

EFFECT OF HIGH PEROXIDE VALUE FATS ON PERFORMANCE OF BROILERS
IN NORMAL AND IMMUNE CHALLENGED STATES

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ABSTRACT

A series of trials were conducted in order to determine the effects of high peroxide value fats on performance of broilers in normal and immune challenged states from 0-49 days of age.

In the first experiment, birds were fed one of six diets formulated to meet NRC requirements. Three levels of fat rancidity were utilized, each with and without the addition of an antioxidant. The results from this trial indicate that diets with a peroxide value of 75 or greater resulted in poorer feed conversion than treatments with low peroxide values. Furthermore, the addition of an antioxidant to the diets with a peroxide value of 75 or greater yielded improved feed conversion over diets with the same peroxide value but no antioxidant. The second trial was conducted in order to determine the effects of rancid fat on immune function in broilers. Birds received the same six dietary treatments. At 4 weeks of age, the birds underwent a coccidial challenge. No significant effects of the immune challenge in combination with peroxide levels on bird performance were observed.

Overall, the results from these trials indicate that the inclusion of high peroxide value fats can cause a depression in overall live performance parameters, especially feed conversion, but that the addition of an antioxidant can improve bird performance. In the second trial, birds seemed to overcome the administered immune challenge.