RESULTS OF THE TECHNICAL MANAGEMENT OF FOUR RABBIT FARMS IN BENIN

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ABSTRACT

A study was carried out in 2000 to evaluate the level of the technical management of the rabbit farms of South-Benin. Four farms were included into the investigation. Data collected by the farmers made it possible to note the mean level of the zootechnical performances. The average litter size was 6. An average of 5.6 kits were born alive of which 4.8 were weaned. The interval between littering was evaluated to 73 days, thus, an average of 6 litters per year can be counted. Considerable variations were observed among the farms in some zootechnical parameters such as the number of born alive per litter. Results of this study show that there is an exploitable genetic characteristic on the level of the rabbit breeding in Benin.

Key words: rabbit, Benin, productivity, management.

INTRODUCTION

After the outbreak of viral hemorrhagic disease (Vhd) in 1995 (KPODEKON and ALOGNINOUWA, 1998) which decimated nearly all the rabbit stocks of South-Benin, rabbit production took a new departure. In 1998, 188 rabbit farm was counted in this area of which approximately 25% were commercial or semi-commercial (KPODEKON *et al.*, 2000). The combined efforts of framing through the Association of the Rabbit breeders (ABeC) helped by the Centre Cunicole de Recherche et d'Information (CeCuRI) allowed these last years to maintain and reinforce this positive tendency. The objective of this work was to review some zootechnical paramete rs controlling the technical management and the genetic potential of four rabbit farms in Benin.

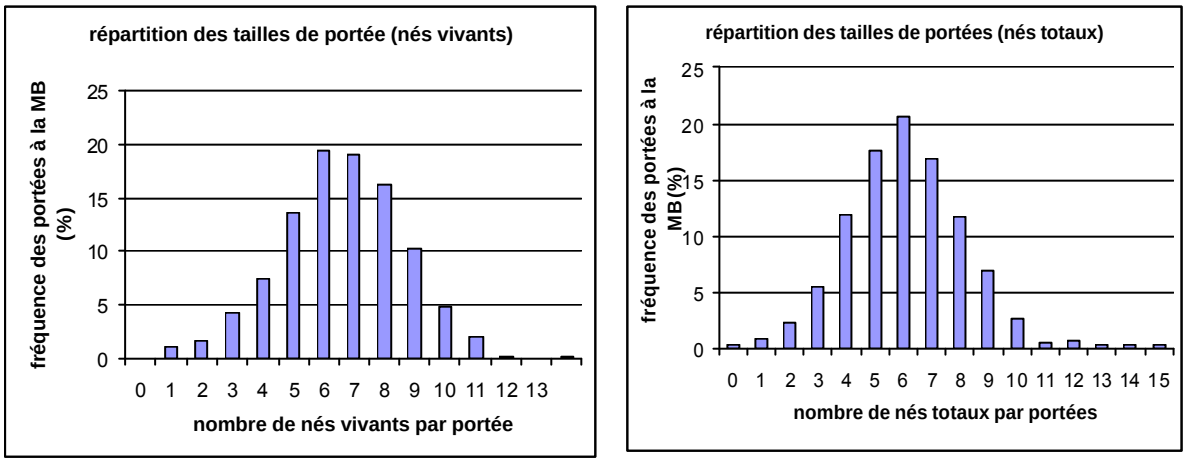
MATERIAL AND METHODS

Only farms which have relatively good equipment such as metal cages and automatic nipple drinkers were included to the experiment. The number of does in each farm was between 50 and 100. For recording the zootechnical data, each doe of each farm was given a breeding card. Recorded parameters were: total the number of new-born rabbits, the number of kits born alive, the number of weaned rabbits, the dates of mating, littering and weaning.
The data collected from the 4 farms were processed on Excel datasheet.

RESULTS

Common results of the 4 farms

Prolificity. In the four farms, 547 litters (3357 kits) were recorded. The mean litter size was 6.1 rabbits, with 5.6 born alive (8.5% still-born). The distribution of the litter size was normal (Figure 1a 1b).

