

Public Abstract

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Title:EFFICACY OF ADSORBENTS AND ANTIOXIDANTS IN REDUCING THE EFFECTS OF MYCOTOXINS IN BROILERS AND PIGS

Mycotoxins are produced from fungi on grains used in feed, and can have negative effects on performance and health of chickens and pigs. The objective of this study was to evaluate the efficacy of adsorbents (RC, CC, and UP) against the toxic effects of aflatoxin B1 (AF) or the toxic effects of a combination of mycotoxins (MM).

In the first experiment, chicks were fed either AF alone or a combination of mycotoxins. Chicks fed toxins had a reduction in performance. When chicks were fed RC or CC with AF, birds performed similar to control. In chicks fed MM, the addition of UP improved some of the negative effects of MM. Therefore, the results of this study indicate that these products can be used successfully to prevent some of the negative effects of mycotoxins on the poultry industry, allowing for a safe production of poultry as a sustainable protein source for the public. In the second experiment, pigs were fed either AF alone or a combination of AF and fumonisin (FB). Antioxidants (TCM and CMN) were used against AF alone, and the adsorbent UP was used in pigs fed the combination of toxins. There were no negative effects in pigs when fed TCM, CMN, or UP alone. The addition of either AF or AF and FB reduced performance. There was minimal improvement in performance when pigs were fed the mycotoxin diet supplemented with TCM or CMN in the diet, indicating that they did not prevent the effects of the toxins. Pigs fed UP with MM had an improvement in growth, compared to MM alone. Therefore, results would indicate that UP has the potential to be an effective treatment against mixed mycotoxins, whereas antioxidants at these concentrations were not effective at reducing the effects of AF. The results of this study indicate that the adsorbent can be used successfully to reduce the effects of mycotoxins in pigs, thus improving performance and sustainability of the swine industry.