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### **Managing poultry meat quality by nutrition**

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Poultry products are mainly consumed as cut and processed products. Therefore, it is no longer enough for broilers to have high slaughter yields and desirable carcass conformation. Good esthetic and functional characteristics must be taken into consideration to satisfy the demands of both processor and consumer. Meat quality is under a complex control including genetics, rearing and slaughter factors. These factors influence the chemical composition of the meat but also the post-mortem muscle metabolism which determine a large number of technological and sensory qualities. This review focuses on the recent advances showing that nutrition can be an effective tool to control muscle development and meat quality in poultry. In particular, the intake of protein, which largely determines muscle growth and yield, may also affect several molecular pathways with significant consequences on muscle post mortem metabolism and meat quality. Indeed, the amino acid supply during the finishing period or just before slaughter can shape the energy reserves of the muscle with a significant impact on meat quality, including color, processing yield and susceptibility to oxidation. Beyond the control of muscle metabolism, protein intake will also be crucial in controlling the molecular pathways that influence muscle fiber growth and integrity. Thus, recent studies show that in modern heavy strains, improving meat yields by nutrition can also lead to poor meat quality, which results in a lower protein/fat ratio and in the most severe cases in the onset of degenerative defects. Therefore, it is essential to rethink poultry nutrition by taking into account new standards, such as functional, nutritional and storage ability of the meat, but also by developing studies to better understand which molecular pathways can be efficiently modulated by nutrition during animal growth to improve final meat quality.

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