IMPROVING THE PERFORMANCE OF LOCAL CHICKENS

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ACKNOWLEDGEMENT

There has been an increasing interest in recent times among Scientists and other stake-holders in rural poultry development, particularly the local chickens. The free-range system of production is the most natural and livestock-friendly form of poultry husbandry. Yet, the production system which accommodates majority of the local chickens suffers neglect and remained un-improved.

In Nigeria, like in many other developing countries, the local chickens form the bed-rock of the poultry industry, contributing over 80% of the poultry products. Therefore, the need to pay proper attention to the development of local chickens, bearing in mind their potentials for rural poverty alleviation and animal protein food security, cannot be over-emphasized.

This bulletin shall provide basic information on how to increase the performance of local chickens through improve intervention practices and technologies. The booklet will be useful to the bayarders, family poultry producers and other rural poultry development workers.

We do acknowledge contributions from various poultry scientists in research institutes and universities whose work were made used of. We sincerely thank Prof. E. B. Sonaiya of OAU, Ile-Ife for inspiration given and his cheerful release of valuable information. Our thanks also go to colleagues at NAERLS/ABU Zaria who contributed in no small measures to ensure the success of this bulletin.

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INTRODUCTION:

The local or village chickens are the commonly known domestic fowls, found scavenging around the vicinities of rural communities in most developing countries. They account for the majority of poultry products in Nigeria. The local chicken flocks usually comprise between 5 - 20 birds kept by one family. They are most often managed by the women which provide them with an independent source of income.

The village chicken production system in rural areas has been ridiculed because of the low biological productivity (egg and meat) relative to the commercial/industrial poultry production system (Table 1). Therefore, most poultry improvement programmes in Nigeria in the past years were directed toward introduction of specialised or exotic breeds, crossbreeding and management intensification.

Table 1: Production Parameters of Local Chicken, Shika brown (NAPRI) and Commercial Strain.

Parameters	**Local Chicken**	Shika Brown	Commercial Strain*
Age at 1st egg lays	135-158	136	134
Hen house production to 72 Weeks	141	278	290
Hen day production to 72 Weeks (No of eggs)	146	290	300
Body Weight at maturity (kg)	1.5	1.9	2.0
Average egg weight at 40 Weeks (kg)	38.4	58.2	60
Body weight at 72 weeks kg)	1.45	1.8	1.95

Source: NARP 1998 Annual Report submitted to Federal Ministry of Agric and Natural Resource Abuja. * Aichi Kitalyi 1996.

Although there has been measurable improvements in eggs and poultry meat production, village chicken production system dominate in the rural areas. High mortality of introduced breeds, low feed resources

and lack of understanding of the complex biological and socio economic relationships have limited success of most of the programmes. The village chicken production system deserves to be considered on its own merit, where small investments can produce good returns. A system that is not only viable but sustainable. Also the positive impact of local chicken production on rural household nutritional status is well recognised. It is known that a broody hen that produces 60 eggs and 2-3 slaughter birds per year can provide 4kg meat per caput which is significantly higher than the annual protein consumption in the rural areas. The predominance of local chickens in the Nigerian poultry industry is a good indicator that these fowls deserve more attention for improved performance.

Advantages of keeping local chickens

The popularity of village chicken is because of the following merits:-

*Local fowls are adapted to local climate and harsh ecological conditions.

*Their products (meat and eggs) are sources of high quality animal protein for households. Unlike the case with pork and beef, there is hardly any strictures against eating chicken products.

*The meat is portable, easily prepared and low in fat.

*They are more suitable for extensive (free range) system of production as they make better use of garbage than hybrid chickens. Imported production inputs are not required.

Local chickens suffer less local poultry diseases than the more fragile hybrids.

*In many cities the village chicken's meat is preferred to that of commercial broilers because it has better texture and stronger flavour. This is reflected in the price of the village chicken which is twice that of the industrial broiler.

*The birds are conveniently sized, easily transported alive and by and large, do not transmit diseases to humans.

*The free-range chicken has in recent time found a "niche market" among poultry consumers in industrialized nations as the preferred meat. This gives country like Nigeria an opportunity for foreign exchange.

