Causes of death and organs condemnation at slaughter of sheep in a feedlot system in Southern Rio Grande do Sul[1]

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ABSTRACT.- Ribeiro L.S., Scheid H.V., Venancio F.R., Marques L.S. & Schild A.L. 2022. **Causes of death and organs condemnation at slaughter of sheep in a feedlot system in Southern Rio Grande do Sul.** *Pesquisa Veterinária Brasileira 42:e07159, 2022.* Laboratório Regional de Diagnóstico, Faculdade de Veterinária, Universidade Federal de Pelotas, Campus Capão do Leão, Capão do Leão, RS 96010-900, Brazil. E-mail: alschild@terra.com.br

In Brazil the second largest sheep herd is in Rio Grande do Sul and in recent years the demand for meat consumption of this specie has increased. Intensive farming systems have made considerable progress in this region with the objective of increasing the production of sheep for slaughter and obtaining a uniform batch to ensure better quality of sheep meat to consumers. However, the agglomeration and stress that animals go through can lead to the occurrence of illnesses and economic loss to producers. The objectives of this paper were to determine the main causes of death that affected sheep in a feedlot system, to establish forms of control and prophylaxis of diagnosed illnesses, and to estimate the economic losses resulting from them. The objective was also to determine the causes of condemnation of organs or carcasses in the slaughterhouses that processed the sheep were sent, and to estimate the losses in this productive sector. For this, a follow-up work was carried out in an establishment located in the city of São Lourenço do Sul, Rio Grande do Sul, from October 2020 to September 2021. The dead sheep at the feedlot were necropsied, and the diagnosis was made based on clinical signs, pathology, and bacteriology. The main diseases diagnosed were parasitic enteritis (15.4%), pneumonia (13%), and listeriosis (9.6%). In the slaughterhouse study, the lesions that led to the highest number of condemnations were hydatidosis (29.9%), renal congestion (26.2%), and renal ischemia (25.8%). The economic losses estimated for the death of sheep in 2021 was R$17,480.00, significantly lower than the approximate losses in 2019 and 2020 of R$50,000.00 and R$54,000.00, respectively. This highlights the importance of technical assistance to reduce these losses due to mortality in sheep raised in a feedlot system. It was also observed the kidneys of the sheep were the organs most frequently selected for condemnation. The economic value of the kidneys sold as disposed waste was eight time lower than that the value of kidneys suitable for consumption.

INDEX TERMS: Sheep disease, intensive breeding system, mortality, organ condemnations, slaughter.

RESUMO.- [**Causas de morte e condenação de órgãos no abate de ovinos em sistema de confinamento no Sul do Rio Grande do Sul.**] No Rio Grande do Sul está localizado o segundo maior rebanho de ovinos do Brasil e a demanda pelo consumo de carne desta espécie animal tem aumentado nos últimos anos. As criações em sistema intensivo têm tido um avanço considerável nesta região com o objetivo de aumentar a produção de ovinos para o abate e obter um lote uniforme, garantindo melhor qualidade da carne aos consumidores. Por outro lado, a aglomeração e o estresse que os animais passam pode levar a ocorrência de enfermidades e trazer prejuízos econômicos aos produtores. Os objetivos deste trabalho foram determinar as principais causas de morte que afetaram ovinos em um sistema intensivo de criação, estabelecer formas de controle e profilaxia das enfermidades diagnosticadas, bem como estimar as perdas econômicas delas decorrentes. Objetivou-se,

