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Facultad de Medicina Veterinaria y Zootecnia, Asociación Científica Mundial de Cunicultura – Rama Americana
Secretaría de Desarrollo Agropecuario del Gobierno del Estado de México, Secretaría de Agricultura, Ganadería, Desarrollo Rural,
Pesca y Alimentación, Consejo Mexiquense de Ciencia y Tecnología

**USE OF RECORDS TO DETERMINE THE CAUSE OF MORTALITY IN
RABBITS AT DIFFERENT TIMES OF THE YEAR IN UNIT EXPERIMENTAL
COLLEGE AUTONOMOUS CHAPINGO**

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ABSTRACT

The municipality of Texcoco has an average altitude of 2250 meters above sea level, its climate is considered temperate semi-dry, with an average annual temperature of 15.9 ° C and an average annual rainfall of 686 mm. Any system of meat production has as reason for the transformation of plants to animal protein of high nutritional value for human consumption. The production of rabbit meat is valuable, especially when it comes to providing high protein at low cost, since it is found that the rabbit can transform 20 % of dietary protein absorbed in the flesh. In the Autonomous University of Chapingo in Mexico, the records were studied and the percentage share of various causes of death (9 categories) of rabbits in different climatic seasons (spring, summer, autumn and winter) and three production stages (infant described, fattening and breeding) for a consecutive year (May 210 -May 2011). During this period the total rabbit population were 31,046. The highest mortality occurred during the summer. Pneumonia was the leading cause of death cause with 53.80 %. Pneumonia deaths occurred in a higher percentage during the autumn time, where most mortality was detected in suckling and fattening stages with 37.19 % and 77.33 % respectively. Digestive diseases were shown to be the leading cause of



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death in each of the production stages during the summer with 22.40 %. We conclude that environmental facilities-effect relationship is an important risk factor for the occurrence of diseases that results in death of the rabbits in all production stages. Therefore animal welfare and economic losses by reducing mortality are factors when root causes are considered as correct and the negative effects of risk factors through changes in the management of the ship are identified. Knowledge of the causes of mortality can be achieved through the inclusion of this variable in the records maintained in production. The more information concerning this variable is achieved to obtain the records, better improvement strategies in handling animals.

Keywords: records, meat production, mortality, animal welfare.



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Introduction

In 2001, Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), officially recognized the rabbits as livestock and the National Information System startup statistical recording of this production. In 2007, the national inventory of rabbits was 500.349 heads, the State of Mexico started off first as producer with 151,054 heads, which accounted for 30.2% of the national population ⁽²⁾.

For its production does not require large areas, they should not be of excellent quality, and depending on the type of system, whether backyard, semi-industrial or industrial work can it be fully or partially absorbed by the household. ⁽⁵⁾ The rabbit production is a relevant livestock industry in Mexico, despite its limited distribution and little technological development. There are management issues that prevent relevant information from the production units have. It is important that a record contain information about disease incidence, housing conditions, quality of diet, genetics, proper reproductive management, etc is kept. For other domestic species this activity is some complexity in their zootechnical use ⁽⁴⁾. The objective of the study is to determine the causes of mortality in rabbits at different reproductive stages and in different climatic periods by analyzing records.

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Methodology

The study was conducted in the experimental farm of the Autonomous University of Chapingo during the period of May 2010 to May 2011 the study breed were: New Zealand White, California, Chinchilla and Black Azteca. By using records were evaluated, lactation fatting, doe, birth and mortality as well as recurrent respiratory and digestive diseases were analysed. The results are presented in the program processed in excel percentages.



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Results

Rabbit mortality related by the season

The total rabbit population during this study was 31, 046 animals. The main cause of death of a total of 5882 occurred in the total study period was pneumonia 53.8% and in summer where had the highest frequency of 29.6%.

The digestive diseases accounted for 21.10% with a total of 1244 deaths, noting in summer the highest number of cases (515) accounting for 41.4%. In winter time had the lowest percentage of deaths (22.2%), corresponding to 1301 cases; in contrast to the summer, where 1836 casualties out of a total of 5882 total deaths were submitted, which represents 31.2%.

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Rabbit mortality by productive stage and season

It can be seen that the highest frequency of deaths occurred during the lactation and fattening stages (Table 1).

