



## ADDENDUM A

### Procedures for Use of Approved Vision Based Beef Carcass Yield Grade Instrument Systems for Fat Thickness Measurements Livestock and Seed Program, Agricultural Marketing Service March 2005

#### BACKGROUND:

The Department of Agriculture (USDA), Agricultural Marketing Service (AMS), Livestock and Seed (LS) Program will accept beef carcass fat thickness (FatT) measurements made by approved instruments. To be approved by the LS Program for such a purpose, the instrument must meet certain performance requirements for accuracy and precision in the prediction of the carcass fat thickness at the 12th-13th rib interface. The fat thickness is a single measurement of fat over the ribeye three-fourths of the length of the ribeye from its chine bone end. Each 0.1 of a PYG equals 0.04 inch as the following schedule illustrates:

Fat Thickness	Preliminary Yield Grade
0.0 inch	2.0
0.2	2.5
0.4	3.0
0.6	3.5
0.8	4.0
1.0	4.5
1.2	5.0
1.4	5.5

The performance requirements outlined for fat thickness in this Addendum were based on the mathematical relationship of FatT to PYG, the unit equivalence between PYG and YG, and the high correlation between PYG and YG. This defined relationship provided equivalence to the Phase II requirements of the approved document "Procedures for Approval and Use of Vision Based Instrument Systems for Beef Carcass Yield Grade Measurement." Since the PYG may be subjectively adjusted, either upward or downward, as necessary, to reflect unusual amounts of fat on other parts of the carcass, additional requirements were added for FatT to take into account the objective nature of this assessment.



**Phase II: Operational measurements**

The accuracy and precision will be evaluated by comparing (correlation and regression) the PYG and FatT observation to the actual expert measured PYG and FatT.

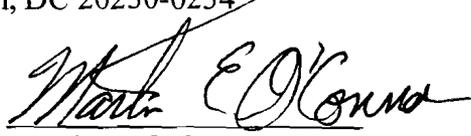
Preliminary Yield Grade and Fat Thickness Performance requirements for Phase II:

PYG Operational	R2 = 0.90 or greater; 95% of predicted PYG observations within 0.5 yield grade units of the actual expert PYG, and the residual standard deviation (RSD) shall not exceed 0.25 yield grade units.
FatT Operational	90% of predicted FatT observations within 0.1 inches of the actual expert FatT; the average residual between the predicted FatT observations and the actual expert FatT shall equal $0 \pm 0.05$ inches.

LS may change the performance approval criteria when technology improves.

Chief, Standards, Analysis and Technology Branch  
USDA, AMS, LS Phone: (202)-720-4486  
Room 2607 South Building, Stop 0254 FAX: (202)-720-1112  
1400 Independence Avenue, S.W.  
Washington, DC 20250-0254

Approved:



Martin E. O'Connor, Chief  
Standardization Branch

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.