

Title: Relation between fluoride intake and premature loss of hens teeth

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Project Category: Hypothesis Driven (Research project)
 Non-Hypothesis Driven (Case report, literature review, etc.)

Abstract:

Previous studies have shown a correlation between the susceptibility of hens teeth to deformation and their premature loss. To determine whether fluoride would ameliorate these conditions, we measured the effects of various dietary fluoride levels on deformation and loss of teeth. Fifty Rock Island Yellow chicks were divided into 5 groups, with one group randomly designated as control. All groups were fed a low-fluoride diet (3 ppm F), but NaF was added to the diets of the four experimental groups to give F concs. of 10, 40, 70 and 100 ppm. Incisor teeth, if still present, were extracted in the established pecking order under local anesthesia at 100 days. Deformation was measured in an Enns-Howse Deformator. The findings were exactly contrary to those of Beak et al. (*J Rare Tooth Res* 1:15-21, 1978) on young turkeys, in that a significant negative correlation was found between deformation and fluoride intake ($r = -0.96$, $p < 0.01$). Mean deformation (in μm /in the control group was 21.06 ± 82 (s.d.) and fell to 11.32 ± 61 at the highest fluoride intake. Whereas all control hens became edentulous, those receiving ≥ 70 ppm F retained their normal complement of teeth. This difference was significant ($p < 0.001$) as tested by ANOVA hence, we conclude that the addition of suitable amounts of fluoride to the diet of hens would do much to alleviate the chronic scarcity of their teeth.

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Was this study presented at another professional or scientific meeting? 2011 International Association for Hens Health Research annual meeting.