

RAISING RABBITS IN THE BACKYARD

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GHANAIS have a time-honoured tradition of raising small animals in the backyard to supplement the family meat supply and on occasions sell the animals for cash. In urban centres the practice has taken on commercial proportions, particularly in the poultry sector with handsome cash rewards to the most persevering operators.

By no means, however, are the potentials in this field limited to poultry. Rabbits and grasscutters are slowly but surely making in-roads into the backyard industry with no mean returns to the operators' labour.

Why Raise Rabbits?

More than any other species intended for meat, (livestock excepted) rabbit raising hold a special appeal to the housewife. Temperamentally, these animals have an easy, quiet, disposition, often shy and not as noisy and demanding as poultry. Feedwise, they eat grass primarily—which, of course, is a cheap source of food compared with the more expensive grain and protein concentrates normally required by poultry. Besides rabbits have a high littering (reproductive) rate with rapid turnover of meat.

Rabbits adapt very well to backyard conditions—their husbandry also fitting well with the daily chores of the housewife. Unlike poultry, there are no serious health problems in rabbit raising: there being little need for immunization and other forms of disease control.

So popular are rabbits nowadays that requests for assistance to research and development institutions to help with their production have been on the rise. Some girls' training colleges (including Aburi Presbyterian) have taken up rabbit raising on a hobby as well as commercial basis, while other institutions notably, the Home Science Department at Legon have in-

cluded the subject on their Extension Diploma programme.

In furtherance of these developments, this article takes up the subject of rabbit production to some depth, in the hope that the ideas and thoughts it offers will serve as a guide to present as well as future enthusiasts in the field.

Before we begin with discussions, however, it will be helpful to acquaint ourselves with some terms used in the trade.

Among breeding stock, the male rabbit is called the *buck* and the female the *doe*. Young growing rabbits are referred to as *junior bucks* and *junior does* respectively. The terms *herd buck* and *dry doe* are applied respectively to groups of fattening and/or serving males and non-lactating females.

Production Units: Housing

In raising rabbits, the main things which should engage the attention of the operator are good housing, feeding and care (or management) practices.

The basis of rabbit housing is the *hutch*, which is essentially a cage or some material that the rabbits cannot easily chew on or soil. Remember rabbits are rodents similar to cane rats and giant rats with a great appetite for gnawing anything worth their while.

Hutches are located in the *rabbitry*, or the portion of the backyard selected for this purpose. The rabbitry must be fenced-in if possible to secure protection from predators, particularly strange dogs, cats, snakes and of course thieves also.

For a moderate-size holding, you may require at least three housing units: a breeder/nursing unit with separate hutch compartments for pregnant does and/or does with litters, a unit for growing rabbits and finally for dry does and

herd bucks including those intended for fattening. (See Fig. 1)

To reduce construction costs, wood may be used for the supporting frames including the rear and sides of the unit, but the floor must be of welded-mesh overlain with wire netting of about half inch size. The front end must be similarly covered with netting of the same description. Netting of good size is important as it helps to keep out predators, birds and incidentally lizards.

Floor height should be at least 2' 6" from ground level. The depth of the cage, i.e. from floor to roof should also be about the same. The roof must slope backwards. At least three square feet of space must be allowed per mature rabbit i.e. one under five lb. weight. For breeder/litter units up to four sq. ft. may be allowed per doe. Where possible there must be per nursing hutch, only one doe with its litter.

Every housing unit must have feeding and watering equipment including troughs and hay mangers. Suitable local earthenware will serve for this purpose, but they must be spacious enough to hold large quantities of feed or water as the case may be. They must be installed in such a way that they are not easily tipped over. Often rabbits attempt to scratch the feed out and waste it. The manner of installation should secure against this. Besides they should be removable for cleaning.

Nursing compartments must have nest boxes installed in them. These should be large enough to prevent crowding, but small enough to keep the litter together. They should also provide for good drainage and excellent ventilation. Grass straw or packing-straw should be used as bedding for the litter and must be changed periodically.

Housing units must be placed away from direct rays of the sun. Preferably, they must be placed under the shade of tree, though not in total darkness as some light is essential for these animals.

Breeding

Unless commercial goals are contemplated, it is always safe to begin the backyard operation on a small scale, possibly with one buck and two does, and expand operations as demand re-

quires. Most indigenous Ghanaian rabbits are of smaller size, the commonest averaging about 5lb. at maturity similar to the American albino (pink-eye) variety which is often imported into Ghana for breeding purposes.

