



Opinion on Beak Trimming of Laying Hens

November 2007

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OPINION ON BEAK TRIMMING OF LAYING HENS

Scope

1. To advise the Government of the implications for the welfare of laying hens of the proposed ban on beak trimming, which is due for implementation by 31 December 2010 in England, Scotland and Wales.

Background

Extent and nature of the topic covered in the Opinion

2. Beak trimming has historically been performed in commercial table egg layers (kept in either cage, barn or free range systems), breeding turkeys, some commercial turkey flocks, broiler breeders and Barbary/mule ducks. This Opinion covers the consequences of beak trimming for the welfare of laying hens and includes an appraisal of a new technique, infrared beak treatment (as developed by the US company, Nova-Tech), which has potential advantages over traditional methods of beak trimming.

3. The Animal Welfare Act 2006 defines a mutilation as “.... *a procedure which involves interference with the sensitive tissues or bone structure of the animal, otherwise than for the purposes of medical treatment.*”

4. The Council of Europe Recommendation concerning Pigs (entered into force June 2005) states that a mutilation is “....*a procedure carried out other than for therapeutic or diagnostic purposes and resulting in damage to or loss of a sensitive part of the body or the alteration of the bone structure.*”

5. On the basis of these definitions it would be difficult to argue that either conventional hot blade or cold-cut trimming, or infrared treatment techniques, constitute anything other than a mutilation either from the initial insult to the beak, or the end result. It may therefore be more appropriate to accept this and then to pursue the cost/benefit aspects of such a procedure in terms of welfare.

Welfare concerns or contentious issues and/or opportunities to improve welfare

6. The reason for beak trimming is to reduce the risk of injurious pecking that can, if unchecked, lead to significant feather and skin damage, cannibalism, with attendant pain and suffering, leading sometimes to death (occasionally with mortality in excess of 20%). Once started, problems are difficult to resolve, leading to chronic, often irreversible, injury and damage. Since the beak is a sensory organ and a primary means by which a bird interacts with its environment, beak trimming may affect its ability to express normal behaviour while the act of beak trimming itself may cause pain, suffering and distress, thereby compromising several of the Five Freedoms.

7. If injurious pecking could be eliminated by other means, for example through genetic selection, the use of controlled light for housed birds or other management practices, then the need for beak trimming would disappear and this mutilation would no longer be needed.

Number of animals involved, duration and extent of poor welfare or suffering

8. In 2005, the UK was the sixth largest producer of table eggs in the EU, having about 29.5 million laying hens producing 8,847 million eggs per year. The 2006 Census identified the UK laying flock as comprising 28.6 million hens. The UK egg market is currently split between about 49% retail (shell eggs), 28% processing and 23% food service. Egg Packing Station figures for 2006 (Defra) indicate that the split between production systems was as follows:

Conventional cage	62.7%
Free range	27.2%
Barn	5.1%
Organic	5.0%

9. Most, if not all, hens destined for free range and barn production are required to be beak trimmed. It was not possible to get accurate information on the proportion of hens in conventional cages which are beak trimmed, but certainly some, and probably a significant proportion, are beak trimmed. Hens destined for organic production are not routinely beak trimmed.

Legal context, including current and imminent legislation or regulations produced by the GB Governments or the European Union

10. EU Directive 99/74/EC lays down minimum standards for the protection of laying hens. This Directive bans all mutilations but allows Member States to authorise beak trimming to prevent feather pecking and cannibalism with certain provisos, e.g. that it is carried out by qualified staff and the procedure is done at less than 10 days of age.

11. English implementing regulations for this Directive specify a date of 31 December 2010 for a complete ban. The Welfare of Farmed Animals (England) Amendment Regulations 2002 (SI 1646) allows beak trimming only until 31 December 2010. Similar legislation has been produced in Scotland and Wales.