também, determinar as causas de condenação de órgãos ou carcaças nos frigoríficos aos quais os ovinos eram enviados para o abate, para estimar as perdas neste setor produtivo. Para isso, foi realizado um trabalho de acompanhamento em um estabelecimento localizado no município de São Lourenço do Sul, Rio Grande do Sul, no período de outubro de 2020 até setembro de 2021. Os ovinos mortos eram necropsiados e o diagnóstico realizado com base nos sinais clínicos, patologia e bacteriologia. As principais enfermidades diagnosticadas foram as parasitoses (15,4%) e as pneumonias (13%), seguidas de listeriose (9,6%). As lesões que levaram ao maior número de condenações foram hidatidose (29,9%), congestão renal (26,2%) e isquemia renal (25,8%). A estimativa de perdas econômicas no ano de 2021 foi de R$17.480,00, enquanto as perdas por morte de ovinos nos anos 2019 e 2020 foram de aproximadamente R$50.000,00 e R$54.000,00, respectivamente. Ficou evidenciada a importância da assistência técnica para a redução dessas perdas por mortalidade de ovinos criados em sistema intensivo. Observou-se, ainda, que os rins foram os órgãos mais frequentemente descartados para o consumo e que o valor de descarte como resíduo era oito vezes menor do que o valor dos rins aptos para o consumo.

TERMOS DE INDEXAÇÃO: Enfermidades de ovinos, criação intensiva, mortalidade, condenação de órgãos, abate.

INTRODUCTION

Sheep farming is practiced worldwide, accounting for more than 1.2 billion sheep (FAO 2019). Brazil has 20.6 million heads that are concentrated in the northeast (70.6%) and south (18.7%) regions. In Rio Grande do Sul, the sheep herd is over 3.8 million heads (IBGE 2019).

The primary purpose of sheep farming is to produce meat, although the production of wool and milk is also important. The global consumption of sheep meat is 1.3kg per capita, while in Brazil it is 0.5kg per capita, which is lower than that of other sources of animal protein (OECD 2020). In 2019, sheep meat production in the country reached more than 97,000 tons, which corresponds officially to 6 million slaughtered head of sheep, representing 30.9% of the Brazilian sheep herd in this year (FAO 2019). In Rio Grande do Sul 66.7% of sheep herds are dedicated to meat production, 33.3% to wool production, and 0.02% to milk (EMATER/RS 2020).

The growth in consumption of mutton in Brazil has led producers to expand their production to meet the market demand, with the objective of guaranteeing the quality of products from sheep farming. The organization of the sheep meat production chain, as well as the standardization of production procedures reduces seasonality, while increasing the supply (Magalhães & Lucena 2019). Sheep feedlots have been one of the alternatives that has been growing in recent years. The implementation of feedlots is not simple; however, it is necessary to know the diseases that occur in sheep in this breeding system, as has been studied in cattle feedlots (Estima-Silva et al. 2020). The appeal of this effort is preventive measures and treatments that can be implemented to ensure the health of the herds and reduce economic losses.

Factors such as the agglomeration of sheep – often from different origins – stress, and dietary changes make animals more susceptible to diseases. Moreover can occur delays in the development and termination of confined animals,

generating more costs with treatment, and feeding (González et al. 2016). Previous studies report that the main causes of disease in feedlots are respiratory diseases caused by bacteria and viruses, acidosis, and abomasum ulcers, nutritional imbalances, and parasitic diseases (González et al. 2016).

In Brazil, the information on diseases that affect sheep feedlots is scarce. In sheep raised in the field, some diagnostic surveys carried out across the country have shown that the most common diseases are parasitic and respiratory in nature (Rissi et al. 2010, Almeida et al. 2013). Therefore, it emphasized the importance of diagnosing diseases that occur in intensively reared sheep, aiming to minimize direct economic losses caused by deaths and indirect losses caused by the costs of treatments and labor.

The objectives of this study were: to determine the main causes of death occurring in sheep raised in a feedlot system in a farm in the southern region of Rio Grande do Sul; to suggest ways of control and prevent some diseases; to identify the causes of organs condemnation at slaughterhouses; and to estimate the economic losses that arise from these diseases.

