

## Welfare issues associated with beak trimming in poultry

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### Introduction

Feather pecking is a major concern for the poultry industry on both economic and welfare grounds (Jones et al. 2004), as it can lead to severe injury and even cannibalism (Davis et al. 2004; Jones et al. 2004). The common solution to this problem is beak trimming, the partial amputation of the beak, which reduces the damage by pecking inflicted on other birds. However, the practice has come under attack for welfare reasons, not least because it may cause undue pain and stress (Davis et al. 2004; Jones et al. 2004).

### Discussion

Due to this concern, studies have been conducted to verify claims that beak trimming is indeed inhumane. Davis et al. (2004) performed a study comparing the effects of two common trimming techniques using 3,840 Single Comb White Leghorn chicks allocated to three groups. One group was a control and received no trimming. Another group was trimmed at six days of age with a 2.8mm gauge, while the final group was trimmed at 11 weeks of age with a block cut. Welfare was assessed by measuring plasma corticosterone concentration, observing performance criteria and testing for fearfulness. Both increased corticosterone concentration and decreased performance can signify bird stress and discomfort. Heterophil to lymphocyte ratios were also measured at the end of the study, as an increased ratio can indicate chronic stress. Honaker and Ruzler (2004) conducted a separate study to determine the effects of two trimming techniques on production criteria in two strains of Leghorn chicks (1,200 of each strain). In their study, one third of each strain had their beaks reduced at hatch using infrared energy, one third were precision trimmed (the favoured and most often used technique) at 7 days, and one third retained their beaks.

Both studies produced similar findings in that all treatments had a significant impact on bird health at a young age. Throughout the growing stage, both found that trimmed birds had lower body weight and Davis et al. (2004) reported higher corticosterone concentration, indicating stress, although the birds did not appear to be in any great pain.

However, is this just a case of a short-term discomfort that achieves better welfare at an older age? The results of both studies support such an argument. Although trimmed birds had lower body weight in the growth stage, there was compensatory growth as the birds matured. Once the hens reached the laying phase, the benefits of beak trimming became evident. Mortality was unchanged from normal in trimmed birds in both studies and heterophil to lymphocyte ratios in Davis et al. (2004) did not indicate chronic stress. Davis et al. (2004) observed that trimmed hens exhibited better production characteristics, less fearfulness and less feather pecking than non-trimmed birds. They concluded that if productivity is an indicator of welfare, then trimming enhanced bird welfare.

But can we consider the decreased welfare of the birds in the early stages of life acceptable? If not, it may be necessary to investigate alternative solutions to the problem. Jones et al. (2004) conducted a study exploring such solutions. Reduced occurrence of feather pecking has been established in laboratory selection programmes (Muir and Craig 1998; Kjaer et al. 2001), indicating a genetic component to the problem. Jones et al. (2004) found that strains known to have higher levels of feather pecking also possessed other behavioural and physiological characteristics that could be used as selection criteria in breeding programs. These characteristics include loud vocalisation, pronounced struggling and high plasma catecholamine concentrations when exposed to brief manual or mechanical restraint.

The study also examined the effect of social factors on the development of feather pecking. An experiment was performed to investigate the hypothesis that damaged plumage attracts pecking from other individuals. The feathers of selected hens were damaged before the birds were returned to the flock. It was found that damaged feathers elicited three times more pecking than non-damaged feathers, resulting in cannibalism in some cases. This implies that if individuals with damaged feathers could be removed from a flock, feather pecking might be avoided.

Finally, Jones et al. (2004) explored the possible benefits of environmental enrichment as a solution to feather pecking. Past attempts to reduce the behaviour by providing chickens with objects, such as flowers, toys, bells, stones, silver paper and specially designed devices have proved unsuccessful, with some actually stimulating social pecking while others were simply ignored (Jones et al. 2004). Jones et al. (2004) performed an experiment testing chickens' pecking preferences by providing groups of hens with different objects. It was found that white polypropylene twine elicited the strongest response as it was always pecked at sooner and more often than any other object, and there appeared to be no significant loss of interest in the string over a period of many weeks. However, the question remained: would the provision of string reduce the occurrence of harmful pecking? To test this, experiments were performed in which some groups of hens in both lab and farm environments received string and others did not. There was significantly decreased feather pecking in those birds provided with string. Therefore, it would appear that a device as simple as white twine could be used as a source of environmental enrichment that reduces pecking.

## Conclusion

In conclusion, in the interests of animal welfare, it is necessary to reduce feather pecking and cannibalism in poultry. However, the means by which this goal is achieved is open for discussion. The benefits of beak trimming are clear in mature birds, as reflected by reduced pecking damage and cannibalism and the increased production characteristics. However, recent studies have highlighted compromised bird welfare in the growth phase following treatment. Is this temporary discomfort acceptable? If not, then genetic selection and environmental enrichment may offer the best possible alternative solutions to the problem of feather pecking.

## References

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