

The Quality of Beef

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When consumers eat a steak or slice of roast, they expect the meat to be tender, juicy and have a good beefy flavor. But, how do you determine if the beef displayed in a retail case at the supermarket will have the eating characteristics that you desire? It is important to recognize that there are many factors influencing the acceptability of the meat you eat.

Animal breeding and genetic selection play an important role in influencing meat palatability. About 70 breeds of cattle are used by beef producers, which contributes to some of the variability and quality of meat. For example, retail meat cuts from breeds such as Limousin, Charolais, Gelbvieh and Simmental are generally lean and have acceptable tenderness, flavor and juiciness qualities. Beef from Angus, Hereford and crosses with them generally have very desirable eating characteristics. Cattle that have Zebu or Brahman breeding, however, frequently produce meat that is marginally tender or unacceptable in tenderness.

The amount and distribution of visible fat within the lean portion of meat, known as marbling, also affects the eating quality of meat. Beef containing a high level of evenly distributed marbling is generally more tender, juicy and flavorful than meat having little marbling. Both genetics and how cattle are fed influence the degree of marbling in meat. The highest marbling breeds are Shorthorn, Jersey and Angus. Charolais and Holsteins have slightly less marbling, while marbling in Hereford, the Continental breeds and Brahman is even lower. By feeding young cattle a high grain diet for several months prior to slaughter, the amount of marbling in meat is enhanced compared to grass fed cattle.

To provide consumers with a set of standards that can be used to predict meat palatability, beef is assigned quality grades. Beef from cattle less than 28 to 30 months of age have four quality grades, which are determined by evaluating the degree of marbling and the age of the animal. The younger the animal, the more likely that the meat will be tender. Beef graded Prime is produced from well-fed steers and heifers. Consumers expect Prime beef to be very tender, juicy and have exceptional flavor. However, less than three percent of all cattle grade Prime. Choice beef contains less fat than Prime beef and is the most popular retail grade. Beef graded Select may lack the juiciness and flavor associated with a higher degree of marbling, but it appeals to many consumers because it is leaner and more economical than Choice beef. Research shows that Select grade steaks cooked to 145-150F, or medium rare, are comparable to Choice grade steaks, but when cooked to higher degrees of doneness are less tender, flavorful and juicy. Very few beef carcasses are graded Standard, which is mild in flavor, but lacks the juiciness and tenderness associated with beef containing more marbling.

Research shows that, in general, optimum tenderness, juiciness and flavor are reached when meat is cooked to 160F, a medium degree of doneness. If you like beef cooked medium-well or well-done, you should purchase cuts with high marbling.