# BULL

# AND

# RAM FATTENING

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## INTRODUCTION

As a modification of an intensive system of animal production, fattening of bulls and rams in a feedlot is one of the best options of increasing animal protein supply. Meat production from cattle and sheep and even goats in Nigeria is almost entirely extensive with low input. This traditional method of domestic meat animal production results in low productivity due to the fact that animals receive the bulk of their nutrition from overgrazed ranges which are poor in quality. Furthermore the size of such ranges is declining due to their use for industries including new agricultural development projects devoted to especially crop production. The traditional system of meat animal production cannot thus be expected to meet the future demand for beef and mutton in particular and animal protein in general. As an economic way of feeding young cattle and sheep whereby the yield of edible carcass is increased by 30-40 percent during a short period fattening offers a rapid means for enhancing productivity. Thus fattening has a role to play in a situation where range cattle are so under-nourished that a short period on high level of nutrition is necessary to increase their productivity and to prepare them for market. The feedlot system therefore is complimentary to the existing system of raising animals on range and not one of substitution of a new technology for an existing one. The aim of this bulletin is to discuss bull and ram fattening using feeding and management options that can be applied at the level of large and small scale producers. Discussion will focus on capital, housing and accommodation, purchase of animals, feeds and feeding.

**CAPITAL**

By capital is meant money with which to start the business of fattening. Such money should be available for purchase of animals and construction of buildings or structures for handling of animals; for purchase of equipment and provision of feeds and for hiring labour. Money can be loaned from banks or friends if the operator of a fattening project cannot produce it himself.

**HOUSING AND ACCOMODATION**

(a) Bulls

**A typical bull without fattening is shown in Figure 1**

Fattener bulls should be accommodated in a fenced feedlot without roof. The fence should be built with strong wooden or iron poles. Ideally each bull should be allowed a space of 25.6cm$^2$ and feeding space of 2.53m. The feedlot should be divided into pens depending on the number of animals. For example, a feedlot designed to contain 300 animals could be partitioned into six (6) equal pens with the animals equally distributed in the pens. An inexpensive accommodation for three (3) bulls similar to the one used by farmers under the Small Holder Fattening Scheme organized by the National Livestock Project Department can be built with a fairly

strong wire gauze and strong wooden poles within a farmer's premises In it the bulls are fed concentrate in the morning and evening with grazing in between. The scheme was designed to introduce farmers to small scale fattening of large animals as an enterprise and to develop appropriate fattening techniques. Similar accommodation for a few rams and bucks fattened for Sallah or Christmas take approximate design as these animals are managed and fed around homestead.

(b) **Rams:**

**Figure 2 shows a typical ram before fattening**

Construct simple and inexpensive housing for your fattener animal. Housing could be made of mud bricks or cement blocks with plenty of ventilation. Corrugated iron sheet or thatch could be used for roofing the house can be in the shape of a poultry type, divided into pens with space allowance of $1m^2$ per animal. Adequate ventilation is necessary for escape of odor that is usually associated with sheep and goat pens. The house should be fitted with designs to hold racks for hay and salt lick where necessary.

**EQUIPMENT**

You need simple equipment for your fattening operation and they include troughs for feed and water, and hay racks. Construct the water and feed troughs from cut half drum as they cannot be easily damaged; strong plastics and metal buckets or basins can be used for feeding and watering fatteners (Figure 3). In a large scale fattening operation, feeders and waterers can be made of concrete since they last much longer than cut drums and buckets. A feedlot designed to turn out about 300 animals per period must necessarily need concrete feeders and waterers. Other equipment needed for such large enterprise include:

- spray race or dip for routine spraying or dipping of animals against external parasites.
- weighing bridge (for bulls) or other weighing of animals during sales as the need arises.
- A loading and unloading area especially for bulls.
- A treatment crush.
- An overhead water tank
- An office
- Stores for feeds
- A quarantine which should be removed to some distance from the feedlot Strong plastic basin.


**Figure 3. Containers for measuring and mixing feed**

## SELECTION AND PURCHASE OF ANIMALS

Bulls and rams selected for feedlot should be lean and healthy. This is because they are less expensive for reason of their physical appearance and are capable of responding fast to good feeding within the fasting period as well as make good returns better than animals that are well fed at purchase time. Such lean animals principally lay down more of marbling (palatable) fat found within intra and intramuscular areas than
sebaceous fat which no one wants. Breeds of bulls. Rams and bucks adapted to an ecological zone should be preferred for fattening.

Purchase of fattener animals especially for large scale operation should be at terminal markets, preferably during the middle of dry season, when feed is scarce and farmers are willing to let go their animals for lack of feeds.

