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## THE EUROPEAN UNION LAYING HEN DIRECTIVE AND OTHER EUROPEAN UNION DEVELOPMENTS

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### I. INTRODUCTION

The European Union Council Directive 1999/74/EC "laying down minimum standards for the protection of laying hens" was passed on 19 July 1999 and hence is being made law in each E.U. member state. Some key aspects of the legislation will be discussed here and then prospects for legislation on broiler chickens will be considered.

### II. THE LAYING HEN DIRECTIVE

#### (a) Unenriched battery cages

The use of battery cages like those in use in much of the world will be prohibited from 1st January 2012. In the meantime, from 1st January 2003, hens in such cages must be provided with 550 square cm per bird, feed troughs must be 10cm per hen, cages must be 40 cm tall and cages must have claw-shortening devices.

#### (b) Enriched cages

Laying hens in enriched cages must have 750 square cm per bird, a nest, litter for pecking and scratching, perches allowing at least 15 cm per hen, 12 cm per bird of feed trough and claw-shortening devices.

#### (c) Alternative systems

This refers principally to aviary systems which must provide space on the ground and on tiers for nine laying hens per square m. There must be 10 cm of feeder, 15 cm of perch and 250 square cm of littered area per hen and one nest for each seven hens.

In all systems, beak-trimming of birds less than ten days old is permitted.

### III. SOME PRACTICALITIES OF THE LAYING HEN DIRECTIVE

An important criticism of the battery cage system has always been that much space in the building is wasted. This space could be used by the birds with considerable beneficial effect on their welfare (Broom, 1992). Table 1 shows the volume of building needed for different systems. It is clear that aviaries can house as many birds in a building as battery cages.

Table 1. Space occupied by hens in different systems (E.U. Scientific Veterinary Committee Report 1996).

Housing system	Floor area (Birds per m <sup>2</sup> )	Volume of building (Birds per m <sup>3</sup> )
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Battery cages: 3, 4, 6, 8 tiers	20-22.2	10 - 11.9
Multifloor, Naturel or Natura aviary	8.3 - 9.6	11.4
25 birds m <sup>-2</sup>		
20 birds m <sup>-2</sup>	8.7 - 9.8	9.1
Dutch Tiered Wire Floor aviary	10.9	8.3
Deep litter	7.0	2.9

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Injurious pecking is a key problem in all laying hen systems. Mortality can be high when it occurs in large groups. However, in well designed systems its incidence can be low. In discussions about whether enriched cages or aviary systems are the future for egg production, questions about injurious behaviour and other aspects of welfare in relation to group size are important. Some evidence concerning this question is presented in Table 2.

Table 2. Number of birds per group : welfare.

In cages, when more than four birds present, increased group size leads to more fearfulness, aggression, feather-pecking, cannibalism and adrenal weight and poorer egg production per bird (11 papers).

Feather pecking increases in a linear way with group size in cages.

In pens with a solid floor the effect of group size depends on design.

Commercial Tiered Wire Floor units in Holland with about 7,000 - 10,000 birds per unit have levels of feather pecking and cannibalism less than or similar to those in cages.

Several studies have compared costs and mortality in different systems. Badly designed or managed systems can always give bad results but the data in Tables 3,4 and 5 are from good, large scale, commercial systems.

Table 3. Comparison of battery cage and free range (Sanders 1996).

	Battery cage	Free range
Mortality (%)	5.2	6.4
Eggs per hen	282	253
Feed per hen per egg (g)	113	129

Table 4. Comparison of battery cage and aviary (van Horne 1996)

	Battery cage	Aviary (beak-trimmed mostly in Tiered-Wire-Floor)
Mortality (%)	9.2	6.7 *
Eggs per hen	331	325
g feed per g egg	2.27	2.20 *

\* p&lt;0.05

Table 5. Comparison of battery cage, enriched cage and get-away cage (Abrahamsson *et al.*, 1995) \* p<0.05

	Battery cage	Enriched cage	Get-away cage
Mortality (%) Expt 1	8.0	7.8	13.3
Expt 2	5.8	2.6	8.6 *
Egg mass per hen Expt 1	51.7	51.0	50.0 *
Expt 2	53.4	53.2	50.3 *
Feed per hen per day (g.)	123.2	116.1	117.4
	129.0	127.0	120.6

Careful comparisons of the costs of egg production in battery cages, somewhat enlarged battery cages, aviaries, enlarged/enriched cages, percherries, deep-litter and free range are summarised in Table 6. The data for enriched cages are not good because they are only just becoming available commercially. Some practical problems have not yet been solved in enriched cages, in particular the provision of dust-bathing facilities which do not result in rapid spreading of sand, etc., in the machinery for food provision and egg removal. Important problems in relation to welfare are cage height being too low for wing-flapping and insufficient possibilities for investigative pecking because of a non-preferred wire-mesh floor.

Table 6. Percentage difference from battery cage 450 cm<sup>2</sup>/bird in total cost per kg egg.

	Battery cage 560cm <sup>2</sup> /bird	Aviary 20 birds m <sup>-2</sup> of floor	Cage 833cm <sup>2</sup> /bird	Perchery	Deep litter	Free range
Elson (1985)	+ 5					
Haartsen and Elson (1989)		+ 4.6			+16.5	
Tucker (1989)				+ 11.8		+ 51.6
van Horne (1996)		+ 8.3				
Elson (1995)			+ 23	+ 26		+ 45
(estimates: 500cm <sup>2</sup> /bird)						
EU Scientific Veterinary Committee (1996) estimate			enriched cage + 10-20			

#### IV. CONCLUSIONS CONCERNING HEN HOUSING

At present, the viable alternatives to the battery cage are the best of the aviary systems. These sometimes require beak-trimming with current designs and genetic strains. It seems unlikely that enriched cages will compete economically if they provide for the needs of the hens. New genetic strains of hens which show less injurious pecking are needed.

## V. THE EUROPEAN UNION BROILER REPORT

On 21st March 2000 The E.U. Scientific Committee on Animal Health and Animal Welfare adopted a Report (SANCO.B.3/AH/R15/2000) entitled "The Welfare of Chickens Kept for Meat Production (Broilers)". The two principle recommendations of this report were as follows. Firstly, that genetic selection of broilers should change so that serious welfare problems associated with leg disorders and ascites are substantially reduced. It was considered that this would necessitate selection for slower growth. Secondly, that stocking density should be limited to 30 kg per square m. in well-controlled environments and to lower stocking densities in less well-controlled environments. Environmental enrichment and measures to stimulate locomotion should be encouraged.

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