MATERIALS AND METHODS

The study was performed in a farm in the municipality of São Lourenço do Sul, Rio Grande do Sul (31º22'24.6" S and 51º58'16.5" W), where feedlot sheep farming began in 2015. The sheep were kept in a 1,200 animal maximum capacity shed, divided into stalls with 35 sheep each, with rice husks as bedding (Fig.1), located on the east and west sides of the shed. Poultry had free access to sheep troughs on the west side of the shed. There was also a transition area prior to the feedlot. Sheep selected for feedlot were between 90 days and 12 months of age, weighed between 20kg and 34kg, and remained in feedlot for a period of approximately 35 days.

Upon arrival of the animals, the sanitary protocol of vaccination for clostridiosis and administration of antiparasitic drugs based on Monepantel (Zolvix®) was performed. The sheep were then kept for seven days in transition area to properly adapt to the feedlot. On the first day, corn silage plus alfalfa hay were offered, and from the second day onwards, the concentrated ration was gradually increased until the seventh day. The composition of the diet administered to the feedlot sheep after adaptation was 20% of concentrated feed

Fig.1. Panoramic view of a shed divided into 35 sheep capacity stalls.

(36% protein), 70% corn grain, and 10% corn silage. The food was mechanically mixed on the farm and given at a proportion of 2% of the sheep's body weight, distributed in 10 meters of trough per stall.

To identify the causes of death in the sheep, the farm was monitored from October 2020 to September 2021. When a sheep died, the owner informed the "Laboratório Regional de Diagnóstico" (LRD) of the "Faculdade de Veterinária" of the "Universidade Federal de Pelotas" (UFPel) technicians in order for a necropsy to be performed. Fragments of various organs and the central nervous system were collected, fixed in 10% buffered formalin, routinely processed for histopathology, and stained with hematoxylin and eosin (HE). When it was suspected that the death was due to bacterial causes, samples were frozen and sent to the bacteriology laboratory of the LRD/UFPel for microbiological culture.

Weekly batches between 20 to 70 sheep were slaughtered at Frigorífico Coqueiro in São Lourenço do Sul/RS and Frigorífico Producarne in Bagé/RS. A survey was conducted along with "Secretaria da Agricultura e Desenvolvimento Rural" (SEAPDR) of RS, to obtain data on organs condemnation of the animals from this feedlot. Data on the annual maintenance costs of the feedlot were obtained from the owner, and the sales values for sheep in RS were obtained in 2019 and 2020 from the Intelligence and Market Center for Goats and Sheep valuation (EMBRAPA 2021). In 2021 the valuation was sourced from the "Centro de Estudos Avançados em Economia Aplicada" (Center for Advanced Studies in Applied Economics - CEPEA 2021), considering the lamb sales weight an average of 40kg. The sell price of one sheep was approximately R$291.60 in 2019, R$351.60 in 2020, and R$460.00 in 2021. The total sales of healthy organs and unsuitable waste for consumption were obtained from one of the slaughterhouses.

RESULTS

From October 2020 to September 2021, 5,730 sheep were kept at the feedlot from 25 to 45 days. Of these sheep, 61 died, and 52 necropsies were performed. The sheep submitted to necropsy were from four to nine months of age; 24 female and 28 males. The diagnoses, the population at risk in the follow-up period, and the mortality rate are presented in Table 1. In 2019, 174 of the 5,312 feedlot sheep died (mortality rate of 3.28%); 156 of 5,783 sheep died in 2020 (mortality rate of 2.70%); and from January 2021 to September 2021, 38 of the 3,850 sheep died (mortality rate of 0.99%. The population at risk was sheep by sending them to slaughter, which took place at least twice a week, or by the acquisition of sheep, which was performed weekly. Sheep deaths occurred during all months of the year, with the exception of listeriosis outbreak that occurred in November 2020. In this case, the revision and exchange of the silage offered to the animals and the prevention of the access of domestic birds to the troughs were indicated. After these measures, the disease was controlled, and no new cases were observed.

