Training in rabbit husbandry in Mozambique

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Key words : Rabbit husbandry - Mozambique.

Summary

The possibility of the meat rabbit production in developing countries with reference to Mozambique situation is treated.

The rabbit husbandry in Mozambique is feasible but the cultural passage from the passive rearing habits to a modern intensive technological rearing it will be neither easy nor next to come. Three kinds of husbandry could be possible in Mozambique: a) intensive b) complementary and c) family husbandry; a) can be made only in well organized farm and the limits for intensive husbandry are given by the agricultural condition of the farm itself, b) and c) may be undertaken where rabbit is already known.

Local medium-light rabbits, adapted to the climate, are to be preferred and, in intensive husbandry, minimum production for farms balance will be 8 (eight) sold rabbits/doe/year.

Rabbit husbandry in Mozambique could be successful, even if this cannot solve the problem of animal proteins supply in a short time.

Résumé

La possibilité de production de viande de lapin dans les pays en voie de développement est étudiée dans les conditions du Mozambique.

L'élevage du lapin au Mozambique est possible mais l'adaptation culturelle des habitudes d'élevage extensif aux techniques intensives modernes n'est ni aisée ni d'application immédiate. Trois sortes d'élevage sont possibles au Mozambique : a) intensif, b) complémentaire et c) élevage familial; a) ne peut être pratiqué qu'en ferme bien organisée et les limites pour l'élevage intensif sont fixées par les caractéristiques de la ferme elle-même, b) et c) ne peuvent être pratiqués que là où le lapin est bien connu.

Des lapins indigènes de poids moyen ou léger, adaptés au climat, seront préférés. En élevage intensif, la production minimale pour atteindre l'équilibre financier doit être de 8 lapins par lapine et par an.

L'élevage du lapin au Mozambique pourrait réussir même s'il ne peut résoudre le problème d'apport de protéines animales à court terme.

Introduction

Within a cooperation program between Italy and Mozambique a course in rabbit husbandry for Mozambique veterinarians and technicians was recently taken. The course was part of a zootechnical program on "small species", proposed by MO.LI.SV. (Piazza Albania 10 - Roma - Italy), supported by the Italian Foreign Ministry (Cooperation and Development Dept.). It was done by Italian teachers on the following subjects :

1. Rabbit nutrition and feeding : generality and notices on diseases of feed origin;
2. Rabbit breeding : characteristics of the animals and choice of parents, environmental requirements, housing, equipment, breeding and management techniques, working organization;
3. Rabbit pathology and standard of hygienic control.

The course took place in a farm with a rabbit unit. The lessons were made up in a class, a practical training in the farm with working groups was held.

On the basis of a previous experience (course on duck husbandry) the same team of Italian teachers was chosen. The students were chosen among veterinarians having a good technical and cultural background and farm technicians who had a good working experience in rabbit sector. All this to assure an active participation by the students in order to permit a better exploitation of the lessons both in field and in theory.

The experience gave us the possibility to detect the usefulness of intensive course (8 hrs lessons/day for 4 weeks) in comparison with longer and less intensive ones.

The results obtained were of mutual satisfaction : the students could check and practise the lessons, the teachers could see, up the beginning, an active direct and engaged participation. At the end of the course it was possible to have a discussion between teachers and students on the rabbit breeding in Mozambique and tropical countries in general.

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Generality

Rabbit is an animal indigenous to the mediterranean area, characterized by temperates climates. In the natural state, rabbit lives in underground burrows where temperature is quite uniform all over the year, light is non violent, relative humidity is constant and there is a low speed natural ventilation. Physiologically high temperatures are a great limit for rabbit; from about 28-30°C life conditions themselves are critical. All this let us think that the rabbit is not fit for rearings in tropical and sub-tropical climates such as in Mozambique. Nevertheless besides the abovementioned physiological limits, the rabbit has other peculiarities that make this animal fit for rearings in the present agricultural zootechnic of the developing tropical and sub-tropical countries. Such capabilities are: a) the capability of adaptation to tropical climates thanks to the rearing and selection of light strains, with short and thin hair, and large ears for a better thermoregulation; b) a high prolificity together with a quick-coming sexual maturity, a short gestation period and a quick generation exchange; c) a high alimentary efficiency, since the rabbit has an elevate capability of turning food energy into meat; to get 1 kg meat you need the following food requirements: chicken = 345 Mj, rabbit = 430 Mj, sheep = 1780 Mj, cattle = 1830 Mj. The rabbit, in comparison with the chicken, can transform also the vegetable proteins of crude fibre and cellulose high content food thank to caecotrophy. Such capability makes the rabbit very similar or even better than ruminants in utilizing "poor" vegetable aliments to turn them into meat.