PRODUCTIVE STAGE	SEASON			
	SPRING	SUMMER	AUTUM	WINTER
LACTATION	(707/5438) 13.00%	(632/4157) 15.20%	(527/3446) 15.30%	(409/3272) 12.50%
DOES	(18/360) 5.00%	(63/360) 17.50%	(17/360) 4.70%	(21/360) 5.80%
FATTING	(651/4847) 13.40%	(1141/3653) 31.20%	(825/2951) 28.00%	(871/2922) 29.80%
TOTAL	(1376/10645) 12.90%	(1836/8179) 22.40%	(1369/6757) 20.30%	(1301/6554) 19.90%

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Table 1. Mortality percentage in rabbits at different stages of production during the four seasons.

During the lactating stage the mortality (Table 2) shows that the category of undetermined causes was the major cause of death with 31.78%. The pneumonia was the second leading cause of infant mortality in rabbits in relation to the number of cases filed, representing a loss of 26.73% (608 cases); followed by the presentation of 197 cases (8.66%) caused by digestive disorders.

	SEASON			
	SPRING	SUMMER	AUTUM	WINTER
PNEUMONIA	(143/707) 20.23%	(150/632) 23.73%	(196/527) 37.19%	(119/409) 29.10%
DIGESTIVE	(23/707) 3.25%	(100/632) 15.82%	(46/527) 8.73%	(28/409) 6.85%
UNDETERMINED CAUSES	(233/707) 32.96%	(194/632) 30.70%	(179/527) 33.97%	(117/409) 28.61%

Table 2. . Mortality percentage diseases in lactating rabbits during the four seasons

Of the total annual deaths (3488) presented in fattening rabbits stage, the 71.10% of the mortality corresponds to those caused by pneumonia (2488), compared with 1008 cases filed by digestive, corresponding to a 28.90% pathologies. Where most recurrent pneumonia occurred in the spring and winter seasons with a 74.04% and 77.33% respectively (Table 3). With respect to mortality caused by digestive pathologies, it can be seen that the majority of cases (383) equivalent to 33.57%, 30.88% followed by the cases corresponding to 269 occurs in winter time. Compared with autumn (187 cases) was the period with the lowest number of cases presented 22.67%. Mortality with the highest number of cases was en does (78) was caused by pneumonia (65.55%), where in the winter time with 90.48% of the cases, compared with 47.62% in summer time (Table 4) cases.

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	SEASON			
	SPRING	SUMMER	AUTUM	WINTER
PNEUMONIA	(482/651) 74.04%	(758/1141) 64.43%	(638/825) 77.33%	(602/871) 69.12%
DIGESTIVE	(169/651) 25.96%	(383/1141) 33.57%	(187/825) 22.67%	(269/871) 30.88%

Table 3. Mortality percentage in the fattening stage during the four seasons

	SEASON			
	SPRING	SUMMER	AUTUM	WINTER
PNEUMONIA	(15/18) 83.33%	(30/63) 47.62%	(14/17) 82.35%	(19/21) 90.48%
DIGESTIVE	(2/18) 11.11%	(32/63) 50.79%	(3/17) 17.65%	(2/21) 9.52%
PYOMETRA	(0/18) 0.0%	(1/63) 1.59%	(0/17) 0.0%	(0/21) 0.0%
PROLAPSE	(1/18) 5.56%	(0/63) 0.0%	(0/17) 0.0%	(0/21) 0.0%

Table N° 4. Mortality percentage for does during the four seasons

The category of digestive diseases occupied the second cause of mortality in breeding females with 32.77% per annum, of which 50.79% is the 32 cases presented in the summer and winter time with 9.52%.

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CONCLUSIÓN

The main cause of mortality in this study was pneumonia (53.80%); where the stages of fattening and does exhibited the greatest number of cases in autumn-winter where most recorded occurrence of these. Lactating stage was the second cause of mortality, followed by deaths due to undetermined causes, which had the highest number of cases. The second cause of mortality was caused by digestive diseases (21.10%), being the stage of young does occurred in the summer period (50.79%).

This clearly shows that climatic factors, mainly the environment temperature and relative humidity are both direct and indirect influence on rabbit health. However, not only the environmental factors have bearing on the health of animals, as by observation and analysis of farm management, other elements such as installation, housing and sanity, show a strong influence on the health status of animals.

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