LIVESTOCK DEVELOPMENT NOTES: NO. 11

PRACTICAL MANAGEMENT SYSTEMS FOR PERI-URBAN BROILER CHICKEN PRODUCTION

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ABSTRACT

Live chickens fetch high prices in urban markets. How farmers living close to these markets can go about servicing them without oversupplying them with live chickens is discussed. Two examples showing different types of schedules for stocking and selling finished birds are also given.

Key words: broiler chickens, peri-urban, live chicken markets, stocking schedules

INTRODUCTION

With increased mineral and petroleum activities and other services associated with these developments, it is important that the productivity of primary producers be increased and a variety of products should be tailored to adequately cater for the needs of the increasing number of people entering the cash economy.

In both small and large urban areas there is a demand for live birds and fresh eggs. Live birds in particular command very high prices in these areas. Farmers living close to these areas therefore can take advantage of this market. However, it is important that such projects should be well coordinated so that the market is not flooded with live chickens. This article intends to highlight a technique in producing meat chickens which Labu Animal Husbandry Research Centre has tested and found to be appropriate for use in peri -urban areas.

THE PROJECT

Small scale broiler projects when managed correctly should provide *a source of income for people living close to urban areas* and *a good nutritious and acceptable product.*

Housing and stocking

Houses built of native materials are cheap, easy to build and cool for the birds in Papua New Guinea conditions. The bottom part of the wall (to about 50 cm from the floor) of the house is perhaps the most important part of the house. Besides having to be wind-proof so that the birds can be kept warm, it should also be strong enough to keep dogs, pigs and cats out. Experience has shown that losses due to household pets by far exceed the losses due to poor management or diseases. Walls properly constructed from woven bamboos or rows of pitpit can prevent these animals from gaining entry.

The house and the size and number of rooms (see below) required should be planned before the house is erected. These should be planned according to the number of chickens that will be ordered and how often they will be ordered. We have found that best results will be achieved when every 12 birds were allowed 1 m2 floor space (or 0.085 m2 /bird) and 1 m2 for the feeders and waterers. Ideally, an extra room should be set aside for storing the feed.

Deep litter

The deep litter is essentially a bedding provided to soak up the droppings from the birds. Most importantly, it helps to prevent diseases and provide warmth to the chickens. An earth or gravel floor with a 10 to 15 cm thick layer of sawdust, wood shavings or coffee husk is ideal. If the bedding is too thin the deep litter system will not work as well as it should. It is important that after a year, the old litter is removed from the house/rooms and new material put in. The old deep litter is a very good manure and can be used in food gardens.

Feeds and feeding

Because of their rapid growth rates, broilers, or meat chickens, will not grow well if they are not offered the right type of feeds. In a conventional feeding system, the types of feed used are called broiler starter and broiler finisher. Broiler starter is used to feed young chicks, from one to about 21 days of age. Thereafter, the birds are fed broiler finisher ration until they are ready for market (6 - 8 weeks old). However, for small broiler chicken projects (less than 100 chicks), we have found that the birds will still do well when using broiler finisher only. The only thing is to ensure that until the young chicks reach 18 days of age, all the finisher pellets have to be broken into small pieces before feeding. This is because young chicks have small beaks and therefore cannot eat pelleted feed. Feed must be available all the time. This is the only way the chickens will grow quickly.

One meat bird will have eaten about 4.0 kg of feed by the time it is ready for market. Since feeds are usually bagged in 50 kg lot, one bag can cater for every 12 chickens. The feed must be available at the project site when the chickens arrive. Feed troughs constructed from bamboo are cheap. A bamboo trough measuring 48 cm in length will provide enough feeding space for 12 birds. Young chickens cannot eat or drink from large troughs, so smaller size troughs should be provided.

Drinking water

If the chickens can drink every time they are thirsty, they will grow well. But, if at any stage of their growth there is a shortage of drinking water, the birds will not do well; many will stay small, light or may even die. Because of this, ensure that the project is located near a creek or is sufficiently equipped with tanks to store and supply water.

Bamboo makes very good waterers. To prevent young chickens falling in the water put some stones in the troughs so that the stones are just level with the water. If the chickens jump in the trough, they will stand on the stones and will drink between them. Remove the stones after two weeks. After 4 weeks, it is necessary to raise the water troughs from the ground by tying the troughs to the side of the walls with wire or rope. Make sure the waterers are not too high and all the chickens can reach the water and take a drink. Clean the waterers regularly, and minimize spillage.

Brooding

Young chickens demand special care and warmth during the first two weeks of their life. The process involved in providing such type of care is called brooding. One of the best methods of brooding chicks in rural areas is as follows.

