

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

U of K

Faculty of Animal Production
Msc : Tropical Animal Production

Seminar about:
characterization of production system
of beef fattening farms in
Khartoum state

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INTRODUCTION

- ◎ Beef continues to play a major role in the global food balance of highly developed countries and its elimination from the modern human diet seems unlikely (Pisulewski et al. 2001).
- ◎ In recent years food has been viewed not only as a source of nutrients but also in terms of its effects on human health (Belisle et al. 1998).
- ◎ The increasing consumer demand for high-quality beef led breeders to adopt cattle breeds suitable for fattening, and to use technologies for rearing and feeding young slaughter cattle (Belisle et al. 1998).
- ◎ Sudan western Baggara cattle is the major stock of meat production found in Khartoum State and so it is the major beef producing cattle in the country. They provide the bulk of meat consumed in northern Sudan and contribute considerably in export trade of beef cattle (AOAD, 1974).

Feedlots farms for fattening of meat cattle have existed for over 30 years around big cities. Animals, mainly beef cattle, are brought on the hoof from western Sudan and fattened in Khartoum. The most of these farm owned by private sectors, while few of these farms were governmental. The studies on these farms are very few and neglected and the most of conducted studies related to feeding and health, but no researches concerning analysis and characterization of production systems of feedlot farm. The present work was carried to study production system of fattening feedlot farms in Khartoum State, with following objectives:

- To describe and define the production system of cattle fattening farms
- To compare and contrast between modern and traditional fattening farm
- To define the production constraints and the strength and weakness of fattening farms in Khartoum State.

MATERIAL AND METHOD

THE STUDY AREA

STUDY SITE

- ◉ The study site was located at Khartoum State in Sudan during the period between march to June 2014. In addition to a field survey using structured questionnaire to investigate farms management practice.
- ◉ The surveyed farm were distributed in cities of the State Khartoum, Khartoum north, Omdurman
- ◉ The Khartoum State lies within semi arid zone between latitude 15° and $16^{\circ} 45'$ North and Longitude 31° and $34 40'$ East.

ECOLOGY CLIMATE:-

The climate has an important influence on the nature of natural vegetation, characteristics of soil, and the crops that can be grown and hence the type of farming that can be practiced.

There are three marked seasons namely, winter which starts in November and ends in February, dry summer which extended from July to October.

Humidity is relatively high in wet season, and relatively low in the dry summer.

Temperature (maximum temperature is over than $37,1^{\circ}$ - 48° in the dry season and minimum temperature is 6° - 15° in January).

Human population:-

The estimate of human population in Khartoum state in 2009 is 5,743,210 persons.

Data collection:-

Structure of questionnaire:-

- ◎ The questionnaire was designed to collect information from owners of fattening farms in Khartoum .
- ◎ The questionnaire includes information about type of cattle, feeding and husbandry practices, housing, source of costs, record keeping, prevalent diseases, veterinary and extension services, means of transportation, marketing, weakness and strength of system and serious constraint faced production.

- A preliminary survey was conducted where farm owners were interviewed to check out their acceptance to give information about their herd. The purpose of the study was explained to them clearly.
- Fifty one owners were directed interviewed (Table 1), some information were collected through observation.

Table 1. The regions selected for the survey

State	Regions	Number of owners
Khartoum	Jebaj awliaa, Tayba Alhasanab	3
Khartoum North	Alseleit, Umdrewa, West Nile (Alkeriab), Eid Babeker, Helat Koko, Industrial area and Alkadrow.	24
Omdurman	Almowaleh, Islamic Omdurman University and Karrey.	24
Total		51

Statistical analysis:-

- ❑ The data obtained from the questionnaire were subjected for analysis using SPSS computer program (version, 17).
- ❑ The surveyed farms were classified into two groups as modern and traditional farms.
- ❑ The chi-square for independence was performed to verified the association between studied parameters and type of farm.
- ❑ The results were presented as descriptive statistics (means, Standard deviation and frequencies).