EXISTING PEASANT PRODUCTION SYSTEM

The usual practice in most villages is to raise local chickens extensively, allowing them to scavenge of the village and surrounding area. Chickens raised in this way mostly stay near the houses but may wonder short distance into the bush at the perimeter off the village, in search of food. On the average the peasant farmer keeps and is contented with few number of birds, which receive little or no care. No special attention for shelter, food or disease control. The birds in lay make their own nests for egg production, incubate, hatch and brood (Fig. 1). Mortality therefore is very high due to constraints such as predators, diseases and even human thieves. The local breed predominate this production system. Labour input for maintenance of birds is very minimal. The chickens may come at owners call and return to the house at dusk to roost or to be fed. The work involved is carried out by women, while children may help and occasionally men.

Fig.1 Egg incubating hen.

Understanding the Local Chickens

Local Chickens are omnivorous, living on seeds, insects, worms, leaves, green grassed and kitchen scraps. The village hen lays a dozen eggs, takes 3 weeks to hatch out a brood of chicks, stays with the chicks six weeks or more, and only then starts laying again. The scavenger hen can begin to lay at about 6 months of age. The average weight of the egg is approximately 40gm..

These passive gregarious birds have pronounced social (pecking) order. If acclimatised, they remain on the premises and are unlikely to go feral. If given a tittle evening meal of "Scratch" they learn to come back home to roost at night.

Choice of Foundation Stock

In judging chickens for use as foundation stocks, the conformation, body size and the correct colour of the variety are the most important factors to be taken into consideration. The foundation birds must be free of defects and diseases. The qualities to look for in a good layer hen are in Table 2 below.

Table 2 - Indicators of good layer hen.

Character	**Hen in production** (Good Layer)	Hen our of production (Poor layer)
Comb	Red, large and waxy	Small, grey and scaly
Wattles and ear lobes	Large and soft	Small, coarse and dry
Pelvic bones	Pliable and wide apart	Hard and narrow
Cloaca	Large, oblong and wet	Small round and dry.

When a hen is a poor layer, the body appears smaller than when she is in production. When she starts laying, a considerable development occurs in the ovary and this activity is expressed in the increased size of the comb and wattles. If the body capacity is small and the space between the pelvic bones is narrow the hen is a poor layer. Therefore, the expansion and development of these parts are absolutely essential for good egg laying. Again good layers must have vigorous head, alert and healthy eyes with strong curved beak. A broad and flat back is an indication of good egg laying also.

Selection of a good Cock

When the best local hen has been carefully chosen, it is important to look out for a good cock of high reproductive performance. Figures 2 below shows the appearance of a promising good cock.

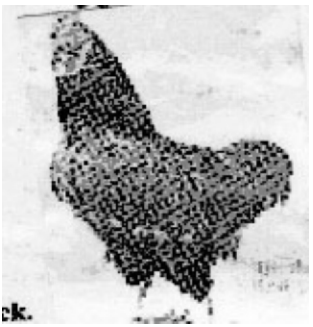

Fig.2 A good Cock.

Since one cock is usually mated to about eight hens, a cock's prolific ability is more valuable in the improvement of next generation. The choice should be based on good conformation/body size, freedom from any defects and diseases, should be alert, healthy and vigorous. The combs/wattles have to be bright red and soft. The cock should have strong legs, sharp eyes, attractive and must have a high sex drive. These qualities are important in order to ensure the best offspring.

Production Cycles of the Village Chickens

The productivity of local chicken is very low, due to minimal investment which does not interfere with the natural cycle of the birds. **The reproductive cycle is of three phases:**

1. The laying phase (10 days)

2. Incubation phase (21 days)

Egg production is usually in two to three clutches per hen per year with about ten eggs per clutch. Hatchability is good (80%) and compares favourably with performance under improved condition with improved birds.

Mortality is high (40-60%) and would appear that the events occurring immediately around hatching are most crucial. Survival rate of chicks at 0 - 8 weeks is less than 20%.

Chick mortality is highest during the dry season because dehydration is added to other causes of mortality.

The level of fertile egg production is in the range of 20 - 30 eggs per annum (i.e. a mean clutch size of 8 - 9 eggs and 2.5 clutches per year). Egg production in clutches reduce the total number of eggs produced, while brooding further decreases the total number of hen-days available for egg production. The potential for egg production for egg production under village conditions is undoubtedly higher if the number of clutches raised per hen per annum is increased.

