

Executive Summary
Reducing the age at sexual maturity of broiler breeder pullets

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Broiler breeders are generally regarded as being poor egg producers and this is often attributed to the intense selection pressure for weight and food conversion, which has been carried out in these lines. However, it is possible that a significant amount of the failure to reach potential performance results from mismanagement of the breeders or misunderstanding of the needs of the broiler breeder.

The results of the trials reported here have shown that age at sexual maturity can be significantly reduced, but not to the extent that was anticipated. However, in spite of the feasible advance in the onset of lay in modern broiler breeder hens, this would only be profitable if the rearing cycle were changed to one rearing house – three laying houses. In the actual productive situation, a sensible change could be introduced to improve the production of settable eggs in broiler breeders reared in light-tight houses. The maximum daylength to which the birds are subjected from photostimulation could be significantly reduced, resulting not only in a significant reduction in the costs of providing the birds with hours of light that are unnecessary, but also in a significant improvement in the production of settable eggs. The results of these trials indicate that there is still room to manipulate AGE and performance, in order to find a different combination of age at photostimulation, body weight, length of photoperiod that will yield performance as good as that now yielded by the Control treatment. Relaxing the feed restriction of broiler breeder hens at very early ages, (i.e. achieving 2100 g at 9, 11 or 13 weeks of age) and applying earlier photostimulation will contribute to our understanding of the reproductive physiology of these birds, bearing in mind that such experiments have to be carried out at least to 60 weeks in order to evaluate the impact of the different treatments on total and settable egg production.

A follow-up trial to the above has been started, and a final trial will start in October 2003. Funding for the student for 2004 is requested in order to acquire sufficient evidence to either support or reject this proposed change to the management of broiler breeders.