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Efficacy of turmeric (*Curcuma longa*) to ameliorate the adverse effects of T-2 toxin in broiler chicks

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A 3-wk feeding study was conducted to evaluate the efficacy of turmeric (*Curcuma longa*) powder (TMP), containing a known level of curcumin to ameliorate the adverse effects of T-2 toxin in broiler chicks. Five pen replicates of 5 chicks each were assigned to each of 6 dietary treatments. Dietary treatments evaluated include: 1) basal diet containing no T-2 toxin or TMP; 2) basal diet supplemented with 0.67% TMP containing 220 mg/kg total curcuminoids (TCMN); 3) basal diet supplemented with 1 mg/kg T-2; 4) basal diet supplemented with 1 mg/kg T-2 and 220 mg/kg TCMN; 5) basal diet supplemented with 2 mg/kg T-2; 6) and basal diet supplemented with 2 mg/kg T-2 and 220 mg/kg TCMN. The addition of T-2 toxin or TCMN to the diet had no effect ($P > 0.05$) on feed intake, body weight gain, or feed conversion which averaged 870g, 685g, and 1.29 g:g, respectively, across all treatments. Similarly, there was no effect ($P > 0.05$) of T-2 or TCMN on relative liver weight which averaged 3.07g across all treatments. Results indicate that 2 mg/kg T-2 was not toxic to broiler chicks fed dietary treatments for 3 weeks. Results also indicate that the addition of 220 mg/kg TCMN to the basal diet was not beneficial to chicks. It remains to be seen if T-2 toxin negatively affected the antioxidant status and hepatic gene expression of chicks, and if TCMN was beneficial in ameliorating any observed negative effects. Samples are currently being analyzed for antioxidant activity and changes in gene expression.