Housing/Shelter and Facilities

Most local chicken keepers in Nigeria provide some form of shelter for their birds at night. This varies from the use of spare rooms which are usually kitchens, stores, wire cages to the building of a "Companion house". The companion house (Fig. 3) is a small mud structure of about one metre high attached to the main building.

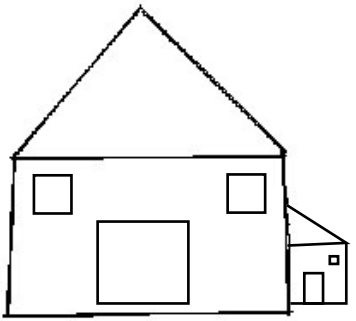

Fig.3. A Companion house

Although some form of light (usually bush lanterns) could be provided, it is mainly to scare away thieves and predators, but not for heat.

When purpose-built structures are used for shelter, it is usually a hand-woven wicker basket cage shaped like a round-bottomed cone and made of spilt rachis of palm fronts Fig. 4. It is used as a night shelter, as a brooder or hatching cage and for transporting trade chickens.

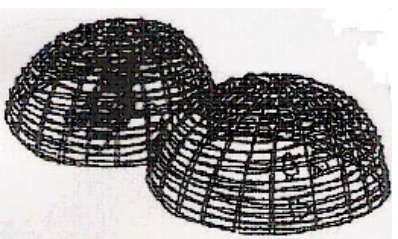

Fig.4. A wicker basket cage.

The peasant farmers cannot afford intensive poultry keeping, but the local fowls need some form of confinement, to reduce chick mortality, loss from predation, harsh climatic factors, accidents and others.

The Semi-Intensive system of poultry keeping is therefore recommended for peasant chicken keepers. In this system, birds are usually

confined with an expanse of land (garden or yard) in which chicken houses with nests and cages are erected. The chickens are allowed freedom outside the houses which are usually opened in the morning (6.0-6.30 am) and closed only in the evening (5.30-6.30 pm) when the chickens are back to roost for the night.

The Chicken House

Build local chickens houses using easily available and cheap materials such as bamboo, raffia sticks/wood, thatch, mud etc. Construct a one-compartment shed or hut with only the front side open to serve as the entrance for the flock and its caretaker. However, ensure to provide windows protected with wire mesh for ventilation. See fig. 5 below.

Fig. 5. A local chicken house design.

With this type of housing, the chickens stay in the house in the night. The floor should be covered with litter to absorb the moisture from the chickens' faeces droppings. The most important condition for this type of housing is that the litter must remain dry. Moist litter produces too much ammonia, which damages the health of the birds and encourages development of all kinds of parasites. Therefore, use of litter materials which absorb moisture such as wood shavings, chopped straw are recommended. Make sure the house is well ventilated. It is also necessary

to ensure the house is easy to clean, to disinfect and spacious enough to avoid over crowding.

Local Chicken house facilities

The following equipment are needed in the local chicken house:

Drinker (watering trough):

It is important to supply enough and above all cool, clean and fresh water to chickens. They are a number of ways to do this. For small number of village chickens, an upside-down tin with holes is cheap and easy (Fig. 6 a). Another possibility is to buy simple round metal or plastic bowls, but has to be protected to avoid entrance by the birds (Fig. 6 b). The advantage of a drinker with reservoir is that water is available for a longer period of time and the chance of water getting contaminated is less.

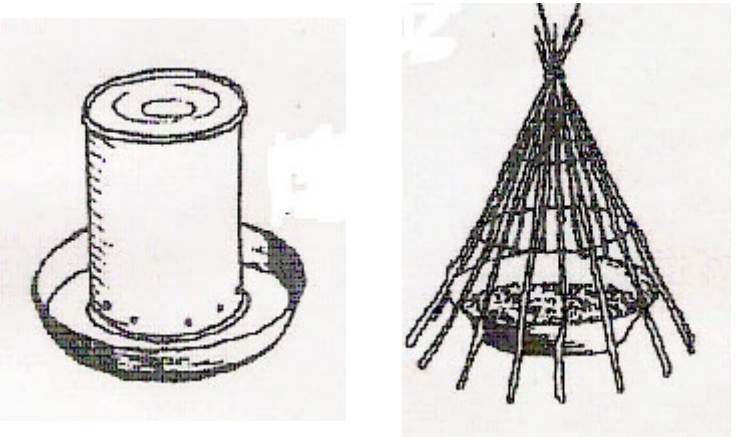

Fig. 6 a. Upturned tin with holes b. Bowl of water with protector

Feeder (feeding trough)