12. In 2002, the Government set up a Beak Trimming Working Group. Its purpose was to devise an action plan through discussions with stakeholders to work towards a ban on beak trimming in all systems of poultry production by the end of 2010. The stakeholders included industry representation through BEIC, BPC, BFREPA, commercial rearing, integrated layer and layer breeding companies, RSPCA, CIWF, SSPCA, BVPA, FAWC and the Defra Animal Welfare Team (see Appendix). The Working Group published a Code of Best Practice for Beak Trimming in March 2004 (BEIC, 2004).

13. Defra consulted with the livestock industry, veterinarians, welfare scientists and other stakeholders on defining mutilations and those which may or may not be derogated within the new Mutilations (Permitted Procedures) (England) Regulations 2007 (SI 1100). Similar legislation has been produced in Scotland and Wales.

14. It is also relevant that EU Directive 99/74/EC will prohibit the use of conventional cages within the European Union from 1 January 2012, with production then only allowed to take place either in enriched cages or non-cage systems (free range, barn or organic). FAWC has recently advised the Government on the welfare of laying hens in enriched cages in its Opinion on Enriched Cages for Laying Hens (FAWC, 2007). If injurious pecking cannot be controlled by beak trimming or other means, then there may be significant adverse consequences if a ban on beak trimming is introduced by 31 December 2010.

National and/or international considerations

15. Reports from Switzerland, where both cages and beak trimming have been banned since 1992, suggest that, with experience, the need to beak trim can be avoided. The reason for this success is unknown but is possibly related to farm type or size, bird type, husbandry and other factors.

16. The LayWel Project of the EU (a research project funded by the FP6 European Research Programme and national funding from different EU countries) has studied the welfare implications of changes in production systems for laying hens across the EU. One of the major conclusions of the project was that *“much greater emphasis should be placed on selecting genotypes with reduced damaging feather pecking tendencies for use in alternative housing systems for laying hens”* (Work Package 7, LayWel Project 2006, www.laywel.eu).

Commercial interests and developments

17. For commercial laying hens, chicks are trimmed manually, either at day old or up to 7 days of age using a hot blade to remove and cauterise the tip of the beak. The accepted procedure is to remove not more than one third of the upper and lower beaks or not more than one third of the upper beak only. Whilst BEIC estimates the cost of beak trimming to be about 3p/bird, the British industry believes this mutilation is necessary to ensure good welfare in other respects and to avoid the economic consequences of injurious pecking.

18. Since June 2006, RSPCA Freedom Food has given interim derogation for commercial layer hatcheries to use the new infrared beak treatment (Nova-Tech, *vide supra*) for chicks destined for Freedom Food laying farms.

19. For commercial turkeys and breeder turkeys destined for pole barns that are naturally lit, manual trimming is carried out by cold cutting up to 21 days of age. The industry believes that beak trimming is more consistent and

significant re-growth is prevented when turkeys are trimmed at about 21 days of age rather than at day old.

Advice by FAWC and/or EFSA relating to the topic, especially within the last 2/3 years

20. Beak trimming of laying hens was criticised in the original Brambell Committee report (Brambell Committee, 1965) due to the pain inflicted by the procedure and the loss of an important sensory organ. There was, however, recognition that in extensive or floor-based systems the consequences of poor welfare through cannibalism indicated a case for beak trimming to be allowed to continue. The Brambell Committee rather optimistically felt that alternative strains of birds which would not have a propensity to peck might be identified within the following few years.

21. In our Report on the Welfare of Laying Hens (FAWC, 1997), FAWC stated:

Paragraph 62. *"We consider that the mutilation of all livestock is undesirable and continue to regard beak trimming as a major welfare insult. We do, however, recognise that in some systems such procedures may currently be necessary. Where the operation is performed correctly, it can help to avoid worse problems. Nonetheless, the ultimate aim should be the avoidance of beak trimming."*

22. FAWC made the following recommendations to Government:

Paragraph 69. *"We consider that beak trimming is a most undesirable mutilation which should be avoided if at all possible and only used if essential to prevent worse welfare problems of injurious feather pecking and cannibalism."*

Paragraph 73. *"We recommend that, if beak trimming is essential, it should be carried out at up to 10 days of age (ideally 7 to 10 days of age) which is currently best practice in the UK industry. Neither trimming nor re-trimming of older birds should be carried out other than under the recommendation of a veterinarian and only in order to avoid a worse welfare problem, e.g. caused by an outbreak of cannibalism."*