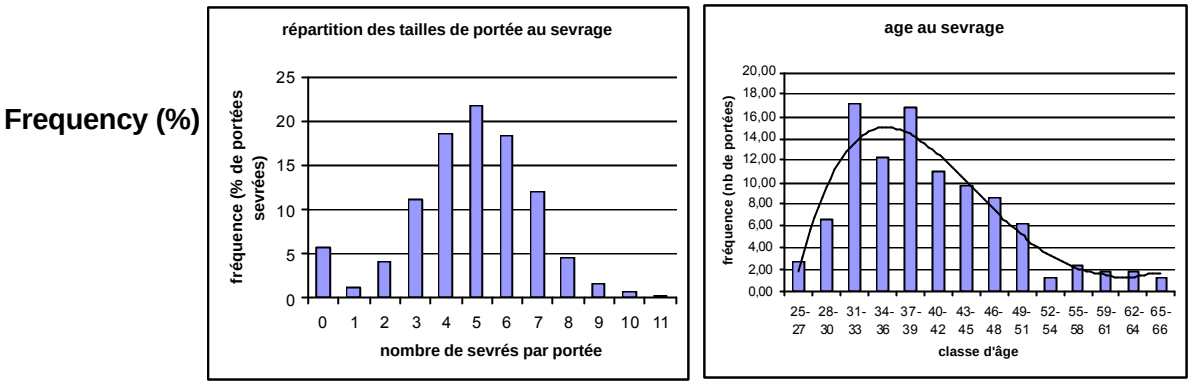


a/ Born alive per litter **b/ Born per litter (total)**

Figure 1. Distributions of the litter sizes

Weaning. Altogether 395 litters were weaned in the farms. The average number of weaned kits per litter was 4.8. At birth the average number of nursed rabbits (alive + fostered – withdrawn) was 5.9. The average mortality from birth to weaning was 19%. The distribution of litter size at weaning was found between wide range showing that significant progress is possible if a breeding program were set up (Figure 2a).

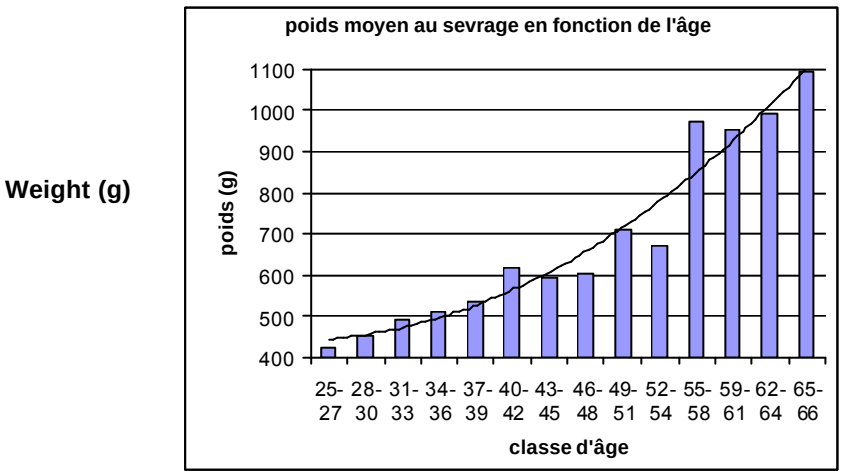
The age at weaning (Figure 2b) was on average 40.4 days, but it also showed wide differences. The average age varied from 35 to 45 days depending on the farms.



a/ Number of weanlings/litter **b/ Weaning age**

Figure 2. Distribution of the litter size and age at weaning

The average weight of rabbits at weaning (35 days of age) was 500 g (Figure 3)



Age (days)

Figure 3. Weight and age at weaning

Interval between litterings. On 547 litterings, the average interval was 73 days, which corresponds to 6 litters per year.

Comparison between farms

The four farms were not comparable since the total number of data available per farm was very variable. In farm N°4, only one litter per does was recorded. However, it is possible to compare farm 1 with farm 3 without a great risk of error.

Prolificity. There were considerable differences between farms but only farms 1 and 3 had a sufficient number of littering to be compared. The best result was the number of

total born rabbit in farm 1. This "genetic" potential is spoiled because the percentage of still-born kits. Ultimately, farms 1 and 3 remain comparable in term of number of nursed rabbits (Table 1).

Table 1. Prolificity at littering.

