Wooden Breast: Affected by Broiler Strain?

Wooden breast is a myopathy of the broiler chicken superficial pectoral muscle (breast fillet) that has been previously described in past issues of WOGS (April ’13 – Wooden Breast). This quality defect not only affects the visual perception of breast meat by consumers in a raw product retail setting, but also alters the functional characteristics of affected fillets incorporated into further processed products. Reports from the field suggest that wooden breast occurs worldwide, yet under vastly different growing conditions. Although the specific mechanism by which wooden breast develops is currently unknown, preliminary research has indicated that nutrition, management, and genetic factors may affect both incidence and severity.

Recently, a study was conducted to investigate the incidence of wooden breast in four commonly reared, commercially-available broiler strains. Wooden breast was observed to some extent in all four strains at both ages evaluated. The average severity scores (normal = 0; mild = 1; severe = 2) varied (see figure). Male broilers had higher average scores for wooden breast than female broilers across all strains. These results indicate that wooden breast does occur across multiple commercially available genetic strains, although the incidence and severity may vary. This is likely due to inherent differences in growth trajectory and carcass component yields between strains, as well as between male and female broilers within a strain.

It should be noted that nutrition and management factors have also been shown to contribute to the incidence and severity of wooden breast. Broilers reared to heavy weights and correspondingly remain in the field for a longer periods of time, may be more susceptible to environmental or nutritional stressors associated with the development of breast myopathies.

Since wooden breast can occur in all commercially-available broiler genotypes, nutrition or management interventions may be the most appropriate approaches to minimize the impact of these stressors on flocks.

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