A fattening programme involves finishing young animals in a restricted area where feed and water can be provided. Age range for fattener bulls should be between 2 to 2 $^{1}/_{2}$ years or 180-200kg weight. Rams for fattening should be between 1$^{1}/_{2}$ to 3 years and weigh between 22 to 30kg for the large indigenous breeds (namely Balami, Uda and Yankassa) and 16 to 20kg for the small or dwarf breeds of the forest zone.

## CASTRATION

Young bulls for fattening may or may not be castrated in Nigeria. But ram lambs and young bucks for fattening should be castrated within three (3) months of birth. Such animals on fattening look smoother and bigger. Rams for religious festivals need not be castrated for it is forbidden. In the United States of America,

steers (castrated young bulls) are preferred for feedlot while in the United Kingdom, young uncasturated bulls are preferred because of their faster growth rate, they are said to have better feed conversion efficiency and heavier carcass (trunk of slaughtered animal without head, Limbs or offal).

**Quarantine For Animals:**

Newly purchased fattener animals should be guarantined for about 30 days during which they are given prophylactic treatment with coccidiostat and antihelmintics. The animals also should be dipped or sprayed against ticks and other ectoparasites. In both castration and dipping, a veterinarian should be consulted.

**FEEDS AND FEEDING**

Feeds for feedlot animals include roughages, concentrates, water, minerals and vitamin premix since ruminants including bulls and rams utilize roughages to a large extent in meeting their nutrient requirements. Sources of roughages include grass and legume hays, cereal crop residues, corn cobs, sugar cane baggasse etc.

Under this feed regime about 3 bulls can be fattened under the Small Holder Fattening Scheme. Fattener bulls are fed one of the following concentrate ration options. (Table 1), plus grazing or hay.

**Table 1: RATION OPTIONS**

| | FEED | QUANTITY PER DAY (KG) |
|---|---|---|
| i | Molasses | 1.5 |
| | Cottonseed cake | 2.0 |
| | Grazing | 3.5 |
| ii | Wheat bran | 3.0 |
| | Molasses | 1.0 |
| | Grazing | All day |
| iii | Groundnut cake | 0.5 |
| | Molasses | 1.5 |
| | Wheat bran | 1.0 |
| | Grazing | 3.3 |

Fattener bulls fed any of the rations above should be ready for market within 120 days. Groundnut cake is very high in protein and energy and for this reason is expensive. Farmers must exercise care to feed their animals accurately so that the concentrate is not wasted. Groundnut cake, wheat bran and molasses must be fed mixed together and offered to each animal half in the morning and half in the evening.

If legume hay is available enough to replace grass hay or grazing, it should be fed at the rate of 2.3kg per animal per day.

Ram and bucks for fattening can be fed 1½kg legume hay only per head daily. The ration should be divided into two parts and

fed in the morning and evening. When this is not available, rams or bucks can fatten well on concentrate mixtures under ration options mentioned later in this write-up.

**Mixing feed for animals**

Concentrates such as cereals, oilseed cakes, minerals and vitamin premix are sources of feed for fattener animals. Because energy supply from roughages is usually insufficient for feedlot animals, the feeding of concentrates becomes necessary. A concentrated to roughage ratio of 40:60 is recommended for fattening; a ratio of 60:40 is more qualitative. A fattener bull receiving about 6.5kg feed daily will be ready for market in about 90 days.

Large scale fattening operation has always involved the use of maize or guinea corn as a major source of energy. However these cereal grains are staple food for man; it is unusual for maize or guinea corn to be used as ruminant animal feed except in very restricted quantities. For this reason recent investigations into development of rations for feedlot animals has tended to eliminate the use of maize or guinea corn as can be seen from some of the ration options shown later in this write-up.

Fig 4 Fattened Bull

**Fig 5  Fattened Ram**

## WATER

Regular supply of clean and cool drinking water is important because of the role of water in the digesting of food, absorption and transportation of nutrients in the body of the animal. Water should be given free choice to feedlot animals. A bull requires not less than 100 liters and ram or buck not less than 20 liters of water per day, especially during dry season.

## FEED HANDLING

Feeds would be properly handled in order to avoid wastage. Hay should be stored in barns as soon as it is purchased or produced to avoid unnecessary exposure to heat and rain to discourage fermentation. Concentrates also should be properly handled and stored to eschew termite and rodents attack. Poor feed handling reduces the nutritive value of feed.

