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HOUSING OF RABBITS IN AFRICA

by

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SUMMARY

Rabbits are raised in a variety of conditions, including batteries of cages in a commercial rabbitry, backyard hutches made of boards and wire screen, cages made of bamboo, dirt floors in mud huts, and even in their natural habitat in the wild. In this paper the author reviews some of the different housing in which rabbits are raised and some of the basic criteria to keep in mind when designing housing for rabbits. Two types of housing appropriate to African village conditions are dealt with more specifically; the wood and bamboo hutch commonly used in forest areas; and alternatives for savannah areas where even these materials are difficult to obtain.

A. LEVELS OF HOUSING

Rabbits live in a wide variety of housing. This can range from rows of battery cages several layers high in a commercial rabbitry to a warren in the wild in the rabbit's natural habitat.

1. Commercial Rabbitry - These usually contain cages made entirely of wire, or wood or metal frames with wire screening, in long rows under a large shelter. They can contain many thousands of rabbits raised on a commercial basis for sale to a wholesale packing house

or other commercial outlet. Such commercial rabbitries do exist in Africa but it is not the scope of this paper to say any more about them.

Even in developed countries there is some evidence that it is more productive to raise rabbits in small family units than in large commercial farms (Laursen-Jones, 1976; Owen 1976). Surely the same holds true for Africa, especially for rabbits raised for domestic consumption.

2. Urban Backyard - Many of the people who have become interested in raising rabbits are teachers or persons with other professions, many of whom live in or near urban areas but who want to raise rabbits in order to have meat for their tables. Though not calculated on a purely economical basis in terms of profit or loss, most of these persons are willing to invest some capital into their rabbit hutches. They are, therefore, willing to purchase boards, wire screening, zinc roofing material, and possibly even pay someone to construct the hutch. There are a variety of designs possible for these hutches (Zwann, undated). Again, the focus of this paper will not be on this level of housing, though much of what will be said below will apply to the urban rabbit raiser.

3. The Village Hutch - It has been found that raising rabbits at the village level is both feasible and practical. The special advantage is that the meat is raised and consumed by those who most need it. Hutches made of bamboo or sticks are becoming quite common, especially around development projects which are promoting rabbit husbandry in village areas. This topic will be dealt with in more detail below.

4. Confined Dirt - Due to a scarcity of wood, bamboo, screen or other preferable materials, especially in the savannah areas, there are a number of examples of rabbits being raised on dirt floors. These usually have walls made of cement, adobe brick, or other hardened earth. In many cases the floor is also compacted earth to keep the rabbits from burrowing. Otherwise, the rabbits are allowed to burrow as long as they do not tunnel out from under the walls. There are problems with raising

rabbits in this way and it is not recommended where more traditional hutches can be built. However, raising rabbits in this fashion can enable people to raise their own meat who could not otherwise do so. This level of raising rabbits, with a case study, will be given below.

5. Warren in the Wild - Of course the natural habitat for the rabbit is not a confined domestic situation at all. Rabbits can thrive in the wild. The main problem with this is that they are not easily available for man to eat when he wants. Hunting is one solution. In Adams' story (1973) of rabbits, mention is made of the practice of encouraging wild rabbits to continue living in a burrow near a farm by leaving garden scraps where they can get them. Individual rabbits can be occasionally caught by setting traps for them.

With the increasing human population, in West Africa especially, hunting of any wild game is getting more and more difficult as the populations of these species diminish. The same holds true for rabbits, so it would seem that for the person interested in assuring himself of a supply of rabbit meat, obtaining rabbits in the wild is not a very reliable method.

The observation can be made that the capital and level of management involved decreases in levels of housing No. 1 - No. 5.

B. DESIRED CHARACTERISTICS OF HOUSING FOR RABBITS

1. Confinement of Rabbits - Rabbits need to be confined in order for them to be managed, including the control of mating. As opposed to the possibility of hunting and trapping rabbits in the wild, the purpose of housing is to have them easily available to the owner when he wants them.

When building a cage, care should be taken that young ones cannot fall out through holes in the walls or floor.

2. Protection for Predators - Rabbits can be attacked by a variety of predators and one of the purposes of housing them is to protect them from these. Predators include cats, dogs, mice, rats, driver ants, snakes, hawks and thieves.

It may be necessary to put the feet of the cage supports in tins of water or kerosene if ants are a problem. Likewise, if rats are bothersome, a funnel of tin around the support might help. Suspending cages by wire from overhead could be a solution to both of these problems (Zwann, undated).

In some areas, unfortunately, among the most persistent predators are one's neighbours. Protection against them can be helped by a fence of bamboo or other material, and by keeping the hutch near one's own home. (This lends itself to closer surveillance and better management of the rabbits).

3. Protection from the Elements - The rabbit hutch should be well aerated but the rabbits should be protected from too much direct wind. The hutch should be placed in a shady area. Rabbits should not be subjected to direct exposure to the sun in tropical areas as the heat can adversely affect them. Likewise, rabbits should be protected from the rain, for if they get wet they can get diseased, especially young ones.