Open tray makes room for excessive feed wastage. To avoid this, a simple design of feeder can be very useful. A narrow feeder such that will not allow the mother entrance and scatter feeds is advised. Fig. 7 a, b, c, shows some simple locally designed feeders:

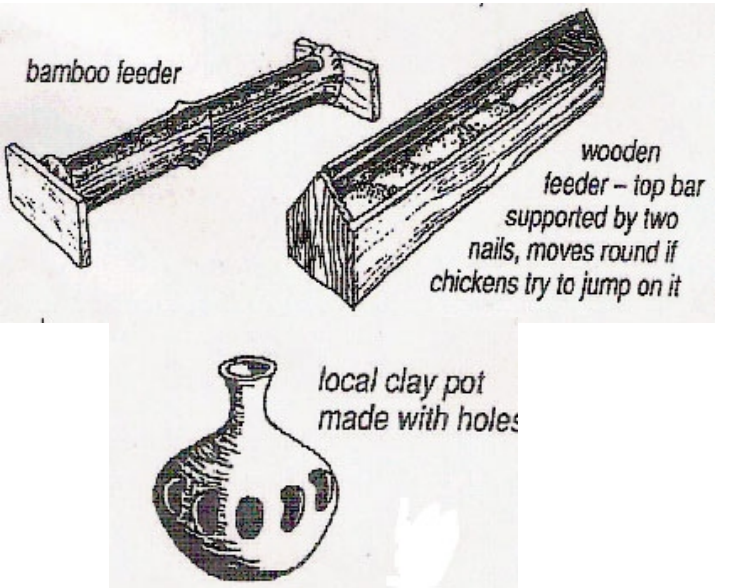

Fig. 7 **a.** Bamboo feeder. **b.** Wooden feeder with top bar supported by 2 nails, which moves round if chickens jump on it. **c.** Local clay pot made with holes.

Laying nest

Chickens need individual nests for egg laying. These nests need to be about 25cm wide, 30cm long and 35cm high. They can be made of wood or of other locally available materials such as bamboo and orchard type of grasses. They need to be stocked with a thick layer of litter to prevent eggs from breaking. To keep the litter in the nest, make a little partition of about 8cm to 12cm high at the front of the nest, as in figure 8.

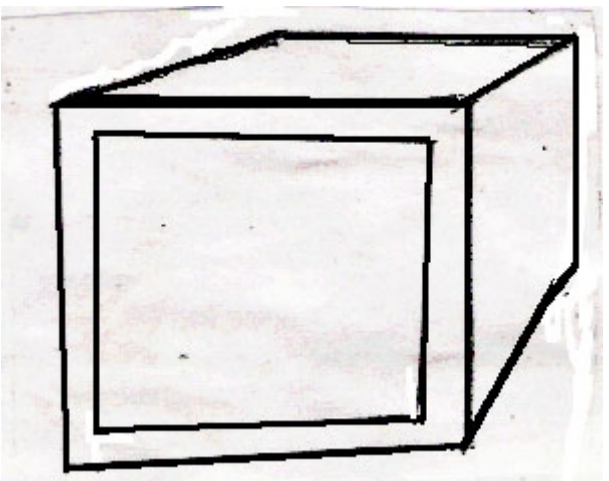

Fig. 8. Laying nest.

Hens usually prefer to lay eggs in a protected nest like this, than simply on the floor of the house.

Perches

Chickens like to spend the night on perches in high places. Perches are usually made of wood and of small slats 5cm wide 70cm high and 5-7cm long. (Fig 9). It is best to place them about 35cm apart. Each chicken needs approximately 15cm of sitting space.

