

## Performance of alternative meat chickens for organic markets: impact of genotype, methionine level, and methionine source

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Synthetic forms of the amino acid methionine (MET) will be banned from organic poultry diets in the future under the USDA National Organic Program. For organic producers possible alternatives include the use of slow-growing genotypes, which may have lower MET requirements, and feed formulations utilizing only intact protein sources of MET (no synthetic MET). Three genotypes with different growth rates (Slow, Medium, and Fast) were given a low-MET basal diet or diets containing intermediate or high MET levels that were formulated with or without synthetic DL-MET; thus 5 experimental diets were fed to each genotype. Digestible MET levels (for the low, intermediate, and high MET diets) were 0.30%, 0.36%, and 0.42% in the starter phase, 0.26%, 0.30%, and 0.34% in the grower phase, and 0.22%, 0.26%, and 0.30% in the finisher phase. Twenty male birds were randomly assigned to pens with 5 replicate pens per treatment. Slow, Medium, and Fast birds were raised to 77, 63, and 49 d of age, respectively, and placement of the different genotypes was staggered in order to process all birds on the same day. Carcass and parts yield were calculated from 5 birds from each replicate. Genotype had a significant impact on weight gain, feed intake, feed efficiency, and yield ( $P < 0.05$ ). The Fast birds had higher weight gain, feed efficiency, carcass and parts yield than slower-growing birds. Level of MET had a numerical but not significant impact on weight gain and feed efficiency. However, breast yield of all genotypes was affected by MET level, with higher breast yields from treatments with higher levels of MET ( $P < 0.05$ ). The Slow genotype had lower breast yield than Fast but higher wing and leg yield ( $P < 0.05$ ). Diet formulation without DL-MET (using intact-protein diets with higher crude protein levels) did not compromise growth or yield. These data exhibit the impact of genotype and MET level on performance of birds for organic markets, and demonstrate the use of intact-protein sources as an alternative to synthetic DL-MET.

Key words: organic, amino acid, methionine, slow-growing poultry, performance