Worthwhile Operational Guidelines & Suggestions

BROILER CHICKEN MYOPATHIES IV. STRINGY/MUSHY BREAST

Stringy/mushy (or sometimes referred to as spaghetti) breast muscle in broiler chickens may be observed, albeit in very low incidence, marketed at heavy weights. Affected birds (typically females) do not exhibit other gross lesions or growth/health related problems. Macroscopically, this myopathy is characterized by extremely soft and friable Pectoralis major when palpated after chilling with muscle fibers extreme friability. Histologically, this myopathy shows cellular changes similar to those reported for other myopathies (white striping, woody breast etc.): extensive fiber degeneration and regeneration, hyalinization, poor fiber uniformity, increased fat and connective tissue deposition. This condition may be first noticed after scalding and defeathering, where breast tissue appear torn and damaged in affected birds. During deboning, the breast muscles are easily split and torn, stick to the bone and mushy when touched. Meat yields are often reduced due “meat loss to the bone” and excessive purge (poor water holding capacity).

It is likely that muscle structural integrity is affected by the immaturity of the newly deposited collagen. Collagen, in addition to proteoglycans and glycoproteins, is the major component of the connective tissue that acts as “scaffolding” in the muscle. In young (i.e., broiler chickens) collagen represent only a small portion (0.2-0.4%) of breast muscle, with low physical strength (cross-linking) and heat stability. More research is warranted to determine if this is an inflammatory change in the muscle or merely a physiological consequence of biological immaturity...