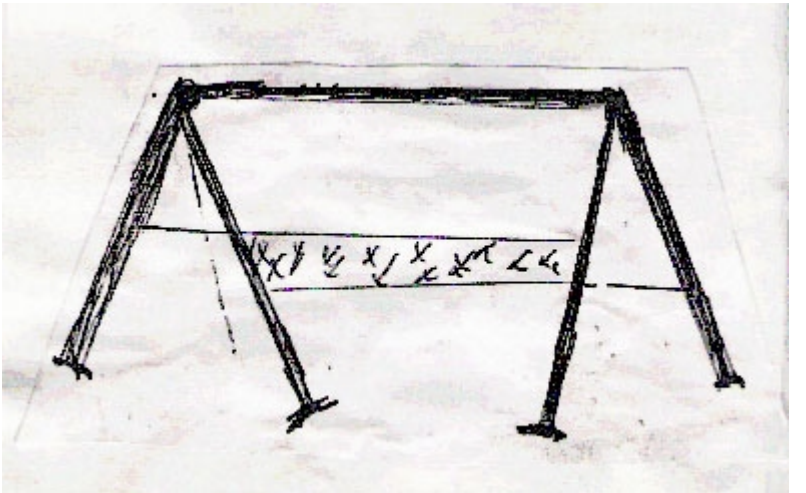

Fig. 9. A perch with dropping board under

You will need to have a space under the perches which collects the birds dropping for easy clearing of the chicken house.

FEED AND WATER

Local chickens require carbohydrates, protein minerals and vitamins in their diet.

If they are to produce maximally. Inadequate provision of feed, has been a major constraint limiting the full realization of the production potentials of local chickens. The birds are usually left to scavenge in the surrounding both for supplementary and often the main food. Whatever system of poultry management is used, it is important to feed the birds with complete and balanced diet.

However, for the free-range chickens the owner can do little to influence what kinds of the food the birds eat. In many scavenging situations complete and proper feeding is not possible, and chickens will certainly not be able to find everything they need all year round.
Food available to chickens on free-range most often time contain lots of crude fibres, which means inadequate energy from what they eat.

During harvest season, when a lot of grain is available, the chickens will usually get enough energy. However, at such times they usually get relatively too little protein to grow and lay as well as possible. It is important therefore, that the chickens get extra, especially animal; protein such as worms, insects, snails etc. Otherwise, they must be given extra plant protein-rich ingredients. In dry periods, a vitamin deficiency condition can quickly develop. Feed supplement containing wood ash, dried greens, cray fish dust and fruits could be added to their diets to supply some of the minerals and vitamins they need.

Chickens raised under range system during rainy/crop growing season pick up as much as 60% of their total diet as protein(mostly by eating insects), making their feed supplementation requirement different from those under intensive systems. To balance the feed consumed by these birds, all that would be required it to provide grains as a source of energy. This makes the formulation of feed for rural poultry very much cheaper and simpler than for those under the intensive systems. Layers raised under the range system and supplemented with whole grains for example, were known to produce as many as 200 eggs as compared to about 230 eggs under the intensive system per annum. When one puts into consideration the cost of feeds required to provide balanced ration to poultry under intensive systems the range system stands out clearly as an attractive venture.

For maximum productivity under the free-range system, it would be necessary to introduce birds to green food as early as 10 days of life, additional green food such as chopped lettuce, spinach or onions can be introduced gradually until they attain the age of 5 weeks by which time they can be left to graze along with the older birds see (Fig) 10 below:

Fig. 10 Grazing chickens.

Quantity of ration to feed

As a general quide, an adult chicken will need 100-150 gm of feed a day, depending on the body size and production level. This however must be accompanied by adequate water. Birds on range particularly during the raining/cropping season may pick between 65-70gm of their daily feed needs. It therefore means that supplement of between 45-60gms of good feed should be provided. If chickens are fed entirely on kitchen scraps and grain, the level of performance will fall considerably. This suggests the need for local chicken supplementary feed formulation and mixing as indicated in table 3... below.

Table: 3 Supplementary diet formulations for different classes of Local Chickens

Ingredients	**Chicks** (0-5 Weeks)	**Growers** (5 - 25 Weeks)	**Adult/Layers** (25 Weeks)
Maize, Guinea corn, Cassava peels etc	45.0	42.0	35.0
Offals of maize/G. Corn	34.0	43.0	45.0
Full fat soyabean/G. Cake	15.0	10.0	10
Bone/Oyster Shell ash	2.5	2.5	3.5
Blood meat	1.5	1.5	1.0
Limestone	-	-	4.50
Common Salt	0.25	0.25	0.25
Wood ash/Greens	0.75	0.75	0.75
Total	100.0	100.0	100.0

Water

A chicken consumes two to three times as much water as the feed she consumes. Therefore, when water supply is limited feed intake drops and consequently productivity declines. This shows how essential it is to provide all poultry flocks with fresh, cool and clean water at all times. Water containers (drinkers) need to be of right size for the age of the flock. Wash drinkers every morning to avoid water contamination.