The location of the hutch should, if possible, be in a quite, peaceful area where there is not too much noise not too many visitors.

4. Clean - It is preferable that a rabbit cage be self-cleaning with either wire screen or bamboo slats used for the floor. The holes in the floor should be large enough to allow the faeces to drop through. The interior of the cage should be easy to clean, especially where food and dust and dirt may collect. Clean hutches help prevent diseases.

5. Comfortable - Each cage should be large enough to adequately accommodate the rabbits kept therein. Allow approximately 0.4 m² for each adult rabbit and 0.6 m² for each doe with bunnies.

The cage should be free of sharp objects which could hurt the rabbits and it is a good idea to have a shelf or a board on which they can rest (Zwann, undated).

6. Easy Access - An opening in the cage should be adequate in order to reach the rabbits, to put in food and water, clean the cage, and to put nest boxes in. A flexible cover on the top of the cage is recommended as this allows for easy access into the cage. Many cages are also built with a door on the front. The type of opening will determine the desired height of the cage.

7. Separate Compartments - For management and control of reproduction, it is best to keep bucks and does in separate cages. The doe can be brought to the buck's cage for mating. The young females can be put in a larger cage on their own upon weaning, until they are either sold or placed in their own individual cages for use as does. Young bucks should be kept in separate cages after they are about three months' old.

8. Nest Boxes - dark secluded place should be made available for the doe to make her nest and to kindle. It should be large enough for the doe to be able to turn around and to feed her babies without stepping on them. The recommended dimension is 30 x 40 cm (World Neighbors, 1975; Mamattah, 1976). This can be a box made of boards or bamboo, a basket, or a clay pot. It is preferable that the nest box be removed when the young leave the nest (2-3 weeks old). The nest box should then be cleaned and stored until the next does is about to kindle.

9. Solid Construction - The choice of materials for the rabbit cage depends on what is available locally. Boards and wire screen are best if sufficient capital is available to pay for them. Bamboo requires more upkeep but it is much cheaper for villagers in forest areas. In the savannah, where wood is very expensive and bamboo does not grow, bricks or cement can be used for the construction of the rabbit hutch.

Wood or bamboo should be protected from premature deterioration due to gnawing by the rabbits or rotting due to moisture. Zwann (undated) suggests treating the wood frame with Carbonyl to discourage the rabbits from gnawing on the wood. If wire screen is used, it should be on the inside of the wood frame to deter the rabbits from gnawing on the wood. If bamboo is used, the hard outer surface of the

bamboo should be turned towards the inside of the cage. Vines or cord used to tie the bamboo should be kept on the outside wherever possible.

10. Inexpensive - The rabbit hutch should be built within the means of the owner, keeping costs to a minimum without sacrificing quality.

C. RECOMMENDED HOUSING FOR VARIOUS AREAS

Zwann (undated) gave plans, costs, advantages and disadvantages of 5 different types of rabbit hutches built and tested at the Centre de Formation Horticole et Nutritionnelle at Ouando, near Porto Nuovo, Benin. These were all made of locally available materials and cost less than \$30 for an 8-cage hutch.

Attfield (1972) recommended 2 types of hutches for Nigeria: bamboo and wood. He recommended that the cages be 0.75 m. deep and 0.60 m. high and 1.25 to 1.80 m. long for each adult rabbit. These cages were waist high, single tier, and self-cleaning (using wire mesh on the floors); straight mats or burlap bags could be hung over the ends of the hutch to protect the rabbits from sun and rain.

Mamatah (1976) recommended an all bamboo, three compartment hutch with wire screen doors and floors for village use. These hutches were self-contained, with their own bamboo roofs. Each compartment was 75cm wide, 60cm deep, and 50cm high in front and 45cm high in back to allow for the slope of the roof. The floor was 50cm above the ground, held up by legs made of boards. Bamboo strips 10cm apart were nailed under the floor wire screen to support it and to prevent dogs from tearing the screen from below. The kindling box was 30cm x 40cm with 30cm high walls and no top.

Rabbit hutch made of locally available materials in forest areas. (World Neighbors, 1975)



World Neighbors (1975) translated a booklet in Chulaba prepared by the SEDA program in Zaire. They gave instructions for building very simple housing made of materials easily available in forest areas. This type of housing has been seen in use by villagers in a number of countries and so will be described in a little more detail.

As illustrated above, this hutch contains 2 rows of cages each facing the inside of a long shed. The shed is covered by a roof made of thatch supported by wood posts and bamboo rafters. The cages are waist high with roll-back bamboo tops for easy access. The dimensions of the cages are approximately 60cm deep x 60 - 100 cm long.

