II. — CARCASSES AND MEAT QUALITY

Pig carcass grading according to muscling type and minimum backfat thickness on the loin split

P. POMMERET *, P. ZERT *, J. NAVEAU **, C. MELANI ***

* *I.T.P., 149, rue de Bercy, 75595 Paris Cedex 12*

** *S.C.A. Pen Ar Lan, Maxent, 35650 Plelan-le-Grand*

*** *O.F.I.V.A.L., 33, avenue du Maine, 75595 Paris Cedex 12*

France

A total of 516 carcasses exhibiting a wide variability in muscling, weight and backfat thickness, were cut according to a simplified dissection method.

The equation of multilinear regression for the estimation of the lean percentage was calculated according to weight, minimum backfat thickness at the loin level (R) and estimation of muscling (DM).

The equation for prediction of lean percentage, without taking into account the muscle weight was :

$Y = 68.3290 - 0.4621\ R - 2.7647\ DM$ with : $R^2 = 81.7$, $RSD = 2.56$, as compared to total dissection.

A carcass grading scale was suggested on these bases and officialized by a governmental order.

It will be used until all French slaughter houses have been fitted with devices for pig carcass grading according to strictly objective methods.

This method called « a renewed traditional » method is transitory.

Supplementary studies are required for obtaining the most objective carcass grading.

Pig carcass grading according to lean content : possibilities and limits of the " Fat-O-Meater "

B. DESMOULIN *, P. ECOLAN *, P. PEINIAU *, C. MELANI **

* *I.N.R.A., Station de Recherches sur l'Elevage des Porcs, Saint-Gilles, 35590 L'Hermitage*

** *O.F.I.V.A.L., 33, avenue du Maine, 75755 Paris Cedex 15*

France

Linear measurements of fat and muscle thickness on 537 pig carcasses using the Danish Fat-O-Meater (FOM) system were completed by the dissection of 200 carcasses representative in France of the weight class : 70-95 kg.

— The average lean content was 49 p. 100 according to the EEC standard with a residual error RSD = 0.73 p. 100 of lean meat.

— The FOM estimation obtained with the Danish equation, little fitted for heavy carcasses, was 2.9 p. 100 too high for the French carcasses. The estimation made with the German equation, more adapted to French carcasses, resulted in a grading corresponding to the EEC standard in 72.5 p. 100 of the carcasses.

— *Full programmings* on dissection data were established for 3 sites of measurement in connection with carcass weight. They were different according as the tests were made on warm or cold carcasses. The muscle content was estimated ($R^2 = 0.66$) with a residual error RSD = 1.76 p. 100 lean meat.

Reduced programmings on only 2 very representative sites, involving a loss of information, but a saving of time on the slaughterline, were suggested. Side fat thickness X_2, 8 cm from the midline, between the 3rd and the 4th vertebra was associated with the combined measurement (X_1-X'_5) of side fat and lean meat thickness, 6 cm from the midline, between the 3rd and the 4th last rib. The muscle content was estimated with a residual error RSD = 1.89 p. 100 of lean meat, as follows :

$$Y \text{ EEC} = 35.47 - 0.30\ X_2 + 29.82\ \frac{X'_5}{X'_5 + X_1};\ (R^2 = 0.61)$$

• Within the weight class considered (70-95 kg), the Danish system was used to estimate the weight or the fat content as well a fleshiness combined with a subjective judgment of « types » : because of the variable distribution of lean weights, carcass net weight and length had to be taken into account. The contribution of X_2 and $X'_5/X'_5 + X_4$ to the estimation of lean content and to that of fleshiness, was different.

• Utilization of the apparatusses on the slaughter line and the possibilities of objective measurement systems, are discussed. The constructors are requested to supply *service guarantees* for the maintenance of the probes and the electronic devices.

Prediction of the technological yield of Paris ham processing by using measurements at the slaughter-house

B. JACQUET *, P. SELLIER **, J.P. RUNAVOT ***, D. BRAULT ****, Y. HOUIX *****, C. PERROCHEAU ******, J. GOGUE **, J. BOULARD ***

* *C.T.S.C.C.V., Laboratoire de Charcuterie expérimentale, 78350 Jouy-en-Josas*
** *I.N.R.A., Station de Génétique quantitative et appliquée, 78350 Jouy-en-Josas*
*** *I.T.P., Région Ouest, B.P. 3, 35650 Le Rheu*
**** *I.N.R.A., Station de Sélection porcine, 35650 Le Rheu*
***** *I.T.P., Station de Sélection porcine, Le Transloy, 62450 Bapaume*
****** *E.D.E. du Morbihan, Station de Sélection porcine, 56430 Mauron*
France

The aim of the trial was to determine by multiple linear regression analyses (1) to what extent measurements taken at the slaughter-house allow to predict the technological yield of Paris ham processing (weight of cooked ham/weight of defatted deboned fresh ham), and (2) which variables contribute most to the prediction. On a total of 215 female pigs from various breeds and crosses, the technological yield (TY) was measured and 35 predictor variables recorded at the slaughter-house either on the day of slaughter (D0) or on the day after (D1). All correlations were estimated on a within-slaughter day basis. The 11 D0 variables, which consisted of pH1, fibre optic value (FOP) and « Testron » value (TEST) on muscles easy of access on the intact half-carcass, were rather poor predictors of TY : the multiple correlation (R) between TY and the « best » 2-variable prediction equation was only R = 0.50. The 24 D1 predictor variables consisted of subjective scores given to the ham, pH24, reflectance (REF), « time to get wet » (TGW, assessing