23. These recommendations have been incorporated in the current Code of Recommendation for the Welfare of Livestock – Laying Hens (Defra, 2002) which states:

Paragraph 70. *"Where beak trimming is carried out, it should, wherever possible, be restricted to beak tipping; that is the blunting of the beak to remove the sharp point which can be the cause of the most severe damage to other birds."*

Paragraph 71. *“Beak trimming should be carried out to the highest possible standards by trained operators. Operators should continually be re-evaluated for efficiency of their beak trimming skills.”*

24. More recently, FAWC has advised Defra on its preliminary views on the new infrared beak treatment (letter to Defra Animal Welfare Team, 19 January 2005). FAWC wished to see further development of the technique but only in parallel with work on other factors related to the aetiology of injurious pecking, including management practices, environmental enrichment, lighting, housing and genetic traits.

Evidence

Scientific knowledge relating to the topic

25. In the early development of the laying hen industry it was common practice for beak trimming to be carried out on older birds (~16 to 18 weeks) but this practice was discontinued as evidence of neuroma formation and the possibility of phantom limb pain became available (Beward and Gentle, 1985; Duncan *et al.*, 1989; Gentle, 1991; Gentle *et al.*, 1990, 1997). Other concerns were the quality and consistency of manual beak trimming of older birds on farms because of the skill of the operators, and the suitability of facilities. Quality of manual beak trimming can be greatly improved if it is undertaken in the hatchery when the chicks are day old, where the procedure can be carried out and audited in a more controlled manner. Even so, the consistency of manual beak trimming can still fail to be optimal.

26. Gentle *et al.* (1997) concluded that the adverse effects of beak trimming chicks of laying strains at one or 10 days of age were minor and were “clearly outweighed by the reduction in cannibalism”. Applying the beak trimming procedure to younger birds appeared to avoid the long-term chronic pain that can occur in the stump of the beak when older birds are beak trimmed (Beward and Gentle, 1985; Duncan *et al.*, 1989; Gentle *et al.*, 1990; Gentle, 1991).

27. The LayWel project, in relation to injurious pecking, concluded that “much greater emphasis should be placed on selecting genotypes with reduced damaging feather pecking tendencies for use in alternative housing systems for laying hens” (www.laywel.eu).

Infrared beak treatment as an alternative to hot blade beak trimming

28. Currently, there is much interest amongst the poultry industry in the use of a novel infrared beak treatment (developed by Nova-Tech) as an alternative to hot blade beak trimming. The procedure (carried out at day old in the hatchery) involves focusing a high intensity infrared beam at the tip of the beak, which penetrates the hard outer horn, damaging a clearly demarcated zone of the underlying dermis and sub-dermal tissues. One to

three weeks later, the tissue behind the damaged area heals and the beak tip is lost. During treatment, the chick's head is firmly retained in a rubber holder that prevents movement of its head, enabling precise and reliable treatment of the beak. The technique minimises operator error and inconsistency, although still requiring the chick to be restrained, and subsequently leaves the chick with a shortened beak.

29. Initial observations by FAWC of infrared beak treatment on a trial basis in day old broiler breeder chicks showed advantages over manual hot trimming methods. These included the absence of an open wound with potential adverse sequelae (e.g. secondary bacterial infection), while the chicks appeared to recover more quickly. Subsequent observations of treated birds at 6 weeks of age suggested that the infrared beak treatment achieved its aim of precise and consistent removal of the tip of the beak without evidence that the bird suffered stress, pain or any lasting effects. A transient, but statistically significant, depression in bodyweight was reported in all beak trimmed or treated birds, regardless of technique, at 21 days although this had disappeared by 28 days of age.