Local chicken producers do not often time see it a priority to provide regular and constant clean water for their birds. Since most feeds consumed by chickens contains not more than 10% moisture, provision of water is a necessity for increased production.

HEALTH CARE

It is known that local chickens are better adapted and suffer less from local disease conditions than the more fragile hybrids. However, the case of disease out break in a flock of local chickens can have disastrous consequences. Prevention is obviously better than cure, and you can avoid a great deal of trouble and disease, simply by the management practices described in this booklet.

Some of the common parasites and diseases that affect local chickens are as indicated below:

External Parasites

External parasites are small animals that live on the body and feathers of the chickens. They suck blood, by burrowing into the skin of the birds. This activity leads to scratching of the body and can be very disturbing. Examples of external parasites are lice, mites and ticks. Chicken with this problem constantly peck their feathers in search of the pests. They can loose weight exceedingly and also could desert their eggs when heavily infested.

Control

Purchase dusting powder containing parasite killing chemicals for chickens e.g Selvin Asuntol or Katzimet. Some of these are readily available in the market. Regularly dust the body of the hens free of external parasites as show in fig 11.

Fig. 11 Dusting the chicken body, against parasite

Dusting should be repeated once it is observed that there is body pecking again.

Internal Parasites

These are parasites that live within the internal tissues and organs of the chickens. They are common with free-range fowls because of their scavenging activities. These parasites are worms, such as round worms tape worms, thread worms etc. The effected birds loose weight and are listless. The feathers are ruffled and dry. Chickens become infected by picking up eggs of the parasites from human faeces, contaminated water and feeds.

Control

If parasites are discovered in the feacal droppings of the birds, recommended authelmintics should be bought from the local veterinary store for administrant. Also prevent birds from contaminated water and feeds.

Diseases

The one that is of considerable economic importance in local chicken production is the New-castle disease. The disease is of great importance because of the severity and the nature of its attack. An out break of New castle disease can wipe out all chickens in a locality within a very short time. This is especially so in the very cold seasons of the year, such as harmattan and early raining periods. Signs from such affected birds usually include diarrhoea, twisting of the neck and redness of the eye. The effected birds look ruffled. A high percentage of effected birds die of the disease within one week see fig. 12 below.

Fig. 12 Hen suffering from New-castle disease with ruffled feathers .

Control

Treatment when the symptoms of the disease are established is not usually effective. Prevention by vaccination is highly recommended.

There is currently an international effort to develop feed-coated, thermostable (heat resistant) NDV Vaccine. Hopefully it is expected to be cheaper and simpler to use in vaccinating local chickens by farmers.

Other diseases to watch out for in free-range chicken production are, coccidiosis, fowl pox and fowl cholera. In general, to be on the safe side, farmers should ensure that all feeders drinkers are kept clean, ensure high level of sanitation in the poultry house and provide balanced and adequate diet with clean water.

Poisons

Poisonings can occur when mouldy feed containing toxins are eaten or accidental feeding on insecticides, herbicides and grain preservatives. This is usually rare and occurs when local fowls are starved and confined for long. However, local birds on range will carefully and naturally avoid poisonous feeds.

PROCESSING AND USE

The process of converting live matured chicken into carcass is important because it determines the final quality of the meat. High quality meat attracts higher consumer price.

It is important that slaughtering facilities maintain high sanitary conditions, because products of slaughtered chickens provide an ideal breeding ground for bacteria.

Slaughtering

It is not difficult to kill a chicken. Bird that are ear-marked for slaughter should be deprived of feeds for 24 hours to ensure empty guts for easy cleaning.

To slaughter a chicken, grasp the legs and hold them down to the ground with right foot then stretch the two wings backward and hold them down with the left foot. The neck can then be cut or severed by piercing it at the jugular vein using a sharp knife just below the hind brains as shown below in fig. 13.

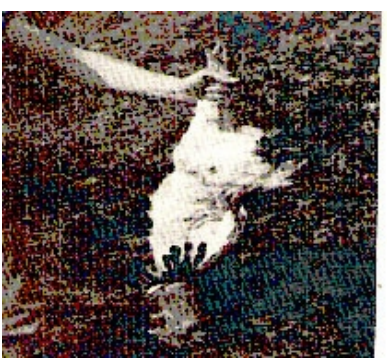

Fig. 13. Killing a chicken.