## RATION OPTIONS

Depending on his economy, a feedlot operator can choose the ration to be fed to his animals from the following mixtures shown below. The options chosen also depend on the feed ingredients available in an area. Whichever ration mixture is chosen if properly managed, is capable of encouraging similar rapid weight gain in the animal.

## Table 2: RATION OPTIONS FOR BULL FATTENING

| FEED | | QUANTITY (% or kg) |
|---|---|---|
| I | Cottonseed cake | 2.0 |
| | Wheat Offal | 1.0 |
| | Salt lick | 1 block |
| | Hay | Free choice (3.3kg) |
| Ii | Cottonseed cake | 2.0 |
| | Molasses | 1.5 |
| | Grazing or Hay | Free choice |
| | Salt lick | 1 block |
| Iii | Wheat bran | 3.0 |
| | Molasses | 1.0 |
| | Hay or Grazing | Free choice |
| | Salt lick | 1 block |
| Iv | Groundnut cake | 0.5 |
| | Molasses | 1.5 |
| | Wheat Offal/bran | 1.0 |
| | Hay | Free choice |
| V | Groundnut cake | 0.5 |
| | Cottonseed cake | 0.66 |
| | Wheat offal | 1.0 |
| | Hay | Free choice |
| Vi | Corn (Maize) | 12.67 |
| | Cottonseed cake | 14.83 |
| | Molasses | 10.0 |
| | Bonemeal | 1.75 |
| | Salt | 0.50 |
| | Premix | 0.25 |
| | Hay | Free choice |
| Vii | Maize | 48.18 |
| | Palm Kernel Meal | 44.52 |
| | Bonemeal | 1.55 |
| | Molasses | 10.0 |
| | Salt | 0.5 |
| | Premix | 0.25 |
| | Hay | Free choice |
| Viii | Maize | 22.08 |
| | Palm Kernel Meal | 66.26 |
| | Molesses | 10.00 |
| | Bonemeal | 0.91 |
| | Salt | 0.50 |
| | Premix | 0.25 |

**Table 3: Ration Options For Ram And Buck Fattening**

| | FEED | QUANTITY (%) |
|---|---|---|
| i | Wheat offal | 47 |
| | Cottonseed cake | 20 |
| | Molasses | 20 |
| | B D G | 10 |
| | Bonemeal | 1.5 |
| | Premix | 1.0 |
| ii | Maize | 25 |
| | Cottonseed cake | 25 |
| | Wheat Offal | 30 |
| | B D C | 20% |
| iii | Wheat offal | 40 |
| | Cottonseed cake | 25 |
| | B D C | 25 |
| | Molasses | 10 |

Calculation of Ration Components and Feeding:

If a farmer intends to mix 100kg of concentrate feed which is to contain:-

| | |
|---|---|
| Wheat offal | 40% |
| Cottonseed cake | 25% |
| B D G | 35% |
| Molasses | 10% |

He should assume that the quantity of each component to be included are by the percentages shown thus:

| | | |
|---|---|---|
| Wheat offal (40%) | = | 40 parts or 40kg |
| Cottonseed cake (25%) | = | 25 Parts or 25kg |
| B D G (35%) | = | 35 parts or 25kg Molasses (10%) |
| | = | 10 parts or 10kg |
| | | Total 100kg |

All the components should be mixed together on a clean cement floor or mat or similar materia0l. The mixture should be

bagged, stored and fed as necessary. An animal should receive between 2.5% to 3.0% of its body weight in terms of its daily feed requirement. For example, if a bull is taken for fattening at 200kg body weight, its daily ration of concentrate and roughage should be calculated based on the above range of percentage depending on the ability of the animal to consume feed. For heavy eaters, the quantity of feed should be calculated upwards to 3.0% of the animals body weight. Thus based on 3.0% of body weight, the quantity of ration for a 200kg bull will be calculated thus:-

$$\frac{3.0}{100} \times \frac{200}{1} = 6.0\text{kg}$$

Now from the 40:.60 concentrate to roughage ratio discussed earlier, we can calculate the quantity of concentrate or roughage in the 6.0kg feed as follows:-

Sum of ration = 100

Concefntrate = $\frac{40}{100} \times \frac{6}{1}$

= 2.4kg

Roughage = $\frac{60}{100} \times \frac{60}{}$

= 3.6kg

Thus the bull's daily ration should be made up of 2.4kg of concentrate and 3.6kg of roughage. One half of the concentrate should be fed in the morning and another half in the evening. The usual Practice is to feed the roughage hay free choice so that in the end the animal will do selective feeding and would have consumed about 3.6kg of hay per day.