Results

Table 2 Division of farm into managerial units and section

Do you divide your farm into managerial units	Type of farm		Total
	Modern	Traditional	
Yes	83.3	5.1	23.5
No	16.7	94.9	76.5

($\chi^2=31.19$; $p<0.01$)

Table 3 Problems related to labors

problem	Type of farm		Total
	Modern	Tradition	
Yes	50	38.5	41.2
No	50	61.5	58.8

($\chi^2=0.50$; $p>0.05$).

Table 4 Separation of herd in pens and type of material used

Material used in pens and housing	Type of farm		Total
	Modern	Traditional	
Unfixed (Traditional)	16.7	20.5	19.6
Fixed	83.3	33.3	45.1
Without	0	46.2	35.3

$(\chi^2=10.70; P<0.01).$

Table 5 Specialization of the farm

Purpose	Type of Farm		Total
	Modern	Tradition	
Fattening	83.3	71.8	74.5
Multipurpose	16.7	28.2	25.5

($\chi^2=0.64$; $P>0.05$).

Table 6 reasons of herd division

Reasons	Type of farm		Total
	Modern	Traditional	
Easy management	36.4	65.2	55.9
Different weight	27.3	34.8	32.4
Pen capacity	18.2	0	5.9
All together	18.2	0	5.9

($\chi^2 = 9.60$; $P < 0.05$).

Table 7 Factors determined fattening period

Depending	Type of farm		Total
	Modern	Traditional	
Breed	8.3	0.0	2.0
Initial weight	66.7	74.4	72.5
Breed & initial weight	25.0	17.9	19.6
Age	0.0	7.7	5.9

($\chi^2=4.48$; $P>0.05$).

Table 8 Recording and keeping records

Record	Type of farm		Total
	modern	Traditional	
Yes	91.7	25.6	41.2
No	8.3	74.4	58.8

$(\chi^2=16.52; P<0.01)$

Table 9 Paying taxes during selling and buying

Do you pay taxes in selling	Type of farm		Total
	modern	Traditional	
Yes	36.4	20.5	24
No	63.6	79.5	76

$(\chi^2=1.18; P>0.05)$.

Table 10 Problem found and susceptible losses

Tax	Type of farm		Total
	Modern	Traditional	
Yes	16.7	46.2	39.2
No	83.3	53.8	60.8

($\chi^2=3.35$; $P>0.05$).

Table 11 Cattle purchasing markets

Market	Type of farm		Total
	Modern	Tradition	
Almoilh market	75	38.5	47.1
Alobeid market	0	7.7	5.9
Others	8.3	23.1	19.6
Multi markets	16.7	30.8	27.5

($x=5.21$; $P>0.05$).

Table 12 Importance of dealers and realtors in selling process

Selling through dealers	Type of farm		Total
	Modern	Tradition	
Yes	83.3	76.9	78.4
No	16.7	23.1	21.6

($\chi^2=0.22$; $P>0.05$).

Table 13 Cattle for fattening available in certain season_n

Do you found cattle in certain season	Type of farm		Total
	Modern	Traditional	
Yes	83.3	79.5	80.4
No	16.7	20.5	19.6

($\chi^2=0.09$; $P>0.05$).

Table 14 Problems associated with cattle transportation

Did you face any problem during Transportation	Type of farm		Total
	Modern	Tradition	
Yes	41.7	35.9	37.3
No	58.3	64.1	62.7

($\chi^2=0.13$; $P>0.05$).

Table 15 Animal were sold in particular markets

Do you sold in particular market	Type of farm		Total
	Modern	Traditional	
Yes	75	79.5	78.4
No	25	20.5	21.6

($\chi^2=0.11$; $P>0.05$).

Table 16 Do you weighted their cattle frequently

Do you weigh your animals?	Type of farm		Total
	Modern	Tradition	
Yes	72.7	2.5	17.6
No	27.3	97.5	82.4

($\chi^2=29.278^a$; $p<0.05$).

Table 17 Quantity of ration was given to animals

Did you gave ration according to weight of animal	Type of farm		Total
	Modern	Traditional	
Yes	100	7.7	29.4
No	0	92.3	70.6

($\chi^2=37.66$; $P<0.01$).