The bird will flutter for few seconds after death, but this is merely a nervous reaction of the muscles and soon becomes quiet.

Plucking

Immediately the chicken is slaughtered the feather follicles are paralysed and plucking is much easier. If the skin cools, it becomes more difficult to pull out the feathers.

For home use, the scalding process of plucking is recommended. This consists of dipping the carcass in cold water until the feather are wet. On removal, the excess cold water is allowed to drain out and then the carcass is dipped into hot water. As soon as the feather are loosed they are immediately removed Fig. 14 and again dipped into cold water. The temperature of the hot water should be between 53.3^{oc}- 54.4^{oc}

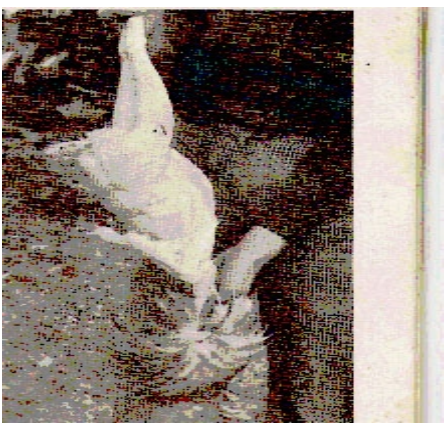

Fig. 14. Removing feathers.

Advantages of this plucking method are:

1. The fat is not dissolved in the skin and its flavour is retained
2. The appearance of blotching marks which is characteristic of carcasses only immersed in hot water is reduced to minimum
3. Plucking is much more rapid as the feathers cool off quickly and do not burn the fingers of the pluckers.

Evisceration

This is the act of empting the gut contents. Once the feathers have been removed the intestines need tobe removed also. This is done by severing the neck close to the body leaving a flap of skin to close the hole. Through this hole the crop is remove and at the same time the lungs, gizzard, heart and liver are loosened so that they can be removed through the rear of the carcass. The intestine can now be cut free of the body.

Meat Preparation

The amount of meat on chicken carcass is so limited that it can easily be consumed by an average family in one meal. To cut chicken carcass into pieces as meat for family use is not a difficult task. First the leg sinews are drawn out from the legs and the legs are cut off below the knee joint. The head and the wings are also removed. The carcass can then be cut into standard pieces as shown below in figure 15.

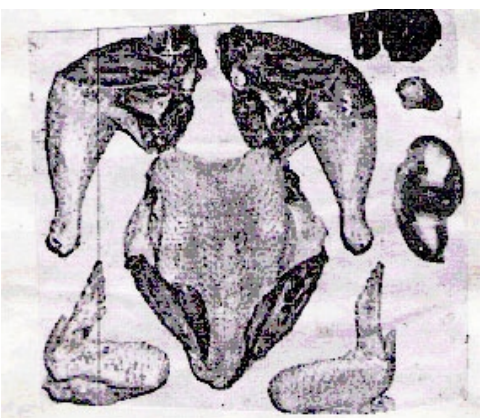

Fig. 15 standard carcass cuts.

However, in rural set up these standard cuts could be further pieced to desirable smaller sizes. The meat pieces can then be made use of into many dishes and delicacies by frying, roasting, boiling etc.

Nigerian dishes with products from local chickens are highly cherished and held with high esteem.

Egg products from local chickens, also command good price and value. They can be eaten boiled or fried by family members while the extra are sold in open markets as source of peti-cash and source of ready family income.

RECORD KEEPING

The importance of accurate record keeping in poultry production cannot be over-stressed. However, it is not a common practice among local chicken farmers. The reason is that local chicken production is a rural set-up enterprise with most producers illiterates.

The implication therefore is that, record keeping in local chicken production should not be too elaborate nor complicated. It should however, ensure improved management practices and profitability assessment. An example of such simple record keeping is as shown in table 4 below.

Table 4. Example of Local Chicken Record Keeping.