- In the big chicken house, construct a small room of 1 to 2 m2 area with wind -proof walls. The walls must be about 50 cm high. Cover half of the room with jute bags or woven bamboos.
- Find an empty carton and make a few holes in it. A tin fish carton is enough to accomodate 20 chicks, and a beer carton 15 chicks.
- During the day leave the chicks in the small room with feed and water.
- During the night put the chicks in the box and close it. Leave the box in the small room or if the nights are cold bring the box into the house where people sleep.
- In the morning, open the box and put the chicks back in the room.
- Do this until the chicks can fend for themselves, at about 2 weeks of age.

Ordering chickens

For a broiler chicken project, order only broiler chickens - no other type of chickens will be successful. Ask that the chickens are vaccinated against Fowl Pox. It will cost a little bit more, but this will help protect them from catching the disease.

When ordering young chicks, order the number of chickens which can be easily sold within a week or two. Experience has shown that it is difficult to sell more than 20 chickens in a week at the project site. One of the common mistakes many people tend to make is to order 50 to 100 chickens at one time. When the birds are ready for market, they find that they cannot sell them quickly, often, having to keep them for a further 2 to 5 weeks before all the birds are sold. By then, the feeds have been used up and the birds start losing weight or die. Some growers buy more feed merely to keep the birds alive which results in a loss.

EXAMPLE 1: A PROJECT PRODUCING 30 CHICKENS EVERY FORTNIGHT (Lowlands)

Housing and stocking schedule

Thirty chickens need 3 m^2 + 0.5 to 1.0 m^2; ie. a floor space of 3.5 to 4.0 m^2 is needed. Chickens will arrive every fortnight and will be ready for market at 7 weeks of age. Five rooms, each measuring 2.5 m x 1.5 m are required plus one extra room (1 m x 1.5 m) for storing feed and the other for the brooder (1 m x 1.5 m). See Figure 1 for the layout of the rooms of the house. The feed room and the brooder are small and therefore can fit in one normal size room.

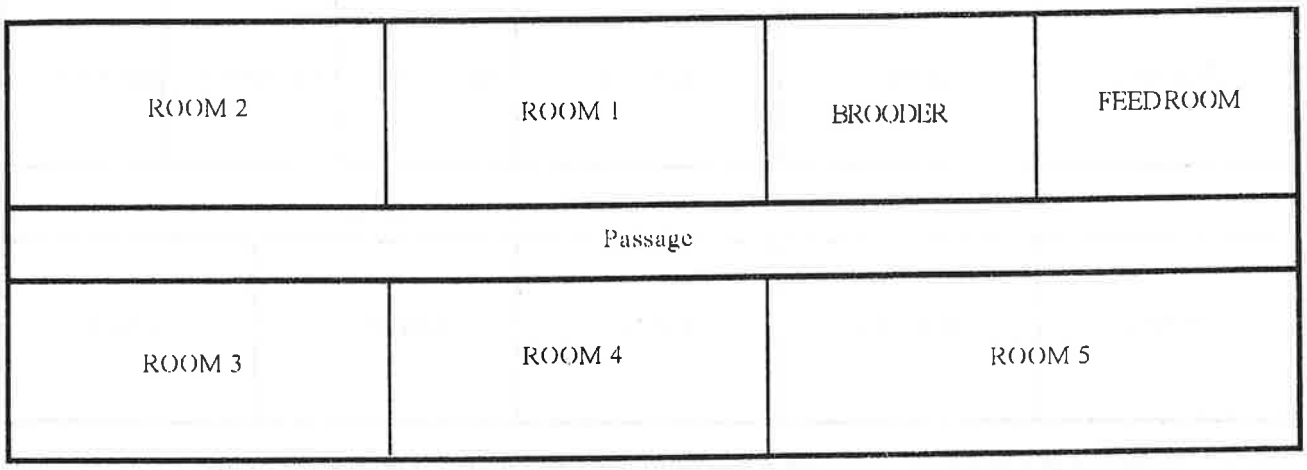

Figure 1. **Diagram of a house to cater for a 30 chicks/batch/fortnight stocking schedule**

Placing of chickens at the begining of week

1	Chicken Batch No.1 in Brooder
3	Chicken Batch No.1 in Room 1, Chicken Batch No.2 in Brooder
5	Chicken Batch No.2 Room 2 , Chicken Batch No.3 in Brooder
7	Chicken Batch No.3 in Room.3, Chicken Batch No.4 in Brooder
8	Start Selling Chicken Batch No.1
9	Chicken Batch No.4 in Room.4, Chicken Batch No.5 in Brooder
10	Start Selling Chicken Batch No.2
11	Chicken Batch No.5 in Room.5, Chicken Batch No.6 in Brooder
12	Start Selling Chicken Batch No.3
13	Chicken Batch No.6 in Room.1, Chicken Batch No.7 in Brooder, etc.....