30. However, FAWC had concerns around chick handling, restraint of the bird's head during the infrared treatment, suspension of the chick by its head and automated movements of the carousels. Further development work appears to have allayed many of these concerns and the modified method has been observed by FAWC. Chicks are now held for a shorter period (about 15 seconds); the head and body restraint of the chick is firmer; and the motion of the carousel is smoother with reduced acceleration and deceleration of the chick as it is transported around the equipment. Throughput using this technique can be up to 120,000 chicks per day, which allows chicks to be despatched from the hatchery and delivered to the farm on the day of hatch. Previously, where the slower hot blade trimming was used, chicks often had to be kept in the hatchery overnight for delivery to the farm the next day.

31. Gentle and McKeegan (2007) have evaluated the effects on broiler breeder chicks of infrared beak treatment, compared with hot blade beak trimming. They concluded "that there were no significant effects on the behaviour of the chicks in the first hour after trimming or in the subsequent six weeks. Variability in beak length was low within the treatments and there was significant regrowth, but it was least in the birds that had been hot blade trimmed at seven days. Both beak trimming methods were associated with small but significant reduction in bodyweight, with the hot blade treated birds being more affected." Furthermore, "no effects of the treatments were recorded during the six weeks that could be considered as indicating pain or stress." They added the caveat that "the results presented here may not necessarily apply to layer strains, and the responses of layer chicks to infrared beak trimming warrant a separate study."

32. At the time of writing this Opinion, specific trials have not been undertaken to test the effects of the infrared treatment on the welfare of pullets as they come into lay. However, the large number of chicks now being treated commercially by this method are being closely monitored (by industry

and the RSPCA) to determine the impact on behaviour and the incidence of injurious pecking and cannibalism.

Other pertinent information

33. Other work on injurious pecking has examined the use of various techniques to blunt the beak using abrasive surfaces during normal feeding or investigative behaviour. Results to date have not been encouraging that these produce significant welfare benefits.

Statement of areas of poor or incomplete evidence, including irresolvable or disputed issues

34. Long term findings of the use of the infrared beak treatment in laying hens throughout lay and other poultry are incomplete, and need to be collected and analysed. As a result, there is currently incomplete information on which to assess fully the success of this technique, although anecdotal information to date is encouraging.

35. Scientific research is needed on the structure and function of the beak of chicks, poults and ducklings to provide further evidence on the consequences of beak trimming or infrared treatment. This should answer questions relating to acute and chronic pain arising from mutilation of the beak of poultry species, including the possibility of phantom limb sensations. Furthermore, the use of genetic selection to discourage or eliminate injurious pecking should be the subject of further work by the poultry industry, perhaps supported by the Government.

Critical issues

Statement of the critical issues and questions

36. Beak trimming of laying hens and other poultry is a mutilation that is currently allowed in the UK because it reduces the incidence of injurious pecking. However, the use of controlled light for housed birds may also be effective in the management of injurious pecking, though there are other concerns over its effects on welfare. The infrared beak treatment as an alternative to the hot blade technique is a most promising development though it would be premature to state that its use has been proven to be completely satisfactory.

37. In terms of the Five Freedoms, the main concerns over beak trimming arise from the failure to satisfy the Freedom from pain, injury or disease, and the Freedom to express normal behaviour. In particular, the critical question is:

- a). Can beak trimming by any method be justified to allow large numbers of laying hens and some other poultry to be kept on a commercial scale?

There are other secondary questions too, but there now appears to be enough evidence to advise the Government on the primary question. The secondary questions are:

- b). What are the effects of beak trimming on the functional use of the beak for normal behaviours such as foraging or investigative behaviour?
- c). If beak trimming of laying hens is banned by 31 December 2010, are the alternative means of reducing injurious pecking as or more effective?
- d). Is beak trimming justifiable, on the grounds that it allows hens to be kept in systems of husbandry that improve welfare in other respects?
- e). Will consumers accept the necessity of beak trimming, perhaps through education?

Ethical analysis

Benefits and costs for animals, farmers and other interested parties

38. As defined in UK law, all methods of beak trimming, including infrared beak treatment, comprise a mutilation, but are currently lawful. The benefits of beak trimming need to be weighed against the trauma to the bird during beak trimming or infrared treatment, any chronic pain or discomfort and the loss of an important sensory tool for the bird in exploring its environment.

