

LONGEVITY OF SHEEP AT A DAIRY FARM VACCINATED WITH GUDAIR AND UNVACCINATED AGAINST PARATUBERCULOSIS

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ABSTRACT

In 2010, we published findings having to do with milk production, comparing the yields of groups of sheep born in 2006 and 2007, half of which, respectively, were vaccinated against paratuberculosis (PTB) and the other half were not. Over the years, we have kept records of the productive data of these groups. A 1.4-year longer life span is observed in vaccinated groups than in unvaccinated groups, and the productive increments derived from that increase have been calculated according to the herd's average values i.e., there were about 300 litres more of milk per vaccinated sheep, two more lambs birthed per vaccinated sheep and a 23% reduction in replacement rates.

Key words

Paratuberculosis, sheep, longevity, vaccination.

INTRODUCTION

Paratuberculosis is a consumptive disease that is highly prevalent in flocks of sheep. It causes losses of young animals and results in especially negative effects on flock replacement parameters as well as on production, even when the presence of clinically affected animals is very low.

The longevity of a dairy sheep is decisive when assessing its economic value. A longer amortization period of its replacement cost and the prolongation of its productive life clearly improve its profitability. Reduction of the replacement rate is a key factor, and management of productive parameters, and not just age, at the time of culling due to age, support this improvement. Paratuberculosis (PTB) influences this parameter quite negatively, since it causes premature losses and, when highly prevalent in a herd, it necessitates an increase in annual replacement numbers to compensate for those losses. We do not know of any data on the evolution of this extra replacement figure in situations in which the prevalence of the disease has decreased due to vaccination until its morbidity is imperceptible, as is the case of this farm.

MATERIAL AND METHODS

This study starts after the one published in 2010 by Tamayo et al. (5), in which both halves of the 2006 and

2007 replacement batches of dairy sheep flocks were vaccinated with Gudair to prevent PTB; the other two halves were left unvaccinated (1, 2). The differences in milk production from the first two lactations were compared.

The data records of this farm have been saved and it has been observed that the sheep from those batches that were vaccinated yielded longevity data greater than those unvaccinated.

The farm keeps records of entries, losses, their causes, etc. (4) associated with the electronic identification number of the intraruminal bolus; there is also monitoring of milk that provides accurate data on milk production.

This study evaluates the longevity, rounded to the month, of 440 sheep belonging to the aforementioned replacements, divided into four groups of comparable numbers. Given that 34 (7.7% of the total) of those animals are still present on the farm, they were scored with a longevity of 132 months if they were born in 2006 and 120 months if they were born in 2007.

The farm's census has remained, over the 11 years that are covered in this study, between 921 and 1081 animals (the average number being 1,017.6). Its milk production per sheep on site and per year was 220.89 litres (Table 1).

The prolificness in this flock is 1.4 lambs per sheep on site and year.

Table 1. Census per years and mean production per ewe on site.

YEAR	MILKING CENSUS	LITRES/EWE	TOTAL MILK
2008	1,081	207.94	224,783.14
2009	1,056	207.99	219,637.44
2010	1,073	212.22	227,712.06
2011	1,065	224.18	238,751.70
2012	1,041	207.14	215,632.74
2013	921	220.23	202,831.83
2014	929	249.37	231,664.73
2015	975	243.38	237,295.50
Total	8,141	220.89	1,798,309.14

RESULTS AND DISCUSSION

The average longevity of the total of the animals born in 2006 and 2007 on the farm is 6.75 years (geometric mean of 6.26).

The average longevity of the animals born in 2006 and 2007, which were not vaccinated against paratuberculosis, amounts to 6.01 years (geometric mean of 5.48).

The average longevity of animals born in 2006 and 2007, which were vaccinated against paratuberculosis is 7.41 years (geometric mean of 7.05).

This means that vaccinated sheep have approximately 23% greater average productive life.

On the study's closing date for data collection, of the animals born in 2006, 14 sheep are still alive, 10 vaccinated and 4 unvaccinated; of the animals born in 2007, 20 sheep are still alive, of which 15 are vaccinated and 5 are unvaccinated.

Given the characteristics of the flock, the most striking conclusion is probably that in the 1.4 years of greater longevity of vaccinated sheep compared to unvaccinated sheep, they can be attributed with higher milk production in their productive life, quantified at 309.25 litres, and the increase in income from 2 lambs born in the additional period of longevity of the vaccinated sheep is not negligible.

We are currently considering a further, detailed study to assess whether the differences in milk production observed in our study published in 2010 persist to this day.

CONCLUSIONS

Vaccination of dairy sheep with Gudair not only controls the occurrence of clinical cases of PTB (3), it also exerts visible activity on the longevity of vaccinated animals, which has important economic repercussions on the operation's accounting of the vaccinated individuals. The increase in milk production and births of lambs, in addition to the repercussions on replacement (resulting in 23% greater longevity of vaccinated animals), has a highly significant effect on income obtained from the herd.

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