Farms	Littering	Born alive	Still-born %	Born (total)	Nursed*
1 Agro - Vivi	190	5.9	12.1	6.7	5.7
2 Sylvie	40	4.5	12.2	5.1	4.5
3 Tossou	282	5.7	5.3	6.0	5.7
4 Phalanstery	35	4.9	8.5	5.4	5.1
Total	547	5.6	8.5	6.1	5.5

* Some new-born rabbits were fostered

Weaning

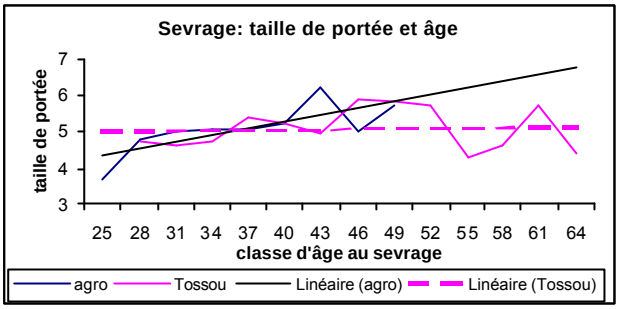
Weaning data are less reliable because some farmers forgot sometime to record this data. To allow a better comparison between farms, we took into account only weaning with at least 1 weanling (Table 2). Thus, the zootechnical data are exact, but not able to be extrapolated in economic terms.

It is impossible to compare farms 2 and 4 with the others. In fact, not only the number of data collected was too weak, but in these farms there were at birth one nursed rabbits less. This fact partly explains the weak mortality in these farms 2 and 4. Mortality in farm 1 was slightly high, perhaps in connection with a more intensive production. Between farms 1 and 3 the essential difference was the age at weaning which was 9 days earlier in farm 1. Sixty percent of the litters were weaned before 33 days in farm 1 compared with only 8% in farm 3. In addition, in farm 1, age at weaning depended on the number of sucklings (Figure 4)

Table 2. Study at weaning (with at least 1 weanling).

Farms	Number of weaning	Nursed	Weaned	Age	Mortality before weaning
1 Agro - Vivi	123	6.0	5.0	34.7	20.3
2 Sylvie	19	4.9	4.6	45.8	6.8
3 Tossou	212	6.0	5.2	43.3	15.9
4 Phalanstery	23	5.2	4.7	40.0	10.1
Total assessment	377	5.9	5.1	40.4	16.6

Litter size at weaning



Age at weaning

Figure 4 Litter size and age at weaning in farms 1 and 3

Interval between litterings. If the interval between litterings is considered as an indicator of good management, it is obvious that the management of farm 1 was the most successful (Table 3). With the same interval, the management of farm 3 would have produced 34 additional litter (12% more). There is probably a problem with the management of farm 2.

Table 3. Intervals between litterings.

Farms	Number of weaning	Interval between litterings (days)
1 Agro - Vivi	188	66
2 Sylvie	40	92
3 Tossou	279	74
4 Phalanstery	35	Only one littering recorded for each does
Total	542	73

DISCUSSION

According to the data of different farms, the litter size could go up to 15 kits born alive, however, the average litter size was 6,1. This reveals a genetic characteristic of this local strain which could be improved . In addition, the frequency of the litters with more than 6 new-borns would deserve a better use of the equalization of litters at birth.

The average number of litters (6 per year) is higher than that obtained in most of the Western-African countries such as Ghana (4 litters) and Nigeria (2 to 3 litters) (HAKE and LEBAS, 1995). On the other hand, the average number of weaned rabbits (4.8) is slightly lower than the performance recorded in Nigeria (5 to 6) and in Ghana (6) (HAKE and LEBAS, 1995). The average weaning weight is 500 g at 35 days; what represents an exceptional performance under tropical climate. According to our study more than 50% of the litters were weaned before 40 days and it is a considerable improvement compared to former observations (KPODEKON and COUDERT, 1993).

The average mortality before weaning was 19%. This level is comparable with the results recorded in France (KOEHL, 1995; PONSOT, 1995), in Spain (RAFEL, 1996) and in Cuba (RIVERON, 2000).

The average interval between litterings (ab. 73 days) can be shortened. In one of the farms the average interval was 66 days without harming its total performances. In Europe, the average interval is 50 days (LUZI *et al.*, 1995; PONSOT, 2000; RAFEL *et al.*, 1995; RAMON and RAFEL, 2000), but the climatic conditions and the diet of does play an important role. The interval is located between 45 and 60 days in Cuba (RIVERON, 2000) and it is 52 days in Algeria in the intensive breedings (GACEM and LEBAS, 2000)

CONCLUSIONS

The scarcity of reliable statistical data on the performances of rabbit farming in the countries of sub saharian Africa is revealing work which it remains to make in this domain. The obtained results are interesting , because they show the potential of the rabbit production and its limits in tropical zone. They reflect also the level of professionalism of the rabbit farming in Benin in year 2000 and the very positive impact of the two structures of formation (CeCuRI) and technical framing (ABEC). Therefore this work could be a tool for of a training program for the farmers under the tropical climate.

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