- a). Trauma to the bird during the procedure.* This comprises restraint either manually or mechanically, followed by cutting, heating or infrared treatment of an organ containing a high density of nociceptors.
- b). Chronic pain as a result of the procedure.* There is little evidence for chronic pain following beak trimming using either hot or cold blade methods, provided this is carried out on birds up to 7 days of age.
- c). Loss of a sensory tool.* Some experimental work in beak trimmed birds shows less investigative pecking, reduced feed intake and slower growth than in birds with intact beaks. However, these effects have not been demonstrated consistently in all trials and industry experience is that unevenness or poor subsequent performance is not evident.
- d). Loss of integrity of a living animal by the removal of part of its beak.*

Interested group	Benefits	Costs
Laying hens (and potentially other poultry species too)	Reduced morbidity and mortality arising from injurious pecking Less cannibalism Improved feather cover Fewer aggressive interactions Less fear	Acute pain initially, followed by a pain-free period, followed by discomfort Chronic pain but predominantly in birds trimmed at 16-18 weeks, and associated with neuroma Sensory deprivation Impaired ability to feed
Poultry farmers	Reduced mortality Improved feed conversion due to less wastage and/or better plumage	Cost of beak trimming or infrared treatment Possible increase in early chick mortality
Consumers	The availability of cheap eggs from large scale production systems	Concern over loss of integrity (mutilation) of a living animal

Opinion

Advice

39. FAWC has long considered that the mutilation of all livestock is undesirable and continues to regard beak trimming as a major insult to the hen's welfare. However, the major question addressed in this Opinion is: can beak trimming by any method be justified to allow large numbers of laying hens - and some other poultry - to be kept on a commercial scale?

40. In laying hens with intact, untrimmed beaks, the onset of injurious pecking is unpredictable and sudden, causing significant pain, distress, suffering and death to a substantial proportion of birds in flocks kept in all systems of husbandry, including hens kept on free range where the use of controlled lighting is not possible.

41. On the welfare criteria of the acute pain associated with the procedure, the subsequent chronic pain in the trimmed beak and the loss of part of a sensory organ, some of the adverse effects of beak trimming can be minimised by undertaking the procedure when the chicks are young (less than 7 days and preferably at 1 day of age) by trained, experienced personnel with

regular audit. In general terms, this best practice applies to both hot blade beak trimming and infrared beak treatment.

42. FAWC therefore advises the Government that:

a). In the light of current knowledge, and until other techniques can be shown to reduce consistently the likelihood of injurious pecking and its sequelae, then beak trimming should be an allowable mutilation.

b). On the basis of limited experience to date and subject to further scientific confirmation under practical conditions, infrared beak treatment appears to be the treatment of choice should beak trimming of laying hens be considered necessary.

c). Whilst consideration of the need for beak trimming in conventional cages will become redundant when the ban on such cages comes into force in 2012, should such a ban be deferred then this aspect would need to be revisited.

Recommendations

43. FAWC's recommendations to Government are:

a). As a consequence of the above advice and until alternative means of controlling injurious pecking in laying hens can be developed, then the proposed ban (SI 1646) on beak trimming of laying hens by 31 December 2010 should not be introduced in Great Britain.

b). Research should be undertaken on: the structure and functional use of the beak following beak trimming in all poultry species; the long term effects of infrared beak treatment on welfare; the need for beak trimming in hens kept in enriched cages; and the aetiology of injurious pecking including the potential for genetic selection and breed choice to reduce the problem.

c). A regular survey of the number of poultry that are beak trimmed should be undertaken to provide evidence of the number of birds undergoing this mutilation.

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Appendix. Acronyms used in this Opinion

BEIC – British Egg Industry Council

BFREPA – British Free Range Egg Producers Association

BPC – British Poultry Council

BVPA – British Veterinary Poultry Association

CIWF – Compassion in World Farming

FAWC – Farm Animal Welfare Council

RCVS – Royal College of Veterinary Surgeons

RSPCA – Royal Society for the Prevention of Cruelty to Animals

SSPCA – Scottish Society for the Prevention of Cruelty to Animals