TABLE 1

Classification of Rabbits According to Sex-Age Criteria

	Male	Female
Breeder stock ...	Buck	Doe*
Grower stock ...	Junior buck	Junior doe
Adult stock ...	Herd buck	Dry doe

* Comprising pregnant and nursing varieties.

TABLE 2

Data on Reproduction and Growth

(Estimated Value for a Mature Rabbit of about 5lb.

Sexual maturity ...	140 days from birth
Estrous cycle ...	12 days
Heat period ...	12 days
Pregnancy period ...	30 days
Nursing period (birth to weaning) ...	60 days
Grower period (weaning to fattening) ...	60 days
Fattening period (fattening to market)...	30 days

From the 3rd to the 14th day of the cycle inclusive.

TABLE 3

Summary of Rabbit Feeding

Pregnant and nursing does prewean litters : High protein concentrate and grain feed; lush young grass and legume.

Growers (postwean to fattening) : Moderate supply of protein concentrate and mixes; large amount of bulk in the form of grass and legume hay.

Herd bucks, dry : Low protein concentrate and grain mixes; Extremely large supply of bulk.

Fatteners and finishers : Moderate supply of protein concentrate and grain mixes. Lush, young grass and legumes in ample quantities.

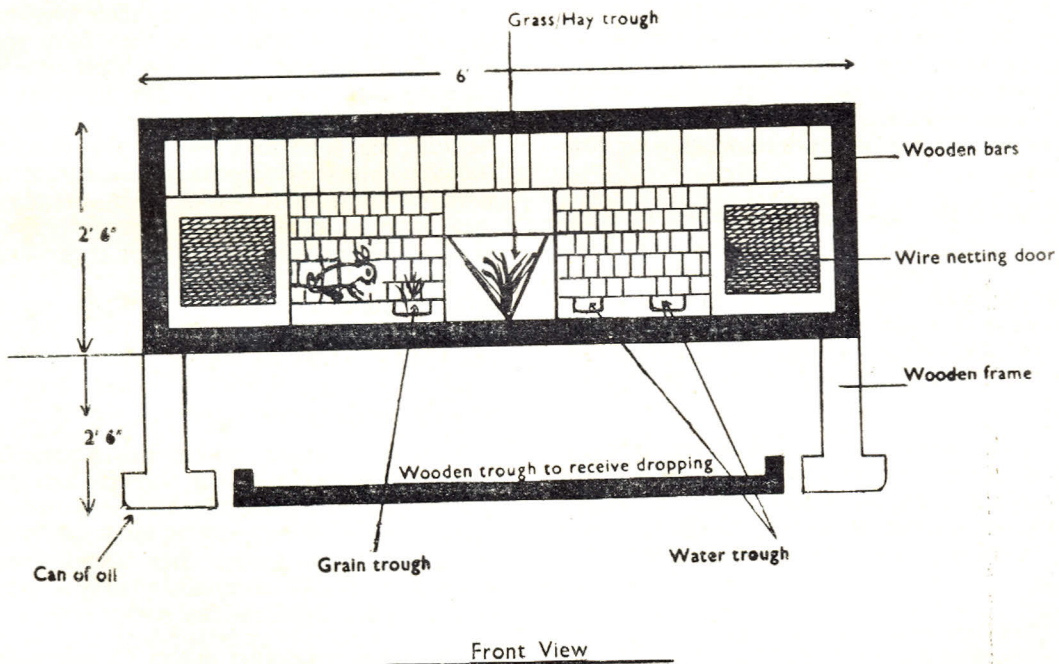
In general smaller breeds of rabbit attain sexual maturity earlier and develop faster than the medium-sized or giant varieties. The 5lb. types reach puberty at about five months of age. The heat period or the time when the female will accept the male lasts for about 12 days in the doe. Normally the estrous cycle or the period within which the doe prepares itself for possible pregnancy is of 16 day duration. However, in the first two days no mature eggs are produced while in the last two, the eggs tend to degenerate thus leaving 12 clear days in which conception can take place.

Rabbits release several egg cells at a time which explains why they are litter-bearing. The eggs are released upon stimulation by sexual excitement during the act of mating.