Rabbit husbandry opportunities in Mozambique

The rabbit husbandry in tropical countries and particularly in Mozambique is feasible and should be supported for the following reasons: a) the rabbit high prolificity and quick generation exchange; b) a high alimentary efficiency not in competition with human feeding, on the contrary of the chicken and swine feeding that includes large quantities of "noble" aliments, used also for human feeding as well; c) rabbit husbandries require neither large areas nor pastures, as in the case of bovine husbandry: this means that agricultural activity would not suffer from land deprivation; d) for rabbit husbandry only local resources are required, both for housing and feeding; e) the local rabbits adapted to climate and feeding present pathological problems no different from the most common in European rearings; f) the rabbit carcass weight is ideal for a single family alimentary need; in fact, the carcass (about 1- 1.5 kg) is bound to be eaten in a short time, while this is impossible for bovine and swine carcasses that should involve more families, cooling/freezing and distribution chains; g) possibility of employing the family elements for the rearing.

All this could make easier the cultural passage from the "passive" rearing habits to a modern intensive technological rearing, even if it is obviously neither easy nor next to come.

Proposals

Fundamental premises for rabbit husbandry, both in Mozambique and in every other country, are a deep knowledge of the country and of its possibilities in order to focus where and how to rear. For Mozambique husbandries we should take into consideration the following points:

area localizing:
in some places the climate is more favorable, such on the hills, and there rabbit husbandry is already a tradition. In these areas rabbit husbandry could be more successful, not only for the proper climate but also for the "human factor" that in such cases would not be an obstacle.

kinds of husbandry:
three kinds of husbandry could be possible in Mozambique:

1) intensive husbandry: this kind is already undertaken above all by governement enterprises aiming to intensive rabbit production. Such husbandry can be made only in well organized farms. The farms for intensive rabbit husbandry should be connected to the nearby consumption areas for a constant supply. Such rearing requires a good technical-managing assistance for a continuous control of the technical performances and production data. The availability of balanced rations, mineral-vitamin integrator, chemioprophilactic and therapeutic drugs, that have to be administered under veterinary control, should also be foreseen. In the intensive farms modular and standard sub-units should be built, each of them for 100 does, 15 males and a factening section. The limits for intensive husbandry are given by the agricultural conditions of the farm itself.
2) complementary husbandry: it may be undertaken by private or public enterprises or cooperatives that can grant the minimum feeding supply for the rearing. For such enterprises rabbit husbandry would not be the main income. Anyway, besides a chief manager, there ought to be also a manager in charge of the rabbit husbandry, as follows: husbandry technical-managing organization, control of the specialized or not staff employed in the husbandry, rabbit husbandry production costs data collection, training and updating of the staff, relations with the husbandry chief manager to coordinate the agricultural and husbandry manager. Periodical visits and controls will grant the technical assistance; such husbandries could be supplied with balanced rations and chemioprophylactic measures in proportion to the production of every doe/year.

3) family husbandry: it may be undertaken where rabbit is already known. Family husbandry exploits the bush aliments, by-products and family refuses. A member of the family can take care of the husbandry that will not need any technical assistance or feeding supply from specialized firms. Only the supply of does and building material by Local Assistance Centres may be taken into consideration. This kind of husbandry aims to supply families a protein alimentation and to spread rabbit husbandry.

It is important to underline once again that rabbit husbandry, except for the family one, must be integrated in an agricultural farm with good water resources, so to assure the indispensible, fresh or not, feeding during the whole year. The administration of forage or grass is indispensable: to grant a proper digestive physiology thank to the crude fibers necessary for caecotrophy, to allow a good use of the natural local resources that are not competitive with human alimentation, to grant alimentary self-sufficiency respect to industrial balanced rations supply (problems of production and delivery).

How to rear

The rabbit requires temperature and environment particular conditions. In Mozambique rearing should take into consideration the following aspects: a) orientation so as to avoid principal winds and exposure to strong sunlights; b) arborization for shadowing, through windbreak barriers: mulberry-trees seem to be very apt to arborization; c) static ventilation: in Mozambique now it is not possible to foresee dynamic-controlled ventilation husbandries, but only to use a static-natural one. Husbandry sanitary condition and profitability are strictly dependent on the dimension and characteristics of the husbandry itself.

