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Muscle energy metabolism, growth and meat quality (#35)

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Short Abstract

World meat production must increase substantially to support current projections in population growth over next thirty years. At the same time, however, maximizing product quality remains a focus for many in the meat industry, as incremental increases in product quality often signal potential increases in segment profitability. Moreover, increases in meat quality also address concerns raised by an ever-growing affluent society demanding greater eating satisfactions at every meal. Production strategies and valued endpoints differ worldwide, however, making global marketing of meat challenging. Moreover, this variation in production schemes make it difficult for the scientific community to understand precisely those mechanisms controlling beef quality. For example, some cattle are produced in low input, extensive, forage-based systems. In contrast, some producers raise cattle in more intensive operations where feeding programs are strategically designed to maximal growth rates and achieve significant fat deposition. Yet others produce cattle that perform between these two extremes. Fresh meat quality, somewhat like the variation observed in production strategies is perceived differently across globe. Even so, meat quality is largely predicated on those characteristics visible at the retail counter, namely color and perceived texture and firmness. Once purchased, however, the eating experience is a function of flavor and tenderness. In this review, we will attempt to identify a few areas where animal growth may impact postmortem energy metabolism and thereby alter meat quality. Understanding how animals grow and how this affects meat quality develop is incumbent to all vested in the meat industry.

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