, such as grains or roughage, are a kind of environmental enrichment. 67 % of the flocks received scattered grains, 41 % received grit, 67 % received vitamins and minerals, 24 % received roughage (shredded maize plants, lucerne, grass products) and 31 % received other feeds (corn cob mix, maize, triticale, oats, beans, lupines, rape, rice cakes, bread).

Performance and mortality

At 30 weeks of age the mean daily feed intake was 129 gram, the laying percentage 91 % and the mortality 2 %. At 60 weeks the mean daily feed intake was 133 gram, the laying percentage 80 % and mortality 7.8 %. A mortality of 7.8% looks satisfying, but the experience is that after this age it can repeat rapidly, which means that it can become much higher (van Niekerk, personal communication). According to the results of management programme Albatross the mean mortality of about 20 flocks in 2007-2008 was 16% at 72 weeks.

Health

69 % of the poultry farmers judged the health of their flock as 'very good' at the flocks' arrival on the farm. Health problems according to the farmers were: E. coli (37 % of the flocks), blood mites (33 %), Infectious Bronchitis (31 %), piling (31 %), skin infections (22 %), 'burnt out' hens (22 %), parasitic worms (18 %) and chronic gut infection (12 %). Blackhead, fatty liver syndrome, botulism and amyloidosis were mentioned only incidentally. Not all health problems mentioned here, are 'primary' diseases. E. Coli for example is known as a secondary health problem, which occurs after the animals have become vulnerable due to another health problem or poor management. 25 % of the flocks was not dewormed till the farm visit at 50-60 weeks, 65 % was 1-4 times dewormed and 10 % 5-6 times. Flocks that were not dewormed, mostly had light worm infections, flocks that were few times dewormed had less times a light worm infection and flocks that were dewormed regularly (5-6 times) were hardly infected, which is as expected. However, it is questionable whether worms as such are a health problem or whether they become only a problem after the animals have become vulnerable due to disease or poor management. For several reasons (reduce the risk of resistance of worms against anthelmintics and because of residues in the eggs) the Dutch Animal Health Service advises not to deworm in a preventive way. They advise to monitor the manure on a regular base and only in case of positive test in combination with health problems, to deworm (www.gddeventer.nl).

Feather pecking damage and cannibalism

68 % of the flocks had no or a little bit of feather pecking damage, 24 % had moderate damage and 8 % had severe damage. Before 2003 these percentages for Dutch organic flocks were relatively 29, 19 and 52% (Bestman and Wagenaar, 2003), which means that the amount of feather pecking damage decreased during the last years. It is very well possible that this might be related to the more professional rearing of organic laying hens in the Netherlands. After a study by Bestman et al., (2009), which revealed which circumstances in commercial organic rearing flocks were related to decreased feather pecking, several improvements were made, such as litter or roughage from the beginning and more attention for perches or elevated levels from a young age as well, which are known to have a positive influence on feather pecking (Bestman et al., 2009). Cannibalism, defined as skin wounds on nude body parts, were seen on a mean of 13 % of the hens. This percentage makes clear that further improvement are necessary.

Breast bone deformations

A mean of 21 % of the hens from every flock has a breast bone deformation: bow (6.6 %), notch (10.4 %) or knob (3.6 %). Probably bows are caused by bone weakening, while notches and knobs might be old breaks. If 14% of the hens have broken breast bones, this is a serious welfare problem, because bone breaks are painful.

Foot wounds

A mean of 9 % hens per flock had wounds on their foot soles. It is not clear what the causes are, but probably wounds are related to suboptimal housing or management and they are supposed to cause pain when hens perform their normal behaviour (walking and scratching). They are a welfare problem.

Body weight

The body weights were compared with the standards of the breeding companies. The hens belonging to the two most common breeds had lower weights than the standards: Silver nick 89 gram and Hyline silver 103 gram lighter. It is not clear how the breeding standards are defined. They sometimes vary per country for the same breed. Therefore it might be too early to discuss the difference if the standard does not have a scientific base, but more a commercial base.

Conclusions / Suggestions to tackle the future challenges of organic animal husbandry

Several health and welfare problems in organic laying hens have been identified and quantified, as well as several risk factors for health and welfare. Health and welfare problems for example are still some feather pecking in 32% of the hens (although it decreased considerably last years), cannibalism in 13% of the hens, broken breast bones in 14% of the hens and foot wounds in 9% of the hens.

Opportunities for improving animal welfare, for example by means of environmental enrichment, are: providing litter on a regular base during the whole laying period, provide more daylight, provide much more shelter in the outdoor run and give more additional forages such as scattered grains and roughage.

The results of this study and the observations on the farms were used to write the book 'Poultry signals. Practical guide for animal oriented poultry husbandry (Bestman et al, 2011). This book is available in Dutch, English, German, French, Italian and Russian.

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