For mating purposes, *the doe must always be taken to the buck*; otherwise there may be difficulty of service as the doe may not accept another rabbit in her hutch and may fight it off. Mating will occur immediately upon placing the doe in the buck's hutch. After this the doe may be returned to her own hutch. Pregnancy is indicated by "bumps" in the abdomen and may be determined by palpating the doe in the relevant region on the 14th day following servicing. A nest box should be placed in the hutch in the last week of pregnancy.

The period of pregnancy extends a little over 30 days while the period of nursing or the time from birth to weaning is about 60 days. Under a schedule geared to these periods, the doe can produce four litters in 12-months. (Bucks must always be kept away from does as observation indicates that does can be re-fertilized within 24 hours of kindling).

FIGURE 1. HOUSING UNIT FOR HERDING RABBITS



Note: Total floor space: $6' \times 3' = 18$ sq. ft. Space allowed per mature rabbit under liberal management: 3 sq. ft. Hence for an 18 sq. ft hutch, up to 6 rabbits can be accommodated. However, under economic management a maximum of 10 rabbits may be accommodated if 2 sq. ft per mammal is allowed.

Feeding

New-born rabbits must have their initial feed in the form of milk from the doe. As in all mammals, this is essential because the milk contains a substance called colostrum which helps the young animal to build up early resistance against infection. As time goes on, however, the rabbit will begin to eat solid food. In general, rabbits require the following as the basis of feeding:—

- (a) cut herbage (grass and legume) which provide bulk, and
- (b) a concentrate source (mainly grain and protein) which serves as a supplement to the bulk.

Bulk is relatively inexpensive feed—easily obtained in the environment whereas concentrates must be purchased.

In general, concentrates are more important in developing juniors, pregnant does and nursing does while hays with lush, fresh, leafy green characteristics are more suitable for dry does and herd bucks. Hay must be fine-veined, fine-stemmed and cut to no more than 4" in length. The need for bulk is very important in rabbits as under-supply may result in soft droppings that will mash on the hutch floor or of rabbits that will chew their fur or the wooden parts of the hutches in hopes to provide for the deficiency.

Additional feed that may be supplied are root crops (cassava, yam, cocoyam) sugar cane and palm fruits. Pelleted protein feed is ideal, since this provides the rabbit with an opportunity to gnaw on something as often as possible. Besides pellets secure against feed wastage as happens through scratching and burrowing into grain.

Hay must always be placed in the manger provided for it to avoid contamination, as dirty feed may cause digestive disturbances or infest rabbits with internal parasites. Similarly, sour feed or feed in a state of fermentation must be avoided.

Rabbits tend to eat more at night. At times of day when environmental temperatures are high, their feed intake is lower. In general though, it is important to feed them more regularly than more frequently.

Management

Managing any class of livestock implies their proper handling and care in health, disease and under favourable and unfavourable circumstances for the most optimal returns in the products desired. With rabbits such care in the first week of birth is very important.

Rabbits are born blind and naked, and does are not particularly good mothers. It is good management to so arrange that the litters are dropped directly into the nests. Occasionally, the young rabbits may be dropped on the hutch floor while those that are born in shallow nests may attempt to crawl out of them. The danger here is that they may get chilled or else the doe may stamp over them.

Litters must be picked up from the hutch floor using a clean dry soft cloth or cotton wool and deposited in the nest. If litters are too many, say 10 or more, some may be transferred to a foster mother or to does with smaller numbers of offspring. This is one reason why it is important to service at least two does simultaneously.

Young rabbits start opening their eyes about the 10th day by which time they have grown appreciable amount of fur on their otherwise naked bodies. Around the 20th day they may start to come out of their nests permanently. At this time, solid feed may be provided. This should comprise grain/protein concentrate mixes similar to those fed to chicks. As the litters grow, they may be provided in turn with broiler, grower and finisher-type of ration depending on the stage of development. However, this should only be supplemental to hay which must be introduced liberally and fairly early in the life of the young rabbit to enable it to develop its ruminal system quickly. The litter must stay with the mother until weaning in 60 days.

Prior to weaning, miscellaneous aspects of management such as sexing, marking and identification may be undertaken. After weaning, males intended for marketing or slaughter must be castrated to ensure their rapid growth. Toe nails may also be cut periodically to prevent injuries and foot deformities.