Budget for every 30 chicks-batch (based on Lae prices and may fluctuate)

Mortality: 10% or three chickens from each batch of 30 chicks

30 chickens at 85t/chick	=	K25.50
3 bags of feed at K22/bag	=	K66
Transport of feed at K2/bag	=	K6
Total	=	*K97.50*
Sale: 27 chickens at K5.00 each	=	K135
Profit: K135 less K97.50	=	*K37.50 per fortnight*

Note that if the demand exceeds production, always sell the heaviest birds (usually males) in the 6 week old groups and save on the cost of feed.

EXAMPLE 2: A PROJECT PRODUCING 20 CHICKENS A WEEK (Lowlands)

Housing and stocking schedule

Twenty chickens need 2 m^2 + 0.5 to 1.0 m^2 ; ie. a floor space of 2.5 to 3.0 m^2 is needed. Chickens will arrive every week and sold when they are 7 weeks old. Eight normal rooms (2 m x 1.5 m), one feed store room (2 m x 1.5 m) and a normal room to accomodate 2 brooders (1 m x 1.5 m/brooder) or, a total of 10 normal rooms will be required (see Figure 2).

ROOM 3	ROOM 2	ROOM 1	FEEDROOM	BROODER 1	BROODER 1
Passage					
ROOM 4	ROOM 5	ROOM 6	ROOM 7	ROOM 8	

Figure 2: **Diagram of a house to cater for a 20 chicks/batch/fortnight stocking schedule**

Placing of the Chicken at
the begining of week

1	Chicken Batch No.1 in Brooder.1
2	Chicken Batch No.2 in Brooder.2
3	Chicken Batch No.1 in Room.1, Chicken Batch No.3 in Brooder.1
4	Chicken Batch No.2 in Room.2, Chicken Batch No.4 in Brooder.2
5	Chicken Batch No.3 in Room.3, Chicken Batch No.5 in Brooder.1
6	Chicken Batch No.4 in Room.4, Chicken Batch No.6 in Brooder.2
7	Chicken Batch No.5 in Room 5, Chicken Batch No.7 in Brooder.1
8	Sell Chicken Batch No.1, Chicken Batch No.6 in Room.6, Chicken Batch No.8 in Brooder 2
9	Sell Chicken Batch No.2, Chicken Batch No.7 in Room.7, Chicken Batch No.9 in Brooder 1.
10	Sell Chicken Batch No.3, Chicken Batch No.8 in Room.8, Chicken Batch No.10 in Brooder 2
11	Sell Chicken Batch No.4, Chicken Batch No.9 in Room.1, Chicken Batch No.11 in Brooder 1
etc.....	

Note that if the demand exceeds production, always sell the heaviest birds (usually males) from 6 weeks old groups and save on the cost of feed.

Budget for every 20 chick-batch (based on Lae prices and may fluctuate).

Mortality: 10% or two (2) chicken from each batch of chicks

20 chickens at 85t/chick	=	K17
2 bags of feed at K22/bag	=	K44
Transport of feed at K2/bag	=	K4
Total	=	*K65*
Sale: 18 chicken at K5 each	=	K90
Profit: K90 less K65	=	*K25 (K50 per fortnight)*

HEALTH AND DISEASE CONSIDERATIONS

Because there is a constant flow of birds in and out of the project, the danger of disease outbraeks (e.g. coccidiosis) is relatively high. However, as we have experienced, such a situation will arise if:

- the deep litter is not adequately managed e.g. not thick enough (less than 10 to 15cm)
- the house is not adequately ventilated
- no control on people going into the sheds
- poor standard of bird management
- infected chicks are used
- the sheds are continously stocked without a break.

Poor management of the deep litter is by far the main cause of disease problems. Spillage of water tends to be the main source, and therefore should be kept to minimum. Always add a thin layer of new bedding material (e.g. wood shavings) over the old one when the new batches of chicks are stocked, and remove the hard ôcakedö litter. After a year of production the old litter should be removed and the sheds allowed to remain empty for a month or two. These measures should minimize any chance of diseases occuring.

FURTHER READING

Bakau, W.J.K (1985). Some suggestions for improving management on small semi-commercial broiler projects. *Harvest* 11: 71 -74.