Housing characteristics

Breadth: fundamental for air ventilation · min. 3.5 m, max. 7.5 m.
Length · can vary depending on the number of animals.
Height to eaves. from 2.2 to 2.7 m.
Roof · about 45° angle, monopitch-twopitches, depending on the breadth, with 1 m about projecting eave for shadowing. It has better be made of insulating material, easily to be found (for ex: palm leaves, marsh reeds, and so on), or of eternit, more hygienic, covered with insulating material.
Walls: made of reeds or other material. Windows running on a whole wall, from 50-60 cm above the cages. Wall ground air opening at 20-30 cm.
Floor: made of beaten earth or other.

Internal equipment

The best cages are electricwelded and galvanized to avoid rats and mice access (ex. · 13 x 25 mm mesh). Feeders and watercontainers should rather be external for a better use of the cages space and hygienical reasons, and to avoid feed wasting.

The measures for a building for 100 does could be 7 x 15 m, since there should be 1 female for each sqm, with maternity-cages of about 0.4 sqm. Hutches should be 50 x 70 cm, the height can vary depending on the nest box dimensions. The nest box is very important to make rearing successful; it should be hygienic, well insulated, divisible and isolated from the mothercage, made as a box of 40 x 30 x 30 cm, on the ground, lower than the cage floor.

Hutches could be set in 4 rows, single decked, two central and two lateral rows with two corridors. The height from the ground can vary, but the cages must always be handy.

General choices — Management

Local medium-light rabbits, adapted to the climate, are to be preferred. Their fundamental characteristic is rusticity. Both intensive and complementary husbandry must have technical assistance to grant a correct, even if simplified, production data collection and their control and processing. Work organization, production managing and rearing cards should be used as follow: a) production planning: minimum-production for farms balance =8 sold rabbits/-doe/year; b) work organization: weekly cycled production, rearing by fixed daily steps; c) data processing: data collecting and processing allow production control, planning and husbandry improvements. There are two important cards: breeder card, with few essential data on the single doe; rearing card, with the main production parameters (for ex.: N° mating, % pregnancy, N° borns, weaned and sold rabbit etc.)

As for the rearing techniques, we could suggest only to improve the control of nest boxes, both with protected and divisible nest boxes and with equalization of the litter (5-6 rabbits for litter), so that the mother may feed the left rabbits.

Pathology

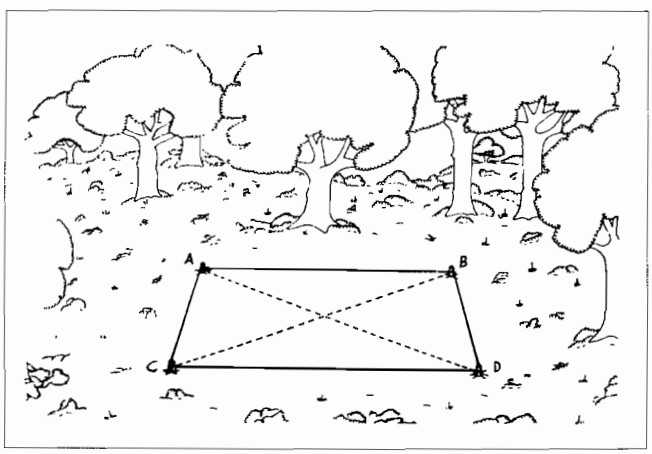
We all know that reared rabbits, differently from the rustic ones, have a very varied pathology that is almost always conditioned by environmental, alimentary and managerial elements. The greater is the productive exploitment, the heavier is the pathology. Since rabbit husbandry in Mozambique is at an initial step, there are not great sanitary problems, even if Mozambique rabbit reared pathology is not so different from the European one. In fact in Mozambique also the incidence of spontaneous diseases is not so high. Therefore we must give a great importance to the control of the raging factors for the conditioned diseases prophylaxis.

