EFFECTS OF DIETARY MELAMINE AND CYANURIC ACID IN YOUNG BROILERS AND TURKEY POULTS

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ABSTRACT

Six studies were conducted to determine the individual and combined toxicity of melamine and cyanuric acid (up to 3.0%) in young broilers and turkey poults. Melamine alone caused reduced growth, increased kidney weights, and renal lesions in broilers and poults fed 1.0% or higher melamine. Renal histopathology revealed nonpolarizable melamine crystals in the collecting tubules and ducts, which contributed to renal failure. Residual melamine concentrations were highest in kidney, followed by liver, bile, and breast muscle. No toxicity was observed in broilers or turkeys fed up to 3.0% cyanuric acid alone. Growth was reduced in broilers fed combinations of melamine and cyanuric acid up to 3.0%, however no mortality was observed. In turkeys, the addition of cyanuric acid to diets containing melamine ameliorated the toxic effects observed when poults were fed melamine alone. Broilers and turkeys fed combinations of melamine and cyanuric acid had renal crystals viewable under normal and polarized light.