

ORGANIC VS CONVENTIONAL HERD EFFECTS ON THE WEIGHTS AND DAILY GAINS IN MURCIANO-GRANADINA KIDS

[EFECTO DEL REBAÑO ORGANIC VS CONVENCIONAL SOBRE EL PESO Y LA GANANCIA DIARIA EN CABRITOS MURCIANO-GRANADINA]

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SUMMARY

The present work is testing the meat production ability of the Murciano-Granadina dairy kids maintained under organic and conventional management conditions. The weights of 89 kids of both sexes were recorded weekly from birth to slaughtering at the age reaching 7 Kg., according local commercial customs. 573 weights records were obtained in the three herds involved in the experience. These data were submitted to a statistical descriptive analysis enclosing central and dispersive descriptive statistics. We can stand out mean values around 5.5 Kg. for conventional farms, while the organic representative showed a mean slightly lower value, near 5 kg, the standard deviation was stable for all the herds around 1.8 and 2 kg, what demonstrates a high variability. The ANOVA developed under the GLM model demonstrates significant effect of the herd, sex and its interaction. The Duncan Pos Hoc test of means homogeneity showed the effect of the organic herd as responsible of the significant differences. Also a sexual dimorphism was detected in this analysis. The main conclusion of this work is the necessity of a differential commercialization of the organic kids to get an over value supported in their quality; in the present conditions the subproduction of organic kids in dairy organic farms is not competitive.

INTRODUCTION

Present difficulties of the agriculture are stimulating the sector to look for some alternatives to get a bigger added value for their products. One way to get it is the production under the norm of the organic products. Farming is also working in this way; even the difficulties in competitiveness with conventional products are bigger, especially in general channels of

commercialization. A part of the Spanish Goat dairy production is involved in its transformation to organic

systems, producing traditional organic cheeses with commercial successes by the moment. Meat is a sub production in dairy goats, because kids compete for the main productive objective, the milk. To get some input from kid production, dairy farmer locates in the market young carcasses at low prizes. The organic farmers make the same, but the carcass of their kid is generally undervalued because they are fed with some obvious restrictions. We are intended to get a commercial differentiation of the Murciano-Granadina organic kid carcasses as the only way to get a bigger profit from its production to complement the milk production. In this paper we start the study of the differences in productive behavior of organic and conventional Murciano-Granadina kids, starting with the ability for growing capacity expressed in test day weights.

MATERIAL AND METHODS

89 Murciano-Granadina kids of both sexes were weekly weighted from birth to slaughtering at the age reaching 7 Kg. This criterion was decided taking into account cultural criteria based on local commercial customs. A total of 573 weights records resulted from this study, which involved the three herds representing intensive, semi intensive and extensive-organic systems. We have developed a statistical analysis in two steps; the first consists in the calculation of descriptive statistics of all weights and daily gains obtained; and the second in the application of a two way ANOVA model enclosing a fixed effects management system and sex, observing the interaction among them as well. These studies were developed using the statistical package SAS v 8.1. Finally a Duncan Pos Hoc test of mean homogeneity was developed in order to locate with exactitude in which level of the factor are located the differences.

RESULTS AND DISCUSSION

We have obtained mean values around 5.5 Kg. for both conventional farms, intensive and semi intensive, while the organic farm showed a slightly lower value of the mean, near 5 kg, the standard deviation was stable for all the herds around 1.8 and 2 kg which represent a 40% in Coefficient of Variation, an important value which is pointing out a high level of variability. Table 1 is remarking the results mentioned above. Johnson y McGowan (1998) found that kids from intensive system were heavier and their carcasses were heavier too (12.6 y 20.2 kg), than kids from semi-intensive system. Anous y Mourad (2001) found that Alpine kids from intensive system were heavier at slaughter (14.9 vs 9.7 kg, $p < 0.01$) than kids from semi-intensive system. Mourad (1986) found the same in 'Alpine' kids, with shown heavier carcass in intensive system than in the semi-intensive system (8.08 vs 6.94 kg).

Table 1. Descriptive statistics of recorded weights in the three type of farms taken into account.

System	N	Mean	Min	Max	SD	SE
Intensive	236	5427,2	2660	9760	1895,1	123,4
Organic.	132	4942,2	1900	9720	1838,5	160,0
Semi-Int	205	5529,5	2340	11800	2043,1	142,7

Two ways ANOVA demonstrated significant effects of the management system and the sex, but also for their interaction, as it is shown in Table 2. Duncan Pos hoc comparison of means (Table 3) pointed out as the organic system keeps all the detected differences, while the conventional farm was homogeneous.

A clear sexual dimorphism which could be different among systems, was detected, as it is advising the significant interaction between sexes and systems, so factor such as feeding, exercise, cares, etc are affecting the sexual dimorphism of this breed in this early stages. Peña et al. (1994), didn't find statistical sexual dimorphism in 'Florida Sevillana's goat, but the daily gain was bigger in males (212 g/d) than in females (195 g/d). Mahgoub et al. (2005) found the same sexual dimorphism in 'Jebel Akdhar' goats.

As we pointed out in the introduction, it is not possible to compete with organic kids in the free market, because the conventional ones show a better performance, the solution for its profitable commercialization is to involve their carcasses under the umbrella of the organic products, it could justify the overprice demanded for its profitability.

Table 2. Results of the two ways ANOVA. Both factors and the interaction resulted significant.

	GL	CM	F	p-level
System	2	42737800	57,2278***	0,000
Sex	1	149322448	199,9493***	0,000
Interaction	2	36854704	49,3501***	0,000
ERROR	558	746801,5		

Table 3. Results of the Duncan Pos Hoc homogeneity test of means of mean test among management systems.

	{I}	{O}	{S}
	5403,636	4909,201	5540,917
Intensive		,000009***	,134207
Organic	,000009***		,000011***
Semi Intensive	,134207	,000011***	

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