Gastrointestinal tract illnesses (Fig.2-3) occurred in 19 sheep (36.5%). Of these, 11 animals were found dead, without any clinical signs. Those displaying clinical signs had apathy (3 sheep), pale mucous membranes (4), dyspnea (3), weakness (2), dysphagia (1), posterior train stiffness (1) and abdominal pain (1).

Table 1. Diseases in feedlot sheep, population at risk, and specific mortality rate, in southern Rio Grande do Sul, from October 2020 to September 2021

Gastrointestinal tract illnesses	N	Population at risk	Mortality rate (%)	% total	% of category
Parasitic enteritis	8	4,075	0.20	15.4	42
Hemoncosis	3	1,831	0.16	5.8	16
Rumenitis/acidosis	3	2,414	0.12	5.8	16
Abomasum ulcer	2	1,461	0.13	3.8	11
Enteritis by *Eschericha coli*	1	1,014	0.10	1.9	5
Peritonitis due to ulcer perforation	1	920	0.11	1.9	5
Erratic migration by cestodeo	1	625	0.16	1.9	5
TOTAL	19	-	-	36.5	100
Respiratory illnesses	**N**	**Population at risk**	**Mortality rate (%)**	**% total**	**% of category**
Pneumonia	7	5,209	0.13	13	47
Pulmonary edema	4	2,210	0.18	8	27
Bronchopneumonia	3	2,419	0.12	6	20
Pulmonary hemorrhage	1	873	0.11	2	7
TOTAL	15	-	-	28.8	100
Other ilnesses	**N**	**Population at risk**	**Mortality rate (%)**	**% total**	**% of category**
Listeriosis	5	3,522	0.14	9.6	50
Urolithiasis	2	1,366	0.14	3.8	20
Gangrene	1	887	0.11	1.9	10
Endocarditis	1	569	0.18	1.9	10
Tetanus	1	536	0.19	1.9	10
TOTAL	10	-	-	19.1	100
Inconclusive*	8	4,674	0.17	15.4	100

* One sheep showed marked autolysis.

Respiratory illnesses occurred on 15 occasions (28.9%) (Fig.4): seven cases in spring, four cases in summer, and four cases in autumn. Three animals were affected by these diseases and were found dead, and the clinical signs presented by the others included respiratory difficulty (6), apathy (3), pale mucous membranes (4), submandibular edema (2), fever (2), diarrhea (1), hemoptysis (1), and tremors (1).

An outbreak of listeriosis was also diagnosed affecting five sheep, representing 9.6% of the sheep that died. The clinical signs presented were loss of balance (3 sheep), tremors (2), excessive salivation (2), lateralization of the head (1), difficulty breathing (1), tilt (1), apathy (1) and pedaling movements (1). Sheep with listeriosis were in the feedlot between three and 30 days when they died.

Urolothiasis was diagnosed in two sheep (3.9%), that showed apathy, progressive weight loss, and edema in the ventral abdomen. There was also one case of gas gangrene (1.9%) that was characterized by swelling in the left hind limb and crepitation; one case of tetanus (1.9%), in which the sheep presented loss of balance and rigidity of the hind leg and decubitus; and one case of endocarditis (1.9%). In eight necropsied sheep (15.4%), it was not possible to determine the cause of death, and the cases were grouped as inconclusive diagnoses. One of these sheep was in autolysis.

In bacteriological cultures, five different bacterial agents related to diseases were isolated: *Pasteurella* sp. in two cases of bronchopneumonia (Fig.5); *Escherichia coli* in one case of pneumonia, *Streptococcus* sp. and *Corynebacterium* sp.
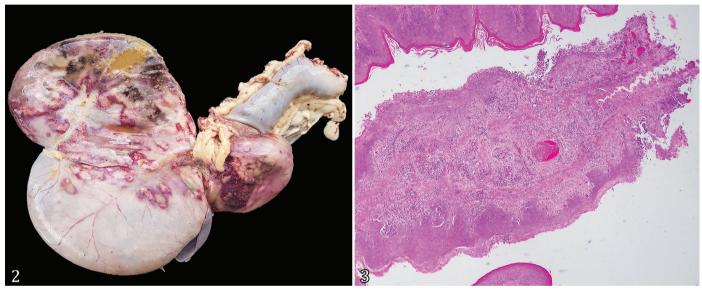

