

Effect of a food diet and weight gain on a fattening of sheep of the Dorper breed

Efecto de una dieta alimenticia y ganancia de peso en una engorda de ovinos de la raza Dorper

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Abstract

In the present work we intend to evaluate the diet used in the fattening of 27 lambs of the dorper race and also measure the daily weight gains and by means of the comparison with different authors to make the decision to return or not to use said diet. The work done in order to evaluate the weight gain of 27 lambs of the Dorper breed in fattening fed with a diet based on hay of oats, alfalfa hay, ground corn, ground sorghum and chicken manure in which were found gains of 333 grams per day, thus having a final market weight of 48 kg on average, this in a period of 3 months of fattening after an early weaning of 2 months. Therefore, the decision was made that this diet based on oats, alfalfa, corn, sorghum and chicken manure generates adequate profits and therefore will be used by the producer in future fattening. The variations of the CA over time were estimated by means of a quadratic equation in the group of sheep.

Weight gain, Fattening, Sheep

Resumen

En el presente trabajo se midió la ganancia diaria de peso a la engorda de 27 borregos de la raza Dorper y así mismo mediante la comparación con diferentes autores tomar la decisión de volver o no a utilizar dicha dieta. El trabajo fue realizado con el fin de evaluar la ganancia de peso de 27 borregos de la raza Dorper a la engorda, alimentados con una dieta a base de heno de avena, heno de alfalfa, maíz molido, sorgo molido y gallinaza, en la cual se encontraron ganancias de 333 gramos por día, llegando así a un peso final de mercado de 48 kg en promedio, esto en un periodo de 3 meses de engorda posterior a un destete temprano de 2 meses. Se concluye que las ganancias diarias de peso de 333 gramos generadas con esta dieta a base de avena, alfalfa, maíz, sorgo y gallinaza se encuentran dentro de rangos normales. Las variaciones del CA a través del tiempo se estimaron mediante una ecuación cuadrática en el grupo de borregos.

Ganancia de peso, Engorda, Ovinos

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Introduction

In this work, the daily weight gain of a fattening of Dorper breed sheep that were fed a diet based on oat hay, alfalfa hay, ground corn, ground sorghum and chicken manure was evaluated.

(Cando, 2006) obtained daily weight gains of 380 grams in Dorper sheep fed a diet with 15% CP, likewise, (Martínez, 2007) obtained gains of 320 grams supplying a diet with 15% CP.

According to the National Research Council and results obtained by various authors, it is found that Dorper sheep have daily weight gains of 300 to 400 grams fed a diet of between 13.5 and 16% CP. In addition (Aguilar, 2009) mentions that sheep under 5 months of age present higher gains and better results when fattening.

Some authors have verified this theory based on the results of their research such as:

(Ávila, 2005) obtained daily weight gains of 320 grams by feeding his herd with food with a percentage of 14% of crude protein. (Romero, 2000) had a weight gain of 374 grams feeding his sheep with food with 16% protein. (Juárez, 1998) had a weight gain of 360 grams feeding with whole grains and soy, with a value of 14% of crude protein. (Moreno, 1997) obtained a weight gain of 327 grams by supplying food with 13.5% as the value of crude protein. (Álvarez, 2001) obtained 356 grams of weight gain with food based on 15% crude protein. (Maldonado, 2003) achieved gains of 380 grams with 16% crude protein in their food.

(Pérez, 2002) obtained gains of 361 grams, feeding his sheep with a diet of 14% crude protein. (Armenta, 2009) obtained gains of just over 9 kilos and 600 grams in the course of a month with a 14.5% crude protein food. (Mondragón, 2008) obtained daily weight gains of 353 grams with high protein diets, with a value of 15%. (Sánchez, 2003) had a gain of 340 grams feeding food with 14% crude protein. (Robles, 1999) achieved daily weight gains of 352 grams in his Dorper breed herd with 16% crude protein feed.

(Suarez, 2000) had gains of 322 grams with foods of 13.5% crude protein. (Sánchez, 1992) increased the monthly gain of 10 kg of weight by feeding a diet with a value of 16% crude protein. (Carranza, 2012) increased the weight gains of his herd to 378 grams of weight with feed based on 16% crude protein. (Saucedo, 2000) his dorper herd increased their daily weight gain to 354 grams with 14% crude protein in their feed. On the other hand, a diet with 14.7% crude protein generated daily weight gains of 328 grams (Abrego, 2011).

Materials and methods

We worked with 27 male Dorper sheep, which were randomly distributed in two pens with 14 and 13 sheep in each batch respectively. Said sheep were weighed at the beginning of fattening, with variability between the weights of each sheep, which ranged from 16 to 22 kilograms with an average weight of 20 ± 2 kilograms.

All animals were applied vitamin A, D, E and dewormed against internal and external parasites. Using the following commercial products: Vigantol, Catosal and Ivomec by intramuscular route respectively.

According to the nutritional requirements for the lambs of the National Council Research (1985) a ration was elaborated, the chemical composition is presented in (table 1) crude protein (PC), metabolizable energy (EM), calcium (Ca), phosphorus (P) and crude fiber (FC). The CA (food consumption) was estimated as a group.

The food was weighed daily on a digital scale, it was offered twice a day morning and afternoon, the rejected food was also weighed daily before providing the food, if the rejection was less than 5%, the food offered was increased and if it was top was diminished.

