

Beef tenderness in relation to connective tissue content

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The aim of the study was to find the influence of connective tissue content on tenderness of beef.

Investigations were carried out on 57 cattle carcasses. The material for investigations were the following muscles:

1. m.psoas maior (Fillet)
2. m.biceps femoris (Silverside)
3. m.quadriceps femoris (Thick Flank)
4. m.semitendinosus — —
5. m.supraspinatus Meat of Bladebone
6. m.triceps brachii
7. mm. erectores spinae — cervical part (Sticking).

The content of connective tissue was determined with the histometric method using contrast staining of preparations after Calleja (3) and quantitative estimation with Point-counter method after Glagoleff with the use of Eltinor integration device (4).

Tenderness determination was carried out on a aged muscle (veal — 3 days, beef — 6 days at 2–5° C) which was roasted in an electric oven without any addition of fat at 160° C (internal temp. 80° C) (1). The estimation of meat tenderness was carried out with:

- a) instrumental method with the use of Höppler's consistometer,
- b) organoleptic method using 5-point subjective scale for sensory evaluation (2).

The results obtained were analysed statistically and correlation coefficients were calculated for the particular muscles.

It was found from the results shown in the table that there is no correlation between the content of connective tissue and meat tenderness. Nearly all correlation coefficients (r) for the particular muscles showed lack of significant relationship between the content of connective tissue and meat tenderness ($r_0,05$). Only in one case (sensory evaluation of m.biceps femoris) a low positive correlation coefficient was obtained.

It appears from the investigation results that quantitative content of connective tissue is not a conclusive factor in meat tenderness.

muscles	Correlation coefficients (r) of connective tissue with evaluations:	
	instrumental	sensory
m.psoas maior	0,0452	0,0170
m.biceps femoris	0,2217	0,4178**
m.quadriceps femoris	0,2662	0,2399
m.semitendinosus	0,2467	0,1077
m.supraspinatus	0,0701	0,0919
m.triceps brachii	0,2391	0,0398
mm.erectores spinae	-0,2279	0,1589

n = 57

r_{0,05} = 0,2732

** — significant at 0,05 level of probability

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