Fig.2-3. Gastrointestinal tract disease in confined sheep. Acidosis/ruminitis. (**2**) Rumen with yellowish fluid content and hemorrhagic areas in the organ's serosa. (**3**) Histological lesion of the ruminal mucosa that presents detachment of the ruminal epithelium, presence of pustules, and ulceration of the epithelium with inflammatory infiltrate, mainly of neutrophils. HE, obj.20x.

Fig.4. Respiratory system diseases of confined sheep. Bronchopneumonia (ovine respiratory complex). Pulmonary cranial lobe with thick surfaces and a rough appearance; accessory lobe consolidation, edema and diaphragmatic lobe with alternating hemorrhagic and clear areas.
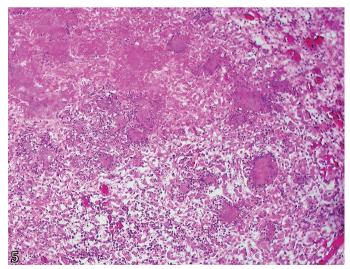
Fig.5. Respiratory system diseases of confined sheep. Histological lesion characterized by necro suppurative, hemorrhagic bronchopneumonia with necrotic syncytial cells and bacterial colonies identified as *Pasteurella* sp. HE, obj.20x.

associated with pneumonia, *E. coli* in a case of enteritis, and *Listeria monocytogenes* in the silage offered to animals that had been diagnosed with listeriosis. In all cases, the agents were isolated in a pure culture.

In accounting information obtained from the owner of the feedlot, the general maintenance costs totaled R$1,375,681.00 in 2019, R$1,889,843.00 in 2020, and R$1,607,000.00 in 2021. These costs considered food, medicines, purchase of animals, transport, diesel oil, water, shorn wool, and salaries. The economic loss from the deaths of 174 sheep in 2019 were R$50.738,40. In 2020, there were 156 deaths, resulting in a loss of R$54.849,60. In 2021, from the beginning of the year until the end of September, the loss from the deaths of 38 sheep amounted to R$17.480,00. These values corresponded to 4% of the feedlot costs in 2019, 3% in 2020, and 1% in 2021.

According to a survey carried out with SEAPDR, from October 2020 to the end of August 2021, 3,802 sheep were sent from the feedlot for slaughter in the two slaughterhouses. Of these sheep, 1,668 organ injuries that led to condemnation were identified at the slaughterhouses (Table 2). Kidney were the major causes of condemnation. The sell value of healthy organs was R$17.90/kg, and the sale value of waste (organs not suitable for consumption) was R$1.60/kg. The number of kidneys that were not sold for consumption was 1,108. Considering that one kidney weighs approximately 100g, the total sell value of these 1,108 kidneys was R$17.70. There was no pull condemnation among the animals that were slaughtered during the study year.

DISCUSSION

The main diseases that caused death in the feedlot sheep farm in São Lourenço do Sul were related to the gastrointestinal tract and respiratory tract. It was observed that most illnesses occurred throughout the year, except for listeriosis, which was observed as an outbreak in November 2020. After management

Table 2. Diseases and injuries found in the slaughter of 3,802 sheep from a feedlot, from October 2020 to August 2021

