PRELIMINARY RESULTS OF THE COMPOSITION OF CARCASSES INCLUDED IN THE CUBAN PIG CARCASS GRID

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SUMMARY: The Cuban pig carcass grid is based on two categories:sacral backfat thickness (SPR) and hot carcass weight (PCR) with four levels for each. Percentage lean decreases and percentage fat increases as SPR increases irrespective of hot carcass weight, while an increase in PCR has not much influence on carcass composition.

INTRODUCTION: In Cuba, pig marketing is done at present on a live weight basis; therefore, there is no price differentiation for over- or under-average carcasses. In the last ten years, Cuban researchers have worked towards setting a pig carcass grading system based on backfat thickness and hot carcass weight (Cruz-Bustillo et al, 1985a, 1985b, 1987, 1988a, 1988b; Prieto et al, 1986, 1987, 1989a, 1989b; Prieto and Cruz-Bustillo, 1987). The aim of this paper is to present the composition of the carcasses included in the grading grid.

MATERIALS AND METHODS: Four-hundred and seventy pig carcasses dissected in standardized conditions were used to initiate the Cuban grid. The five crossbreeds (YLxCC21, YxLxD, YLxH, YDxY and YLxD where Y=Yorkshire, L=Landrace, D=Duroc, H=Hampshire and CC21=new type of Cuban pig) used in commercial pig production and two sexes (barrows and gilts) were included in this sample (Cruz-Bustillo et al, 1987).

Two categories define the grid:backfat thickness measured in the sacral zone of the carcass (SPR) and hot carcass weight without head or hyde (PCR) with four levels for each category (Table 1). Carcass composition is defined by percentage lean (CP) and fat (GP) in commercial cuts (ham, loin and shoulder). Average means and standard deviations for CP and GP were calculated using standard analysis.

Table 1. Levels of the categories defining the Cuban pig carcass grid

Levels	Categories	
	SPR(mm)	PCR(kg)
1	<21	<50.0
2	21-25	50.0-60.0
3	26-30	60.1-70.0
4	>30	>70.0

SPR= sacral backfat,mm
PCR= hot carcass weight,kg

RESULTS AND DISCUSSION: The number of carcasses per crossbreed and per sex is shown in Table 2.

Table 2. Sample description for carcasses included in the grid

Crossbreed	Sex		
	Barrows	Gilts	Overall
YL x CC21	48	52	100
Y x L x D	37	48	85
YL x H	51	49	100
YD x Y	37	47	84
YL x D	49	52	101
Overall	222	248	470

The five crossbreeds are used in different regions of the country and result from the National Swine Crossbreeding Program of which the Swine Research Institute has been consultant from its beginning. The rotational cross (YxLxD) is increasing at present because it is being used in new integral units spread throughout the country. The other crosses are used in specific regions of the country, for example, YL x CC21 is used only in Havana Pig Enterprise.

Figure 1 shows the composition of the carcasses included in the actual grid. It can be seen that two grades are still empty at the moment this paper is being written. It is obvious that CP decreases and GP increases as SPR increases irrespective of hot carcass weight. If sacral fat is supposed to predict lean composition in the carcass it would then be expected that a lineal and dramatic decrease of lean takes place when SPR increases and the contrary would be expected in the case of fat percentage.

Martin et al (1979) reported this tendency when reviewing the swine carcass grading system used in Canada at that moment. In average, lean percentage decreases and fat percentage increases in more than 2% as SPR increases while the changes only average 1% for increases in PCR not showing a defined tendency. At present pig carcasses selected in a stratified way are being dissected and included in the grid. The index values for each grade are presented in another paper.

Figure 1. Cuban pig carcass grading grid. Composition of the carcasses included (average mean +/- S.D)

Sacral back fat, mm (SPR)		Hot carcass weight, kg (PCR)			
		< 50.0	50.0-60.0	60.1-70.0	>70.0
< 21	CP	62.2±2.8	62.7±2.7	63.1±3.3	
	GP	20.3±3.1	20.7±2.8	21.2±3.1	
21-25	CP	59.6±2.7	60.2±2.5	59.9±2.8	58.1±2.5
	GP	23.6±2.6	23.9±2.6	24.3±2.8	26.6±3.2
26-30	CP	58.2±1.6	58.4±2.8	59.2±2.7	57.8±3.3
	GP	25.6±1.9	26.0±2.8	25.3±3.2	27.6±3.3
> 30	CP		56.4±3.2	56.9±2.6	56.1±2.9
	GP		28.4±3.8	28.0±3.2	29.9±3.4

CP and GP = % lean and fat in commercial cuts

CONCLUSIONS: Lean percentage decreases and fat percentage increases as backfat thickness in the sacral zone of the carcass increases while hot carcass weight has little influence upon carcass composition in the Cuban pig carcass grading grid.

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