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**21. FEATURES OF THE COLOR OF SLAUGHTER POULTRY CARCASSES  
AS A DEFINING CHARACTERISTIC OF APPEARANCE**

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The poultry meat industry has gone through many changes. It moved from growing dual-purpose birds (meat and egg production) taking ~110 days to reach 1.2 kg 100 years ago, to developing specialized meat breeds that grow to 2.5 kg within ~40 days. It also moved from selling ~80% whole birds to mostly selling cut up and further processed products in the Western world.

This is one of the key parameters in attracting/distracting consumers buying food in general and poultry is no exception. Some markets prefer yellow skin

chickens while others prefer white color or some shades in between. This can be manipulated by the diet where feeding birds with feedstuffs containing carotenoids (e.g., corn base diet, spirulina) will result in pigment accumulation in the skin. However, to maintain this color, the birds must be processed under mild scalding conditions so the pigment will not be rubbed off the product during the defeathering step. An aggressive feather picking on one area of the carcass can also cause a patch of light color which results in downgrading. Additional factors influencing poultry meat color have been reviewed elsewhere [1]. In brief, there are numerous factors which can play a role in poultry meat color including age (increasing haem pigment in the muscle), genotype (capacity for pigment fixation, fatness), muscle glycogen storage (glycolytic potential), and stress (exertion before slaughter).

Overall, since most poultry sold in developed countries is already packed in some sort of plastic film (i.e., not allowing touching/smelling the meat), visual impression of color is extremely important.

Discoloration due to bruises is also a negative factor and birds with a certain size bruise are downgraded (see additional info below). Bruises can typically occur prior to removing the birds from the farm or during transportation and tend to be found on the breast, thighs, and drums. In some studies, it was reported, that the frequency of downgrades, in Canada, due to bruising on the drums alone was approximately 10% in turkeys and approximately 5% in broilers. In Portugal, the incidence of bruises in broilers was reported to be 3.7%. In Brazil, the prevalence of condemnations due to contusions, fractures, and bruising has been reported to range from 6–29% in a survey of two slaughterhouses. The incidence of bruises at processing can be influenced by many factors. In particular, catching, transport, and slaughter conditions [2]. In general, longer distances, higher densities, and inappropriate electrical stunning tend to result in more bruises, as well as longer durations between shackling and slaughter. It is interesting to mention that some studies today are looking at on-farm slaughtering to reduce/prevent some of these problems, including welfare issues [3].

The way poultry is presented as parts or a whole bird has a significant effect on

the purchasing decision of the consumer. Poultry that shows defects such as bruises, broken bones and/or discoloration are not going to sell, or they will sell at a substantial discount, since consumers associate physical defects with poor product quality.

### **Literature**

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