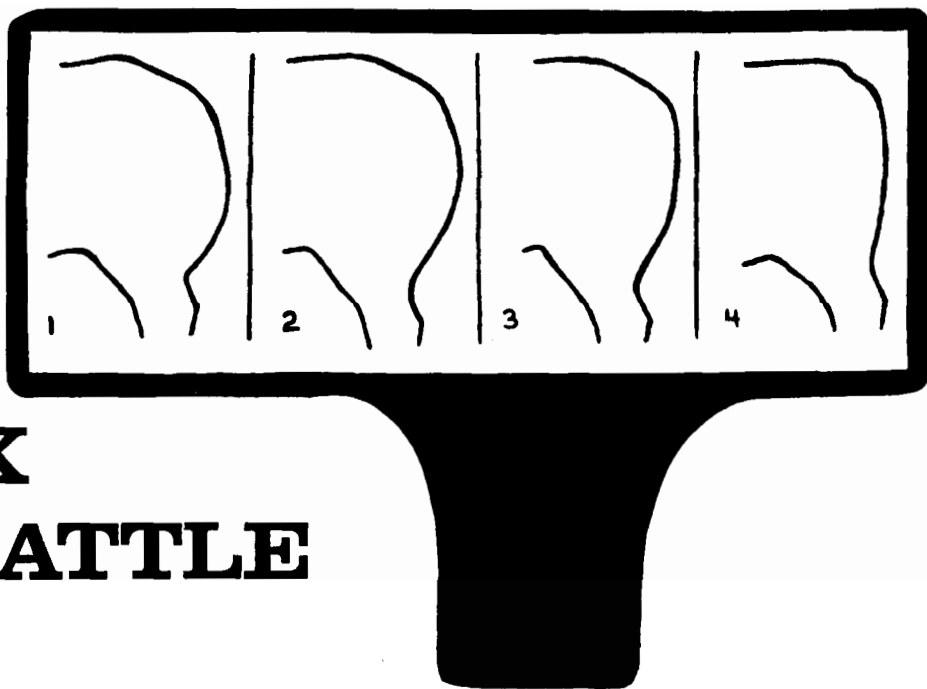


Developing a MEAT INDEX FOR BEEF CATTLE



A MEAT INDEX being developed at Davis is designed to rate beef calves at weaning for the meatiness of the carcasses they will produce later, after being fed out. The meat index is based on rump shape and the degree of visibility of a crease in the rump (see sketch) formed by the juncture of the semimembranosus and semitendinosus muscles. The visibility of the crease is scored (see table) from 1 to 4 while the animal is standing and again when it is moving. The shape of the rump is scored from 1 to 4 with a "rump gage" as shown in the photo. By moving the rump gage from close to the viewer's eye to full arm's length, some position can be found at which one of the outlines will best fit the animal's rump shape.

The idea for the meat index had its genesis in research with double-muscled animals. A marked association of rump shape and intermuscular creases with leanness and heavy musculature of the carcass was found. Double-muscled animals typically score "1" on the rump gage, whereas normal animals tend to fall in the range from 3 to 4.

Through the use of statistical techniques, the crease scores and the rump gage score can be linearly combined to allow maximum correlation of the meat index (MI) with the amount of nonfat in the carcass, expressed as a percentage of live slaughter weight.

Formulas

Based on the beef animals tested to date, the formulas developed are: $MI = CS - .66 CM + 2.06 RS$ (for bulls); and $MI = CS - .76 CM + 1.76 RS$ (for steers)—where CS = visibility score of the crease in the standing animal, CM = visibility score of the crease in the mov-

RUMP GAGE dimensions, exclusive of handle, are $8\frac{1}{4} \times 3\frac{3}{4}$ inches. Material is clear plexiglass.

VISIBILITY SCORING OF THE CREASE BETWEEN THE SEMIMEMBRANOSUS AND THE SEMITENDINOSUS MUSCLES IN BEEF ANIMALS

Visibility	Animal standing	Animal moving
	CS	CM
Marked: crease is markedly noticeable even to one unfamiliar with cattle.	1	1
Definite: crease can be seen easily by one familiar with the study, but is not marked.	2	2
Slight: crease can be seen only by the careful observance of one familiar with the study.	3	3
None: no crease is visible.	4	4



The crease (C) is between the semitendinosus (1) and the semimembranosus (2) rump muscles.

Sighting through rump gage to match one of four outlines to the animal's rump shape.



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ing animal, and RS = rump gage score. For example, if a steer had a CS score of 4, a CM score of 3, and an RS score of 3, its meat index would be $1 \times 4 - (.76 \times 3) + (1.76 \times 3) = 7.00$. The lower the MI score, the meatier is the expected carcass.

In two tests to date—one involving 13 bulls, the other 12 steers, fed out to low choice grade—the meat index was found to be highly correlated at .8 and .7 respectively (considering 1.0 as perfect prediction and 0 as no predictability), with the amount of nonfat in the carcass, expressed as a percentage of live slaughter weight. The corresponding correlations using the U.C. conformation grade were .3 and .2.

The animals used in constructing the meat indexes given here were considered normal on the basis of their individual appearance and pedigree. They were of Angus, Hereford, and Shorthorn breeding.

Development of the meat index is continuing. Additional tests are to be made this year. Other intermuscular creases may also be of use to increase the accuracy of the meat index.

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tion, University of California, Davis. Collaborators in the double-muscle experiment included F. D. Carroll, Department of Animal Husbandry, and L. M. Julian, Department of Anatomy. Mrs. Moira Tanaka, Laboratory Technician, assisted with the development of the meat index.

DONATIONS FOR AGRICULTURAL RESEARCH

Contributions to the University of California, Division of Agricultural Sciences

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California Fertilizer Association	2,000.00
To aid in research on soil fertility problems—Horticultural Science	
Chemagro Corporation	75 lbs 35% Wettable Dexon
For research on control of <i>Phytophthora</i> root rot of avocado	
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For Plant Pathology Department work on vegetables and small fruit disease control	
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For Entomology Department determinations on interactions of soils and pesticides and their implications..	
Coachella Valley Mosquito Abatement District	12,500.00
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DAVIS

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