



# Worthwhile Operational Guidelines & Suggestions

BROILER PROCESSING TIMELY INFORMATION – MAY 2007

## MELANIN PIGMENTATION

Poultry processors and consumers sporadically inquire about cause (s) of gray-black discoloration or pigmentation on the abdominal fat and connective tissue, as well as on the feet/shanks of chickens (See Figure). This pigmentation is due to the accumulation of a pigment called eumelanin synthesized by a skin cell called melanocyte. To satisfy consumer preference for white or yellow skin chickens, eumelanin is bred out, through genetic selection, from the skin of commercial chickens. However, complete elimination of eumelanin may not be easy, as skin pigmentation is controlled by multiple interacting genes. Furthermore, sex-linked barring may also be involved. This is the reason for observing a higher incidence in females than males. Fortunately, in most instances, the incidence of this type of dermal or fascial melanization in commercial broiler chicken lines is usually very low (<1%).



The presence of melanin on edible tissues (i.e., skin, fascia, abdominal fat, and paws), although visually unattractive, does not pose any health risks to the consumer. Microscopical analysis of the lesions can verify the presence of eumelanin pigments in skin cells and differentiate the problem from microbial spoilage or any other foodborne hazard. However, when excessive, the removal of the affected tissues can have an economic impact in the plant (slower line speeds, additional labor, and yield losses through product trim).



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