To estimate the daily weight gain, the sheep were weighed every 15 days at 8:00 am, on a digital scale. The trial period was twelve weeks. Variations in CA over time were estimated by means of a quadratic equation in the group of sheep. Likewise, every 15 days a manure removal and cleaning of the floors was carried out.

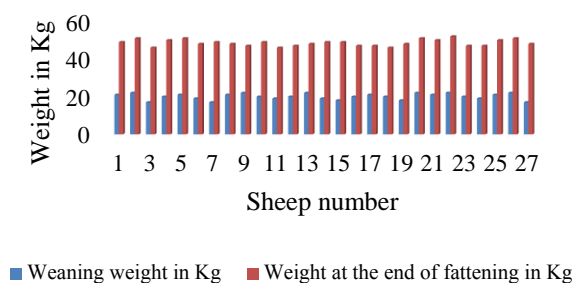
| PC | EM | Ca | P | FC |
|------|----------|-----|-----|------|
| % | Mcal/ kg | % | % | % |
| 15.1 | 2.6 | 2.5 | 0.9 | 12.4 |

Table 1 Composition of the diet received by the 27 sheep

Results and discussion

The sheep obtained average weights of 48 ± 3 Kg. The daily weight gain of 333 grams per day as shown in Graphic 1 obtained by the 27 sheep compared to the weight gains that different authors manage of 350 grams per day, According to the diet with 15% crude protein that these 27 Dorper sheep receive, we can say that during the 3 months of fattening, daily weight gains were obtained that are within quite good ranges (Graphic 1).

Weight at the beginning and end of gaining



Graphic 1 Description of the average weight at the beginning and at the end of the fattening

(Sánchez, 1992) obtained daily weight gains of 300 grams with a diet of 13.5% crude protein in a first fattening in 1988 and obtained daily weight gains of 350 grams with a diet of 15% crude protein in a second fattening, which is something very similar compared to the gains we obtained, on the other hand (Carranza, 2012) obtained daily weight gains of 310 grams with a diet of 14% CP crude protein, which is more adjusted with the gains that were obtained in the present diet, but there are some discrepancies in the gains because.

(Saucedo, 2000) obtained daily weight gains of 350 grams with a diet of between 13% of crude protein, which shows that with a diet with a lower percentage of crude protein and therefore lower expenses for the purchase of ration inputs, equal or better weight gains per day are obtained, so that you fatten with lower percentages of protein become more profitable when it comes to ad choose them to supply them to a fattening with which (Abrego, 2011) agrees because he obtained daily weight gains of 340 grams with a diet also of 13% crude protein, likewise (Quinto, 2014) he obtained daily weight gains of 350 grams with a diet of between 13.5% of crude protein which in turn could make us believe that a diet of 13% of crude protein can generate excellent weight gains of between 340 and 350 grams of weight per day. But considering that these authors used growth promoters which alters the deposition of muscle and fat and does not reveal as such the daily weight gains from the diet, but rather reveals the gains generated by the diet combined with the gains of the promoter. In particular (Fifth, 2014) he used zilpaterol as a growth promoter in his fattening of 487 sheep in 2013 and a second and third fattening of 709 and 513 sheep respectively in 2014 where he again used zilpaterol as a growth promoter.

On the other hand, there is a disagreement or at least there is a discrepancy with (Abrego, 2011) and (Quinto, 2014) since (Medina, 1995) claims to have obtained daily weight gains of 350 grams with a diet of 16% crude protein, and argues that these 350 gram daily weight gains cannot be achieved with diets with a protein content of less than 15%. It also says that to achieve these daily weight gains of 350 grams with diets with a protein content of less than 15% requires the use of growth promoting products or sequestering products, for which we can justify the gains they obtained (Abrego, 2011) and (Fifth, 2014), since both used growth promoters, and if they had not used promoters, their daily weight gains would have been lower and we can consider that our diet generates the same gains as the diets they used.

On the other hand (Rojo, 2006) claims to have obtained daily weight gains of 337 grams with a diet of 15% crude protein and without the use of substances that improve gain, this in 2000 and in 2003 when in 2005 he used his diet of 15% crude protein again in 7 fattening women in which he claims to have obtained gains of between 329 and 341 grams of weight gain per day, (Gutiérrez, 2000) he obtained daily weight gains of 344 grams with a diet of 15.4% of crude protein, which also adjusts with the daily weight gains that we obtained and even more according to the 333 grams gains that we obtained, (Ramírez, 2001) obtained 327 grams daily weight gains with a diet 15% crude protein, which compares to the 333 gram daily weight gain that we got from a 15% crude protein diet.

Conclusion

We can say that the diet with 15% crude protein that was administered to the lambs during the 3 months of fattening was adequate, since it generates excellent weight gains of 333 grams per day, which agrees and is within acceptable and managed ranges. By various authors that were previously mentioned, even the diet could be adjusted by subsequent fatteners who wish to use it at 14% crude protein in order to reduce costs for inputs if it is the case; but if the input costs of changing the diet from 15% to 14% crude protein are not reflected, then the diet should be used as is.

Therefore, this diet could be used in subsequent fattening by the same producer and by new fatteners. Well, it generates good weight gains, and therefore, good monetary gains, which is reflected in a greater profitability of the diet and the fattening of the sheep.

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