

ABSTRACT. Annual Meeting of the American Society of Animal Science
(July 31-August 3, 1990, Iowa State University, Ames, Iowa)

Growth rate and gain efficiency of chicks fed Group II grain sorghum varieties or corn based diets. C.R. Richardson, M.D. Miller, C.F. Sells* and R.W. Bullard. Texas Tech university, Lubbock and USDA-APHIS-ADC, Denver, Co.

A 30-d growth bioassay with 231 male Rhode Island Red chicks (initial wt = 34.3 g) was conducted to determine the effects of feeding diets based on grain sorghum (sorghum) varieties with different levels of tannic acid on growth rate and gain efficiency. Group II sorghums have been classified as varieties that have high tannin activity in the milk and dough stages but diminishes to negligible levels during ripening. A completely randomized design was used with three replications of 7 chicks per replication. Chicks arrived day - one post hatching and were randomly assigned by weight group to the 11 treatments (T) and fed for 30-d with weights taken initially and at days 15 and 30. Feed was offered free choice throughout the study and clean, fresh water was always available. Chicks were kept in batteries and housed in facilities that meet or exceed federal requirements for ventilation, heating, cooling, etc. as specified for laboratory animal quarters. Diets contained 23% crude protein and were similar in calcium, phosphorous, minerals and vitamins. All grains and soybean meal were ground to pass through a 1 mm screen to insure uniform mixing, before preparing the completely mixed diets. Data were analyzed by analysis of variance and means were separated by Duncans test (SAS GLM procedure). Gain per chick per day (g) and gain efficiency (g gain per g of feed consumed) for the sorghum treatment with no tannins (T1), the 9 Group II sorghums (T2-T10), and the corn treatment (T11) were: 8.6, .60; 8.8, .60; 9.0, .61; 9.2, .61; 8.8, .59; 8.4, .58; 8.9, .58; 8.6, .57; 9.3, .59; 8.8, .56; 8.6, .51, respectively for 15 d. Chicks receiving T9 (ARK 2041) consumed more feed ($P < .05$) than those fed the corn T. Gain efficiency for chicks fed T4 (TAM 2566 DW₃) was better ($P < .05$) than for T10 (TX 2790 x AR 3009) but similar ($P > .05$) to all other T. Performance variables (gain, feed consumed and gain efficiency) were similar ($P > .05$) across all T for the 16-30 d and for the overall 0-30 d. These data indicate that corn can be substituted for specific sorghum varieties without adversely affecting performance or feed intake of young chicks.

KEY WORDS: Group II sorghums, Tannins, Chicks