ECONOMIC CONSIDERATIONS OF CULL DAIRY COWS FATTENED FOR A SPECIAL MARKET

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Introduction

Galicia is a region from the North West of Spain, where there are 488.194 dairy cows (Anuario Estadístico, Xunta de Galicia 2003). The productive life of these cows is about 4 years and more of the 50% are culled because of problems that not restrain a good meat performance. Therefore, there are many culled dairy cows which their fattened will be very profitable. As regard of this, there are many studies that consider this fattened, in order to improve its butcher assessment and to increase the dairy farm incomes (Price & Berg, 1981; Hodgson et al., 1992; Schnell et al., 1997). By economical reason, it is recommended do not fat the culled cows more than the fat score (FS): 3 (1-5 scale). However, in Spain there is a good market for the cows highly fattened, but from 79177 of the culled cows carcasses studied in Galicia, more than the 60% showed 1 or 2 FS, and more than the 30% showed 3 FS (Carballo & Moreno, 2006). In this situation, the grazing feeding could not be enough to reach a high FS on the carcasses. Therefore, it is necessary to continue the fattening with silage and concentrate feeding. The aim of this work is to consider if there are some profits for the Galician dairy farm with this type of fattening.

Materials and Methods

Eighteen culled cows of Frisian breed were grazing on a rotational system with a meadow sown with *Lolium perenne* and white clover. After the spring grazing, the cows were randomly assigned to three different treatments (6 cows/treatment): slaughtering (T0) and the other two groups continued on the plot where were supplied with maize silage (36.05% DM and 0.64 UFC/Kg DM) and concentrate (87.79% DM and 1.289 UFC/Kg. DM) for 34 d. (T30) and 62 d. (T60), respectively.

The supplied feeding and the live weight of the cows were measured, and also after slaughtering the animals, the carcass weight, and the EUROP conformation and fat score (1 to 5) classifications were measured.

The profit was estimated by the difference between the incomes for selling the cows and the feeding costs. The cost of the maize silage was estimated considering the total cost of the fertilizer, the seeds, the herbicide, the machinery and the labour necessary for the seeding, the harvest and the silage making. The cost of the concentrate was the real price The income was estimated considering the price of the carcass kilogramme according to the SEUROP classification realized for The Price Committee of The Livestock National Market (LNM) from Amio during 2004 (Memory LNM, 2005). The carcass weight and the classification were made by official methods at the slaughter factory.

Results and Discussion

The cows increased 68.6 Kg. of live weight (l.w.) during the spring grazing period, and the cows also increased 35 and 58 Kg. of l.w. from T30 and T60 respectively, during the finishing period. The carcasses weights increased from 15.19 (T30) to 28.67 Kg. (T60) due to the dressing percentage was higher in T60 (49.4 vs. 43.4; p<0.05). This result is in agreement with Price & Berg (1981) and Graham & Price (1982) studies. The feeding-intake: gain-weight ratio was higher in T60 than T30 (18.6 vs. 15.0Kg. DM/Kg. l.w.) due to the longest fattening period in T60, as it has been reported by Graham & Price (1982). That was explained because as the weight is increasing high fat content is deposited on the carcass (Swingle et al., 1979; Matulis et al., 1987). It also explains the higher feeding-intake: gain-weight ratio in our results respect to the reported for those authors which slaughtered the cows after a shorter period than this work.

Table 1 shows the carcasses classification grouped according to the market destination.

Table 1 Carcasses classification according to market destination										
		North Spain	Madrid	Exportation						
	Treatments	<u>≥3R or 5O</u>	Equal O4	$\leq 3R \text{ or } > 1P$						
	T0	0	2	4						
	T30	1	5	0						
	T60	3	3	0						

The highest sale price were shown on the carcasses classified with \geq 3R and O5 (fat score and EUROP conformation) and addressed to the North of Spain market, then the carcasses classified with O4 and addressed to the Madrid

market, after that the carcasses classified with $\langle 3R \rangle$ and $\rangle 1P$ and addressed to the exportation, and the lowest sale price were shown on the carcasses classified with 1P and addressed to the meat factory. The T60 carcasses showed the highest classification and the T0 the lowest. This increase in the fat score and EUROP conformation classifications is due to the fattening, as it was shown by Malterre (1986) and Matulis et al. (1987) study. Table 2 showed the balance between the incomes and the costs. The incomes for increasing the carcass weight was lower than the total cost of feeding in T30 (11.57) and T60 (22.48).

	T30			T60		
COST	Supply	€Kg.	Cost	<u>Supply</u>	€Kg.	<u>Cost</u>
Silage maize	435.84	0.068	29.64	910.31	0.068	61.90
Concentrate	89.50	0.224	20.05	167.00	0.224	37.41
Total Feeding Cost			49.69			99.31
INCOME	<u>Kg.</u>	€Kg.	Income	<u>Kg.</u>	€Kg.	Income
Increase carcass weight	15.19	2.51	38.12	28.67	2.68	76.83
Increase carcass price	314.81	0.17	53.52	304.33	0.34	103.47
Total income			91.64			180.30
DIFFERENCE			+ 41.95			+ 89.17

Table 2.- Balance of the costs and incomes from the culled dairy cows fattening with silage maize and concentrate

The profit achieved is mainly due to the increase on the carcass price. The carcass kilogramme according to the EUROP classification realized for The Price Committee of LNM (2003), increased $0.31 \in$ from P to O conformation, $0.83 \in$ from O to R, $0.40 \in$ from R to E, and $0.26 \in$ from E to U. It has been supposed an increase of 0.17 and $0.34 \in$ kg in the carcass weight from T30 and T60, respectively, before the fattening period. That carcass price increase was higher than the total feeding cost, with $3.83 \in$ in cows of T30 and $4.17 \in$ of T60, being a consequence of the higher price differences between R and O conformation than the other EUROP conformations. That circumstance was reported by Carballo & Moreno (2006), which have found some big price differences between carcasses that showed a conformation less than R, and a conformation R or higher. That study was measured in 79197 culled cows carcasses from two slaughter factories in La Coruña. It was not considered the different price according to the fat score because there was not an official price committee, but the slaughter factory pay more according to the carcasses fat increase in the culled cows.

Conclusions

It is concluded that it could be interesting the finishing period after grazing, by the improvement of the carcass weight with 1Kg/d and therefore, the carcass characteristics. Moreover, it could be more favourable for a better marketing, finishing the culled cows for two months with concentrate.

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