牛枝肉の規格格付に関する研究

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	作成者: 並河, 澄
	メールアドレス:
	所属:
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Studies on the Beef Carcass Grading System

並河　澄　・　*福原　利一　・　*原田　宏　・　**三谷　克之輔
***岡山　高秀　・　***向井　文雄

（京都大学農学部，　*宮崎大学農学部，　**広島大学生物生産学部，　***神戸大学農学部）

Kiyoshi Namikawa, *Riichi Fukuhara, *Hiroshi Harada, **Katsunosuke Mitani,
***Takahide Okayama and ***Fumio Mukai
(Faculty of Agriculture, Kyoto University, *Faculty of Agriculture, Miyazaki University,
**Faculty of Applied Biological Science, Hiroshima University and
***Faculty of Agriculture, Kobe University)

It must be necessary to confirm the appropriateness to regard half carcass data as a substitute of whole carcass characteristics in research works on carcass evaluation and in carcass grading practices. In the first part of this report, side weight, main tissue weight, such as muscle, fat and bone, weight of 9 standard muscle groups, and weight of 28 major muscles were compared between left and right sides on carcasses of 4 Holstein bull calves, which were slaughtered at about 90 kg live weight. Any significant difference on these weights was not detected between both sides.

In the second part, whole-part relationships on carcass composition were examined by the comparison with muscle, fat and bone proportions in the whole carcass and the rid cut, using 65 carcass data on steers, which were originated from Japanese Black, Holstein and F_1.

The proportion of muscle, fat and bone tissues in the rib cut was a fairly good approximation of that in the whole carcass, showing considerabley high correlation. The estimation of muscle percentage in the whole side by a multiple regression equation, which included muscle percentage in the rib cut, was highly accurate.

Thirdly, images obtained at each rib section of rib cuts of 4 steer's carcasses, were inputed directly to an image-analysis system in order to estimate the area-ratio of main tissues, exposed on the cut surfaces of 8th -10 th rib sections. The mode method was used as the technique for extracting the lean-area of cut-surfaces. In this method, threshold values at the valley of each histogram in R, G and B images were choosed to identify the lean-area, and all grey levels smaller then each threshold valre were mapped as the lean-area.

Close agreement between the estimated lean-area values and measured values by the tracing method was resulted. The lean area-ratio estimater on the 7 th-8 th rib section was the most reliable for the estimation of the muscle weight percentage in the whole side, although lean area-ratios were variable among rib sections.