Organ/Injury or disease*	Affeted animals	% cases
Liver and lung/Hydatidosis	499	29.9
Kidney/Congestion	437	26.2
Kidney/Ischemia	430	25.8
Kidney/Nefritis	197	11.8
Kidney/Urinary cyst	36	2.2
Liver/Fasciolosis	19	1.1
Liver/Abscess	15	0.9
Heart/Pericarditis	9	0.5
Lung/Pneumonia	8	0.5
Kidney/Uronephrosis	7	0.4
Tongue, muscle/Cisticercosis	5	0.3
Liver/Periepatitis	2	0.1
Kidney/kidney stone	1	0.06
Liver/Cirrhosis	1	0.06
Lung/Emphisema	1	0.06
Liver/Steatosis	1	0.06
TOTAL	1,668	100

* Injuries and illnesses were diagnosed macroscopically by the official inspection service; Source: survey of slaughter injuries by owner, SEAPDR.

and implementation of proper hygiene measures, the listeriosis outbreak was controlled, which demonstrates that proper handling and cleaning of the environment is fundamental for maintaining the health of the herd and reducing economic loss. Other studies have also shown that such measures reduce mortality rates in confined sheep (Van der Merwe et al. 2020). A 5% annual mortality rate in cattle and sheep is mentioned as expected rate for these specie's independently of raising system (Oliveira et al. 2017). In the present study, even the highest mortality rate was below this percentage, which is probably due to the short time spent by the sheep in the feedlot.

The death related to the digestive tract accounted for 36.5% of all the deaths that occurred within a year. The causes associated to the respiratory tract were 28.9%. In a study in Spain, a percentage of deaths from digestive disorders of 29.2% was observed, similar to the percentage of deaths from respiratory diseases (28.7%) (Lacasta et al. 2008).

Hemonchosis and parasitic enteritis, characterized by a marked inflammatory infiltrate of eosinophils in the intestinal mucosa, represented most diagnoses of digestive disorders. It is likely that these sheep were already parasitized upon arrival at the feedlot, as they came from field-raised herds, in which parasites are common (Oliveira et al. 2017), and represent 18% of all the diseases observed in sheep in Rio Grande do Sul (Cecco et al. 2021). Furthermore, reinforcing this hypothesis, one of the sheep with this diagnosis had been in the feedlot for one day, and another for four, demonstrating that they had arrived already contaminated and indicating that other sheep may have earned at the feedlot parasites, as well. Treatment with Monepantel is carried out only on arrival of the animals. Parasitosis was also the main disease that caused the death of sheep in a study conducted in Paraná (Peruzi et al. 2020).

Respiratory diseases were observed from November to May. The occurrence of pneumonia in animals from different stalls did not allow to determine the source of contamination. However, some of the bacteria identified in these cases are common environmental contaminants, such as *Escherichia coli* and *Streptococcus* spp. (Oliveira & Vaz 2018). Animals that developed pneumonia were likely more susceptible or had lower immunity than the others. It should also be considered that *Pasteurella* sp. is a natural inhabitant of the upper respiratory tract of ruminants (Caswell & Williams 2007). Diseases that cause immunosuppression play an important role in the occurrence of respiratory diseases (Lacasta et al. 2008, González et al. 2016). Ovine respiratory complex was the most frequent disease during the fattening period of the animals in a study carried out in Spain, intending to identify the causes of death in confined sheep (González et al. 2016). According to the authors, the disease was associated with parasitosis and viruses, which would cause a drop in immunity in sheep, facilitating the occurrence of pneumonia. In the present study, however, no illnesses associated with pneumonia were observed. Alternatively, the alveolar necrosis observed in the lung histopathology of two sheep that died due to bronchopneumonia, suggests viral infection as a gateway for secondary infection by *Pasteurella*. Pneumonia caused by a low immune response has also been linked to the stress that sheep experience in transport, handling, and the confined environment (González et al. 2016, Lacasta et

al. 2019), as well as the anatomical conformation that makes this species more susceptible to different respiratory diseases (Lacasta et al. 2019).