Sanitation is another aspect of management that demands the strictest attention in rabbit husbandry. Routinely, the hutch must be cleaned once a day—all soiled bedding, contaminated

feed and manure being removed. The rabbitry must also be swept thoroughly and the drinking water changed each day. Periodic scrubbing and disinfection of hutches and nest boxes is strongly advised particularly when a new litter or herd of rabbits are to be housed in them.

Sick animals must be removed, isolated and treated before being returned to the herd and dead ones buried far away from the hutch, deep in the ground to prevent dogs from digging them up. Rabbit manure and feed remains make excellent fertilizer when properly treated. For best result they must be buried as compost and dug out when required.

Slaughter, Dressing and Refrigeration of the Rabbit Carcass

Rabbits must be well-finished on grain/concentrate mixes before being marketed or slaughtered. Prior to slaughter it is desirable to immobilize the animal either by dislocating the neck or by applying a hard, sharp blow to the skull to put it in a state of unconsciousness. This done, the neck is sectioned to sever the blood vessels, the head being removed if desired.

Following this, the animal is suspended on a hook (head down) at the right ankle. An incision is made around the ankle and the skin of the ventral part leg and thigh is cut and removed. Care is exercised not to damage it. The feet are then cut off at the level of the ankle and wrist.

Next the animal is eviscerated by an initial incision down the ventral midline. Beginning with the abdomen all viscera contents including the larger blood vessels are removed except for the kidneys. Internal (as well as external) fat covering, must however, be left intact. In general fat covering helps to enhance carcass appeal, protect it against excessive shrinkage and add to the value of carcass yield.

Using a pair of sharp scissors the thoracic cavity is cut open and the oesophagus, heart, lungs and accessory structures are removed. Both the liver (minus the gall bladder, of course) and the heart are saved and added to the carcass. The pelvic bone is cut into two halves and the rectum is removed. The completely dressed carcass is then washed and held on the hook for sometime to allow its temperature to drop before being chilled. Chilling is best accom-

plished under a temperature range of 36-38°F. This should, however, be done for no more than two days. Beyond this the carcass must be frozen to prevent deterioration.

Cutting, Packaging and Preparation of Rabbit Meat

Rabbit carcasses may be preferred whole or as cut up units either for packaging and storage purposes or directly for marketing.

After a 12-hour thorough chilling, the carcass may be cut into sides, quarters or eighths as the need may dictate. A scheme is provided in Figure 2. Each unit is then wrapped in plastic packaging material, sealed and marked. Alternatively it may be quick-frozen, if it is intended to be held for an extended period.

Most Ghanaians do not like rabbit meat not much because they despise the species, but because of its apparent lack of flavour. To overcome this, the rabbit carcass may be seasoned with salt and red pepper and dry-smoked before being used. Smoked rabbit meat makes excellent dish with palm soup or groundnut soup comparable to grasscutter meat.

For Western-style dishes such as roasts, the rabbit carcass may be seasoned with black and white pepper, salt and some red pepper. Strips of bacon may be inserted in the lean tissue at various points. This done, the carcass is wrapped in aluminium foil and roasted to doneness. At least 30 minutes before the roasting is complete, the foil must be removed to permit the product to brown sufficiently. It pays always to invite friends or neighbours to join one in dishes like these. Evidently this may help to raise enthusiasm for the species and possibly help to eradicate preconceived ideas about it.

Rabbitskins as a By Product

The only major by-product of rabbit production is the skin. Presently however, no markets exist in Ghana for it. Though exports would be a more likely outlet, such sources would evidently be more interested in volume and in high-grade skins, both of which may not easily be met at the backyard level.

Locally, it is quite possible that traditional skin and leather-craftsmen may be interested in

using rabbitskins in making ladies bags, pocket books or other items of tourist and souvenir attraction. Most of the craftsmen may, however, have their own methods and specifications for the processing of the skins consequently their specifications must be obtained before giving the skins any form of treatment. They may even prefer to buy the skins fresh from the producer in which case, much labour and time will be spared the operator who would otherwise be faced with the prospect of processing them herself.

On the other hand, if the producer were obliged to cure his skins personally, then the main thing to do would be to obtain a skin-shaper made of wire for purposes of stretching the skin and keeping it firm and wrinkle-free. All fat must be removed while drying the skin thoroughly, flesh side out. Rabbitskins should never be cured with salt. In hot, humid weather, the skins may be sprinkled with crystals of naphtha, then packed and stored prior to shipment.

REFERENCES

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FIGURE 2
THE RABBIT CARCASS
Showing scheme of cutting

