

The Eating Quality of Beef as Influenced by Age and Muscle Difference

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The beef carcass is composed of over 200 individual muscles. Some muscles are tender and are used for steak. However, numerous other muscles particularly in the frontquarter, may have utility as steak. A more efficient utilization of the beef carcass would be wise particularly now as beef must meet competition from other protein sources.

Restricted funds has limited progress to the evaluation of techniques for quality measurement. Methods have been employed for the excision of individual muscles. Fiber size and variation in the degree of rigor have been investigated. Other factors evaluated were myofibril size, sarcomere length, collagen, elastin, and mucoproteins. These investigations provided the following:

1. Muscles and/or muscle systems can be more easily extracted from the warm carcass than from one chilled.
2. Muscles within a carcass are under varied levels of tension depending upon its location within the carcass and the chilling position.
3. Fiber diameter of muscles under 1000 gram tension were smaller than those with no tension.
4. No significant change was noted in muscles with additional levels of tension.
5. Both muscles studied exhibited less rigor fibers when the muscle was under 1000 gram tension than with no tension.
6. Muscles and muscle fibers varied in the response to rigor mortis.

Factors Affecting the Energy Value of Feeds and Energetic Efficiency of Ruminants

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Two open-circuit respiration chambers for cattle have been installed and will be used in the determination of energy values of various feeds and rations and the influence of certain feed additives upon energy utilization by cattle of different ages.