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## The effect of natural products in binding aflatoxins in chicken feed on growth of broilers

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### Abstract

This experiment evaluated the effects of a commercial binder (Novasil®) and two natural products with the potential to bind Aflatoxin B1 (AFB1) on the growth performance of broilers. There were eight dietary treatments; treatment 1 (control), treatment 2 (control + AFB1), treatment 3 (control + (Novasil®)), treatment 4 (control + (Novasil®) + AFB1), treatment 5 (control + RHA), treatment 6 (control + RHA + AFB1), treatment 7 (control + Banana peels) and treatment 8 (control + Banana peels + AFB1). The two natural binders were banana peels and rice husk ash (RHA). Four treatments (1, 3, 5 and 7) were formulated without aflatoxins while the other four (2, 4, 6 and 8) contained AFB1. All dietary treatments were formulated to meet the National Research Council (NRC, 1994) requirements for broiler grower and finisher feeds. The AFB1 concentration in the feeds was 100 ppb. One hundred and forty four unsexed day-old Arbo Acre day-old broiler chicks were randomly assigned to the eight treatments with three replicates each consisting of six chickens. The experimental period was forty two days. During the first 21 days, broilers were fed a grower feed and from 22-42 days, a finisher feed. The experimental design was a CRD with a 2 by 4 factorial arrangement. Feed intake, feed efficiency and chicks' weight were calculated on weekly basis for each bird. Data were analyzed using the general linear model (GLM) procedure of Statistical Analysis System software (SAS, 2009). The results showed that diets containing AFB1 did not significantly affect all the performance parameters. Feed efficiency of diet with rice husk ash was significantly ( $p < 0.05$ ) higher than the commercial binder ((Novasil®) ((Novasil®))) and banana peels during the finisher phase. The overall feed efficiency for the whole period (0-42 days) however, showed that RHA and banana peels had feed efficiency that was significantly higher ( $p < 0.05$ ) than the commercial binder. In conclusion, the natural binders had a significant improvement on feed efficiency compared to the commercial binder implying that they are superior in binding capacity to the commercial binder.

**Keywords:** Aflatoxin B1, broilers, commercial binder, natural products