However, feedlot animals are usually fed together, and for this reason the amount of concentrate or hay is calculated based on the number of animals to be fed and such amount of feed is provided and put together accordingly.

**MARKETING WEIGHT**

The optimal marketing weight for feedlot bulls is 300kg and for rams is 35kg. Additional weight beyond this tends to encourage deposition of subcutaneous fat. Dressing percentage is between 50 – 51%. Ideal careass yield is high quality lean meat with less waste.

**PROFIT MOTIVE**

Profit motive is an important driving force for any successful fattening operation. For this and other reasons a decision should be made on the choice of between home grown and purchased feeds for the operation. A feedlot operator may decide in advance to partially produce his own feeds. Generally net returns are higher in feedlots that produce their own feeds – grain and roughage

**.RECORD-KEEPING**

Record-keeping is one of the pillars of good fattening scheme. A fattening record gives account of the fatness of feedlot animal. It also enables the farmer to know the efficiency of meat production, i.e. how much kilogram of feed produces a kilogram of meat. For instance, 6.5kg feed intake gives a kilogram of beef.

A record sheet should contain information on the date the fattener the animals enter and leave the feedlot, the regular weighing dates and weights obtained, as well as the amount of feed on offer. In a simple record shown in the Table below, the feedlot operator should enter fattening data in the appropriate column.

**TABLE 5 FATTENING RECORD SHEET**

| Bull, ram, Buck Date in… | Initial Wt. (kg) | Deed on Offer (kg) | | Final Wt. Kg | Fattening Period (days) | Remarks |
|---|---|---|---|---|---|---|
| | | Hay (kg) | Conc. (kg) | | | |
| Bull: 1-3-96 | 250 | 3.6 daily | 2.5 daily | 295 | 105 | Fair |
| Ram: 7-3-96 | 20 | 800g daily | 150g | 34 | 95 | " |

## MANAGERIAL SKILL

Managerial skill consists of the facility to harness all the inputs (already discussed) for successful fattening operation. It involves the use of one's discretion to carefully and ably take the correct decision at the right time so as to:

i Select the right type of fattener animals.
ii Set up the right type of accommodation or housing
iii Provide animals with good and adequate feed in store.
iv Fatten the animals within the recommended period.
v Provide market and also wisely dispose of fattened animals.

## MAINTAINING A SOUND FLOCK OF FATTENER ANIMALS

The following preventive measures should be borne in mind:-

i. Have preference for animals from within the ecologic zone.

ii Select and purchase lean animals that will easily respond to fattening

iii Avoid sick animals

iv Provide the right type of feed

v De-worm animals on arrival

vi Maintain high level of sanitation

vii Purchase animals of the correct age.

viii Avoid animals with physical defects such as lameness, blindness and malformation

## Budget for 4 Cattle Fattening Schemes

Estimated costs and Returns for 4 animals considered as a good size for small scale farmers to handle are undertaken on Table 1 below.

**Table 1: A Budget for Fattening 4 Cattle in 120 days.**

| Items | | Description | Quantity Price | Unit N | Amount |
|---|---|---|---|---|---|
| a) | Bull | Healthy and Attractive | 4 | 800 | 3200 |
| b) | Feeds | | | | |
| | Cottonseed Cake | At 1.75 bag/cattle/ 120 days | 7 | 22 | 154 |
| | Mollasses | At 0.75 drum/cattle | 3 | 34 | 102 |
| | Wheat bran | At 2.5 bag/cattle | 10 | 3 0 | 300 |
| | Salt lick | At a block for one cattle | 2 | 18 | 36 |
| c) | Housing and Equipment | | | | |
| | Housing | Improvised | 1 | 50 | 50 |
| | Feeders/ Drinkers | Empty druns to be used | 2 | 20 | 40 |
| d) | Medical Care | Drugs, antibiotics germicide | 4 | 10 | 40 |
| e) | Tech. Support c harge | At N50/cattle | 4 | 50 | 200 |
| f) | Miscellaneous Expenses | At N15/cattle | 4 | 15 | 60 |
| g) | TOTAL OPERATIONAL EXPENDITURE N4,282.00 | | | | |
| h) | Expected fattening weight after 120 days on the average = 270kg | | | | |
| i) | Anticipated selling price of N5/kg live weight | | | | |
| g) | GROSS RETURNS FOR 4 CATTLE (4 x 270 x 5 ) = N5,400.00 | | | | |
| k) | Farmers Return to labour, Management and capital use (J – G) = N1,118.00 | | | | |

**SOURCE: NAERLS-BANK OF THE NORTH PROJECT, 1987**

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