

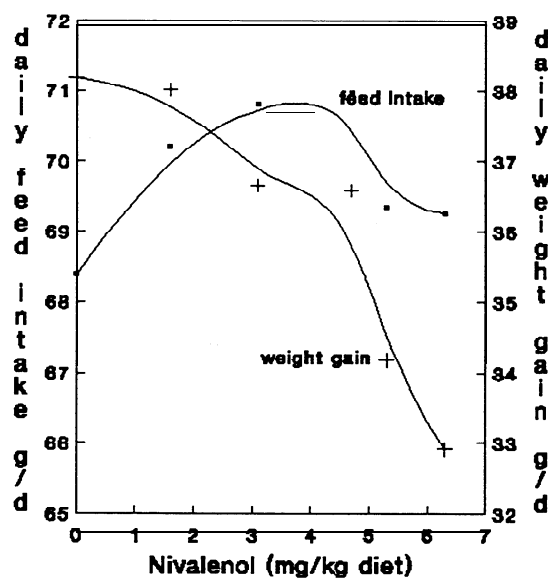
RESPONSES OF BROILERS OFFERED MAIZE DIETS CONTAINING THE MYCOTOXIN NIVALENOL

J.S. KOPINSKI , B.J. BLANEY , K.M. BARRAM , R. YOUNG

Fusarium graminearum infection of maize is common on the Atherton Tablelands of Northern Queensland. The primary mycotoxins produced in this maize are zearalenone and nivalenol (Blaney and Dodman, 1988). Studies have shown no effect of zearalenone on meat chicken performance (Chi *et al* 1980). Nivalenol a trichothecene, has been shown to be a feed-refusal agent in pigs (Blaney and Williams, 1991). Currently there is no published information on the influence of nivalenol on meat chickens.

The present experiment examined the effect of nivalenol-containing maize diets on meat chicken performance from 10d to 31d of age. 240 chickens housed in groups of ten in a broiler battery brooder were fed six graded levels of nivalenol, obtained by substitution of uncontaminated maize with various proportions of nivalenol-containing maize. Diets were formulated to maintain similar ME contents.

Figure 1 Broiler performance and nivalenol concentration



Preliminary results are shown for daily growth rate and feed intake in Figure 1. The depression in weight gain exhibited at lower nivalenol concentrations (0 to 4.7 mg) appeared to have been a result of toxicity of the diet as feed intakes were not reduced, but increased. This is not unusual as increased feed intakes were observed when meat chicken were fed mouldy diets in a previous study (Mannion *et al.* 1987). At the higher nivalenol levels (5.3 and 6.3 mg) the resultant growth rate depression was due to both toxicity and reduction in feed intake.

Although a few individual maize crops may contain up to 5 mg nivalenol/kg, most maize produced in the Atherton tablelands contains less than 2 mg nivalenol/kg. At this concentration

there should be negligible effect on meat chicken performance.

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