The walls of the cages can be made entirely of bamboo or raffia palm stems. These are tied to the vertical supports with whatever cords or vines are used in the construction of local houses. These should be tied on the outside of the cages wherever possible so that the rabbits cannot gnaw on them. The slats in the walls should be spaced close enough together, especially near the floor, to keep small rabbits from falling out. The spaces can be larger near the top of the cages to allow for good ventilation.

The floors of the cages can be made with bamboo slats or by splitting and weaving strips of bamboo. The latter are preferred as the slats can cause problems with the rabbits, especially young ones, slipping and getting their legs caught. The woven bamboo floors should have openings large enough for the manure to fall through to the ground below. With the outer surface of the bamboo facing up, the rabbits are less likely to gnaw on it. Keeping a sufficient supply of greens available to the rabbits should reduce the rabbits' need to gnaw on the floor or walls of the cage.

Where wire screening is available, it is preferred because it is easier to keep clean. The disadvantage is that it is expensive and rusts easily. If only a few cages can be floored with wire, these are the ones reserved for very young rabbits.

The nest boxes can also be made cut of bamboo. The recommended size is 30cm wide, 30cm high and 40cm long, covered on top. The front opening should be 10cm from the bottom to prevent the babies from leaving the nest boxes too early.

D. POSSIBLE ALTERNATIVES FOR SAVANNAH AREAS

In the savannah regions of Africa, wood or bamboo are often scarce and expensive. A variety of types of housing have been tried for raising rabbits in these areas.

Cages made of cement block have been seen by the author in Upper Volta. These have either wire screening floors or cement floors from which the manure must be swept daily. Each cage has only a door on the front. The thick cement walls help to keep the temperature moderate in these areas where the wind can be very hot and dry.

Another suggestion for arid areas is the construction of underground compartments with inspection hutches (Templeton 1968). A similar alternative recommended using a deep litter system with stone walls and floor (Regier, 1975). It is important that the litter always be kept dry. Does can make their nests right in the litter.

Allowing rabbits to burrow underground would assist in keeping them cool in hot climates. However, Owen (1977) observed that these burrows would be difficult to clean and could increase parasitic disease problems such as Coccidiosis. Adams (1973) claims that rabbits will not drop faeces underground but will do so only above ground outside of their burrow. The author does not know whether or nor this would hold true for rabbits in a confined area which are allowed to burrow, though he has observed that rabbits on wire screening tend to use the same corner of the cage every time they pass faeces. If this is true, the problem of disease in a dry burrow would not be quite as bad as one might suspect. The places where droppings did collect would have to be swept clean regularly.

The author's experience in 7 countries of West and Central Africa has indicated that at the village level, the housing recommended in the World Neighbors newsletter (1975) is best where those materials are available. In efforts to make rabbit raising available to other places, however, the possibility of raising them on the floor cannot be totally discarded, though more village-level research should be done to see how this method can be improved.

A P P E N D I X

Rabbit Raising in Saboba Area

by

Denice Williams

The Saboba Family Health Program, situated in north-west Ghana, has as one of its objective the encouragement of the village women to raise rabbits. Rabbits had never been raised in these villages and housing would prove a big problem. Rabbit hutches could not be constructed as wood is scarce in the savannah areas of northern Ghana. The women must walk miles into the bush just to obtain firewood for cooking. Bamboo is only found in the south of Ghana in the rain forests. Any type of screening or roofing material is very scarce and extremely expensive, thus completely out of the reach of the budget of the subsistence farming family.

It was therefore necessary to try to make do with what the

local type of housing and rabbits will probably never be raised commercially in this manner, but it seemed the only solution for a woman who wanted to raise a few rabbits for her family.

The traditional house of the Konkomba tribe around Saboba is made up of a round mud hut with a thatched roof. Chickens, pigs, goats and sheep are often housed in similar but smaller dwellings. In these small huts there is usually a small opening in the wall big enough for a small boy to crawl in and out of.

It is in this type of small round hut that the women keep their rabbits. The woman's first problem was to find something suitable to cover the hole to protect the rabbits from dogs and cats, both of which are natural predators of rabbits. More rabbits have been killed by dogs and cats than have been killed by disease. If the women are not very careful about securing the opening, the rabbits can and do escape. Some women have found a piece of zinc roofing, while others have used woven grass mats or pieces of boards to put in front of the opening. It is good if some light is allowed to enter through the opening.

One of the most important things to determine in trying to judge if a hut is suitable for rabbits is whether its floor is dry throughout the rainy season. This means that the grass roof must be in good condition. If the roof needs repair it must be done in the dry season when the grass can be collected. If the floor does become wet, the rabbits must be moved immediately. The opening of the hut should be large enough for a small child to enter and sweep daily and collect the rabbit manure. In places where the women were lax about sweeping and the ground was damp, the rabbits developed worms in their feet, some of which got infected and the rabbits died.

Some women have made an extension with mud walls about 1.25m high on each side of the opening, creating a small yard for the rabbits to come out into and yet be safe from dogs.

The buck and doe are kept together until the doe kindles and then the buck is removed. In some villages several women share a