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## Comparison of Different Ideal Amino Acid Ratios in Male and Female Broiler Chickens of 21 to 42 Days of Age

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An amino acid bioassay was carried out to compare responses of male and female broiler chicks to different ideal amino acid (AA) ratios from 21 to 42d of age. The ideal ratios were used to calculate AA requirements were IICP (Illinois Ideal Chick Protein), NRC (1994), RPAN (Rhone Poulenc Animal Nutrition) and feedstuff AA ratios which were compared with each other and with a positive control diet. Indispensable AAS were rationed to lysine according to requirement ratios in tested profiles, with digestible lysine set at 0.85 and 0.78 for male and female, respectively. Experimental period began at day 21 and lasted in 42d of age. Diets for all profiles contained 3200kcal AME<sub>n</sub>/kg, and L-glutamic acid was used to make all diets equal in crude protein at 14.25% of the diet. Chicks fed diets formulated with RPAN had significantly lower weight gain and feed efficiency than IICP, NRC and feedstuff which is probably consequence of high Lys: Leu ratio in this profile. There were no significant differences in feed intake, weight gain and feed: gain among chicks fed IICP, NRC (1994) and feedstuff. Since IICP ratios in the case of all AAS (except Met+Cys in NRC) are lower than or close to the ratios in NRC (1994) and feedstuff, it can be concluded that IICP ideal ratios is sufficient for supporting maximal weight gain and feed efficiency. Chicks fed diets which their AA requirements calculated by feedstuff ratios had higher breast meat yield than IICP and NRC (1994) which may be due to higher Lys: Met+Cys ratio in this profile. Results of this experiment suggest that although male and

female broiler chicks have different body composition and consequently different AA requirements, but they respond similarly to different ideal AA ratios.

**Keywords:** [amino acid profile](#), [broiler](#), [ideal protein](#)

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