Local Chicken Performance Record

1. Total number of on-farm birds ——————————
   - Number of cocks ——————————
   - Number of hens ——————————
   - Number of Chicks——————————
2. Total number of eggs laid——————————
   - Number of eggs per clutch——————————
   - Number of clutches per annum——————————
   - Incubation date——————————
   - Hatching date——————————
   - Number of chicks hatched——————————
   - Mortality——————————

Health Record

- Vaccination———————————————————
- Deworming date———————————————————
- Dusting date———————————————————
- Medication date———————— type————————

Expenditure Record

- Cost of foundation stock purchase————————————
- Shelter———————————————————
- Equipment———————————————————
- Feed———————————————————
- Vaccination/medication————————————
- Labour———————————————————

Total———————————————————

Income

- Sales of live chickens———————————————
- Sales of eggs———————————————————

Total———————————————————

PRODUCT MARKETING

Local chicken production is not a market-driven enterprise in Nigeria. The farmer has other socio-cultural reasons for raising the birds. However, the place of local chickens in poultry product marketing is enormous. In rural poultry markets traders commonly refer to and nick-name the local chicken as "Africa never die". This is an expression that stresses the fact that local chicken commands and dominates the poultry product marketing in Nigeria enjoys good sustainability. The demand - supply gap of the products is so wide that market glut is not likely in the nearest future.

Meat from local chickens are on high demand by hotels, restaurants and food canteens. Local chickens are the preferred fowls for religious rituals and native ceremonies in place of exotic broilers. Products marketing hit the pick during festivities such as Christmas, Sallah and other traditional festivals. The price paid per unit weight during this period is usually higher than that of the "Agric chickens". In recent times, demand for local chicken products at the international market is tremendous. The taste uniqueness of the free-range chicken meat has earned it a 'niche' in the international market.

Sales of local chicken in Nigeria market is at the moment not well organised. The farmers are at the mercy of the middle men who collect the products at the farm gate, then sell to the retailers, and from there to the consumers. These retailers are seen on the streets of major cities as hawkers. See Fig. 16 below.

Fig. 16 Sale of live Chickens on streets.

The hawkers also sell these fowls in market places inside cages along with other mini-livestock like pigeons, guinea fowls, ducks etc. The birds are found in these market all year round and are usually sold live.

Roasted Chicken Marketing

Another common sight in local chicken marketing is the roasted chicken spot. In major cities and peri-urban settlements particularly in Northern Nigeria, roasted chicken is delicacy**.** These roasted chicken spots are strategically located where businessmen, civil servants and retired officers come round to purchase for their evening recreational activities.

Saminaka town in Kaduna State is very famous for her roasted chicken trading. Along the major street (Jos road) women in particular and men are seen at the roasted chicken spots selling to travellers who stop-over as well as indigenes. Day and night roasted chicken market is highly rewarding in Saminaka. See Fig. 17 below.

Fig. 17 Roasted Chicken Spot.

The potential for local chicken products marketing is very high. What be done is a deliberate effort to be made to harness both the producers, traders and consumers into functional cooperatives. This is to ensure efficient management and protection of interests of all the stake holders.

TABLE 5 SUMMARY OF IMPROVED MANAGEMENT PRACTICES FOR INCREASE PERFORMANCE.

Constraint	Intervention Practice	Expected Improvement
L ow genetic potential	*select good foundation stock *cull un productive birds *up-grade by cross breeding *A void in-breeding *use dual-purpose birds e.g RIR	*Increase growth rate *High livability *Bigger egg size
Low egg production and poor hatching	*provide egg nest boxes remove egg as they are laid leaving 2-3 eggs only to reduce broodings *Hatch fertile egg with kerosine incubator e.g NVRI-made type	*increased number of egg per clutch. *Higher number of clutches per year.
High chick mortality	*Restrict chicks between 0-5weeks of age raise by artificial brooding *Feed balance ration and provide water during brooding *Provide extra warmth using bush lamp or kerosine stoves	
Poor Nutrition	*Give supplementary feed morning and evening of about55-60 gm/day per chicken *Make clean water available always	*Better growth rate *improve health *Reduce scavenging *Chickens return back to owners Compound
Disease out-break	*Vaccinate birds against New castle and fowl pox disease *deworm birds regularly *Dust chickens against pests *observe good sanitation	*Reduce diseaseout break *increase productivity
High losses due to predators and thiefs	*Shelter the birds at night *keep surrounding clear of bushes *Keep good attention to birds particularly at nights	*Reduce losses *Higher off-take *Higher income

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