The influence of environmental factors on the development of pneumonia in confined sheep was demonstrated in a study in which the authors evaluated the season of the year, the orientation of feedlot sheds, the direction of wind, and rain (Lacasta et al. 2008). These authors observed that deaths from pneumonia were significantly higher in autumn and winter, with cloudy or rainy conditions and high relative humidity. The authors mentioned that the orientation of the sheds and openings had an influence on the occurrence of this disease, due to construction that allowed the wind to create an air current inside the shed (Lacasta et al. 2008). In the present study there was no influence of climatic variations on pneumonia deaths. One reason was that the shed was completely open, with the east side sheltered by an adjacent native forest, and through a native forest approximately 30 m away at the west side, thereby not providing conditions for airflow formation. Another reason was that the deaths occurred throughout the year, which indicates that there was no influence of the weather on the occurrence of respiratory diseases. Stress factors also did not influence on the occurrence of respiratory diseases, since most cases (9/14) occurred when the sheep were more than 12 days in feedlot when no management was carried out between the animals. However, the number of sheep per stalls may have some influence due to crowding.

The observed cases of listeriosis were attributed to silage from which *Listeria monocytogenes* was isolated. This corroborates other authors who mention that this infection is frequent in sheep fed with silage or other low-quality foods, or with inadequate storage, which can be a source of environmental contamination (Ribeiro et al. 2006, Rissi et al. 2010, Driehuis 2013). Additionally, the bacteria can be present in the feces of domestic and wild animals (George 2002), and in this case, the fact that domestic birds have access to the troughs could be a source of contamination in the animals and the food. Another important factor in the occurrence of listeriosis in feedlots is the agglomeration of sheep, on account of approximately 870 animals been confined during the outbreak. It has been described that the feedlots of animals cause the accumulation of feces and urine, exacerbated by local humidity, which favors the growth of bacteria and increases the occurrence of cases (Spindola 2017).

Other diseases diagnosed in this study were observed in low percentages (from 1.9% to 3.9%) with little relevance to the causes of death and, consequently, economic losses in this system of raising sheep.

Regarding organ condemnations in sheep from feedlots, the most frequent cause among injuries/diseases was hydatidosis, at 29.9% of all the organs condemnation cases. This percentage is similar to that observed in other surveys of parasitic causes of condemnation in the sheep slaughter line, finding that hydatidosis represents 25.5% of condemned organs (Panziera et al. 2018). In other studies, which were performed in slaughterhouses in Rio Grande do Sul, the percentage of condemned organs due to parasites was found to be 15.2% (Manson et al. 2021) and 74% (Bidone 2019). However, out of 52 necropsied sheep, none had hydatid cysts, in all likelihood due to the low number of animals in which a necropsy was performed, which represented 0.9% of the total sheep that passed through the feedlot during the study period. Condemnations for renal congestion (26.2%) and renal ischemia (25.8%) were due to the appearance of the organ, which resulted in classification as a kidney unfit for consumption and, consequently, for sell. These condemnations are frequent in slaughterhouses for sheep and cattle (Silva et al. 2013). In the present study, it was observed that, due to kidney condemnations, there was a gain of R$17.70 against R$198.33 if they were sold for consumption, representing more than eight times the value sold as waste (R$180.60).

The economic loss in 2019 was approximately R$50,000.00; in 2020 it was R$55,000, and in 2021 from January until September it was R$17,000.00. The considerable drop in the economic loss caused by deaths in feedlot sheep from the beginning of the monitoring period suggests the importance of technical assistance in disease control. Further, it was observed that the keeping of sheep in a feedlot system can be profitable when the appropriate health care for this animal species is considered.

CONCLUSIONS

The main causes of death in the sheep feedlot in southern Rio Grande do Sul were parasitic enteritis, pneumonia, and listeriosis, which are the same diseases that occur in animals raised in the field, although with epidemiological differences.

The main causes of organ condemnation in slaughter are hydatidosis and kidney damage.

Technical assistance on this farm was essential for reducing losses from sheep deaths.

It was also concluded that the short length of stay of sheep in the feedlot is a limiting factor for the occurrence of chronic diseases.

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