Table 18 Using minerals as additives

Do you use mineral as additive	Type of farm		Total
	Modern	Tradition	
Yes	70	15.4	26.5
No	30	84.6	73.5

($\chi^2=12.18$; $P<0.01$).

Table 19 using vitamins as additives

Do you used vitamin as additives	Type of farm		Total
	Modern	Traditional	
Yes	60	35.9	40.8
No	40	64.1	59.2

($\chi^2=1.91$; $P>0.05$).

Table 20 New rations gave gradually

Do you give new ration gradually	Type of farm		Total
	Modern	Traditional	
Yes	75	92.3	88.2
No	25	7.7	11.8

($\chi^2=2.65$; $P>.05$).

Table 21 Using balanced feed (ration)

Do you use balanced ration	Type of farm		Total
	Modern	Traditional	
Yes	83.3	20.5	35.3
No	16.7	79.5	64.7

($\chi^2=15.86$; $P<0.01$).

Table 22 Feeding is production constraint

Do you think that the feeding is constraint	Type of farm		Total
	Modern	Traditional	
Yes	41.7	82.1	72.5
No	58.3	17.9	27.5

($\chi^2=7.52$; $P<.05$).

Table 23 Accessibility of drinking water during day

Availability of water during a day	Type of farm		Total
	Modern	Tradition	
Yes	91.7	56.4	64.7
No	8.3	43.6	35.3

($\chi^2=5.00$; $P<0.05$).

Table 24 Sources of veterinary services

Source of service	Type of farm		Total
	Modern	Tradition	
Governmental	0	2.6	2
Private veterinarian	83.3	46.2	54.9
Drug sellers & suppliers	8.3	48.7	39.2
Other	8.3	2.6	3.9

($\chi^2=7.21$; $P>.05$).

Table 25 Vaccination against diseases

Do you Vaccinate against disease	Type of farm		Total
	Modern	Tradition	
Yes	75	69.2	70.6
No	25	30.8	29.4

($\chi^2=,147$, $p>.05$).

Table 26 using insecticide

Do you used insecticide	Type of farm		Total
	Modern	Tradition	
Yes	75	48.7	54.9
No	25	51.3	45.1

($\chi^2=2.56$; $P>0.05$).

Table 27 using of ivermectin and pendazole against internal parasites

Wormcide	Type of farm		Total
	Modern	Tradition	
Yes	100	87.2	90.2
No	0	12.8	9.8

($\chi^2=1.706$, $p>.05$).

Table 28 availability of extensions services

Counseling service	Type of farm		Total
	Modern	Tradition	
Yes	58.3	15.4	25.5
No	41.7	84.6	74.5

($\chi^2=8.912$, $P<0.01$).

Table 29 suitable age for fattening

Suitable age (years)	Type of farm		Total
	Modern	Traditional	
<1	16.7	20.5	19.6
1-2	25	35.9	33.3
2-3	50	12.8	21.6
≥4	8.3	30.8	25.5

Table 30 Favored cattle breed for fattening

Breed	Type of farm		Total
	Modern	tradition	
Baggara cattle	90.9	72.5	76.5
Tow time	9.1	7.5	7.8
kenana×Fresian	0	20	15.7

($\chi^2=2.610^a$, $p>.05$).

Conclusions:-

Strength points:

- Farmers thought that they have good experiences.
- Some of farmers had governor support.
- Some of farmers thought that they had easier marketing and selling points.
- High profitability of cattle fattening.
- Low of risks.
- Shortage production period (money duration cycle).
- Some of farmers had governor finance.
- Using calves (males) of milk cattle as fattening cattle.

weakness points:

- Farmers don't use weight in calves selling.
- High cost of production inputs.
- Fluctuating of prices from season to season and year to year.
- Sluggishness of selling.
- Seasonality of cattle availability.
- Presents of middlemen.
- Spread of disease in certain zones.
- Competition.

Recommendations:-

- There is need for extension programme on fattening to farmers and formulation of rations on an economic base.
- least cost ration should be encouraged to increase margin of profit.
- availability of permanent farms for farmers whose suffering from instability.
- presents of sufficiency water.
- presents of veterinary and counseling service.