The pathologic reports have shown that the greatest

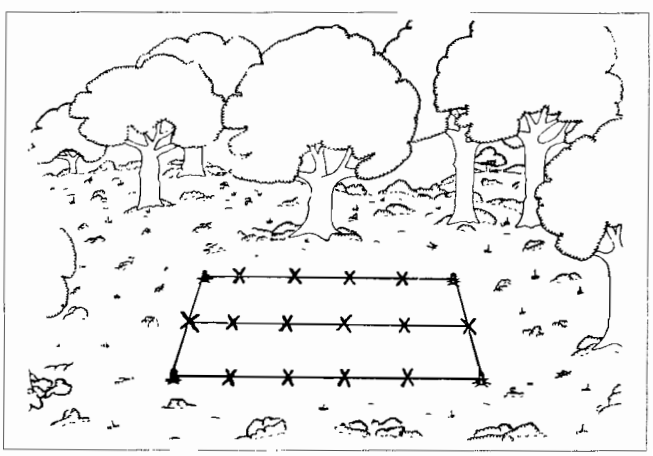
losses are due, in order of incidence, to enteric, respiratory, cutaneous and renal diseases. We suggest: a) to control post-weaning enteritis (principally due to non-parasitic diseases): balanced rations, strict cleaning and disinfection and use of "monocage" (that means use the same kind of cage for the life different stages: so, the mother can be moved, after 35 days post-partum, and transferred to a similar one, avoiding the pups stress problems; b) to control respiratory pathology: use breeders adapted to the tropical climate, select families resistant to respiratory infections and stick to the given indications for building; c) to control cutaneous pathology (for sarcoptic mange and dermatomycosis especially), never use breeders from infected husbandries (they should be cured using the strictest prophylactic and therapeutic measures). We do point out the presence also in Mozambique of the encephalitozoonosis, a protozoal disease not very known but very spread among reared rabbits. The prophylactic programs must therefore include the control of this disease. We should also remember that at first diseases hit the most feeble elements (generally coming from numerous litters) and then spread about. Therefore the feeble elements should be eliminated, even if against the local habits.

Conclusions

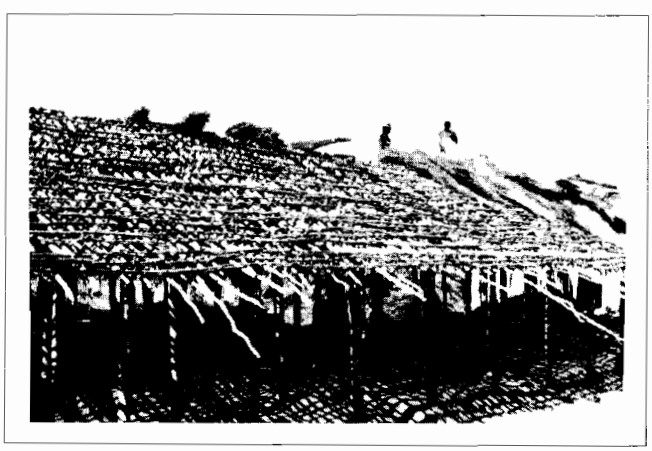
We can say that rabbit husbandry in Mozambique could be successful, even if this cannot solve the problem of animal proteins supply in a short time. Rabbit husbandry is more flexible than others and can be adapted to local conditions and problems; anyway we must not forget the still slow Mozambique life rhythmus and the fundamental succession: water — agricultural production — grass — hay — adapted animals — rearing in small and controllable groups.



Construction of rabbit housing To score the field with a cord. A-D and B-C shall be at a same distance.



To divide into 2 parts the shorter sides, to draw the median line and to excavate an hole at every second metres for the pillars.



Different phases of the building of a house where rabbit hutches are kept.

Local breed rabbit.

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The course was part of a zootechnical program on "Small Species" proposed by MO.LI.SV.* (Italian Movement of Liberation and Development) and supported by the Italian Foreign Ministry (Cooperation and Development Dept.) Rome, Italy.

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In Memoriam

W. Bittremieux

Le Comité de rédaction de Tropicultura a le profond regret de vous faire part du décès inopiné de Monsieur W. Bittremieux, Administrateur Général a.i. de l'A.G.C.D. et éditeur responsable de la revue.

Het redactiecomité van Tropicultura meldt U met diepe droefheid het plotse overlijden van de Heer W. Bittremieux Administrateur-generaal a.i. van het A.B.O.S. en verantwoordelijke uitgever van ons tijdschrift.

The Editorial Committee of Tropicultura announces with deep regret the sudden death of Mister W. Bittremieux appointed General Administrator of the B.A.D.C. and responsible Editor of this periodical.

El Comité de redacción de Tropicultura tiene el profundo dolor de harcerles parte del fallecimiento inopinado del Señor W. Bittremieux, Administrador General a.i. de la A.G.C.D. y editor responsable de la revista.