

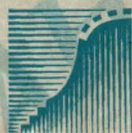
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Volume I

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Olugasa, B.O., Cadmus, S.I. B. and Atsanda, N.N.

Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Ibadan, Nigeria.

ABSTRACT

A major private abattoir and meat processing plant in south-western Nigeria was studied in this article to determine its compliance with control over dissemination of parasitic and microbial diseases from beef to man. To ensure total quality control, a private veterinarian sourced for cattle on farms and supplied these to the abattoir. In addition, a public health veterinarian in government service at the abattoir carried out antemortem tests, postmortem inspection and removal of unwholesome cattle. Diseases such as fascioliasis, tuberculosis, cysticercosis and brucellosis were effectively controlled in this way. Hence, United African Company (UAC) Foods provides wholesome beef to the community.

Key words: abattoir, beef, cattle, farm, quality, veterinarian.

1. INTRODUCTION

1.1 *Definition of beef quality control*

Beef quality control is a system that regulates the measure of extrinsic materials such as chemical residues, toxins, pathogenic microorganisms and putrefied tissues which could be present in cattle meat and are deleterious to human health. The system ensures that these extrinsic materials are reduced to a barest minimum, or are completely eliminated on a guaranteed basis from pieces of meat that could be obtained from slaughtered cattle. Wholesome meat, thus come from good quality control practices¹ and ergonomics.

1.2 *Elaboration on the problem*

In south -western Nigeria, a number of factors would not allow cattle meat quality to be readily guaranteed as wholesome, especially in public abattoirs. These factors include a low degree of dedication of meat inspectors to antemortem and postmortem examination² of cattle, predominance of traditional, yet conservative (non-quality oriented) people in live-cattle trade from farms to abattoirs and slaughter houses, excessive crowd of humans in public slaughter houses (adult people and children picking beef trimmings to feed on), non – payment of compensation on condemned carcasses to cattle suppliers and a high prevalence of beef borne zoonoses, such as fascioliasis, tuberculosis, cysticercosis, salmonellosis and brucellosis. All these factors contributed to existing difficulties in ensuring quality control in beef production.

1.3 *Hypothesis of this study*

Effectiveness in beef quality control in south -western Nigeria can be improved by making some changes at the individual level towards fitting the job to the man for a better person-environment match.¹ Involvement of veterinarians in the production processes will likely make this possible.

1.4 The strategies

Four integrated processes made up these strategies. These include:

- (i) Enrolling capable and available private veterinary practitioners to supply quality cattle to the abattoir.
- (ii) To encourage non-veterinarians that supply cattle to seek veterinary opinion regularly.
- (iii) To identify pathological lesions in cattle at gross and histochemical levels for full screening.
- (iv) To enforce cattle screening compliance through payment of local purchase order (lpo) granted on certified wholesome cattle weight by a public health veterinarian in government service at the abattoirs.

1.5 Justification for ergonomics approach

Experience with public abattoirs in south-western Nigeria indicates that negative human factors were responsible for the neglect of environment and beef quality control practice. Heaps of solid wastes commonly accumulated in most public abattoirs. Traditional cattle traders hardly accept the fact that some cattle diseases are transmissible to people and must be screened and eliminated at all cost. These worksystem problems are also ergonomic problems. Thus, it is necessary to make changes at workforce level to correct the problems.

1.6 Objectives of this study

This study was designed to;

- (i) Determine cattle screening compliance (c) of meat inspectors (c_i), butchers (c_b), laboratory technologists (c_l) and cattle suppliers (c_s), respectively at Marquis factory.
- (ii) Determine liveweights of cattle slaughtered at Marquis factory between 1st October, 1996 and 31st December, 1998, and calculate their monetary worth.
- (iii) Determine reasons for condemning cattle at Marquis factory during the study period.

2. MATERIALS AND METHOD

2.1 Study location

Marquis factory is owned by United African Company (UAC) Foods, Nigeria. The factory is located in Maya village in Ibarapa east local government area of south-western Nigeria. Ibarapa east local government area is on geographic grid reference along $3^{\circ} 17'$, to $3^{\circ} 19'$ East, and $7^{\circ} 32'$ to $7^{\circ} 33'$ North of the equator. The local government headquarters is at Eruwa – a growing Yoruba town of approximately 57,000 people by the 1991 census figure⁽³⁾. The factory had capacity for slaughter and procession of 30- 40 cattle per day, 120-150 pigs a day, and 2,000 – 3000 chicken one day. Cattle supplied were mainly from northern Nigeria.

2.2 Method of study

Assessment of personality traits⁴ of individual employee in the abattoir for beef quality control was done with an interval scale made by scoring either a 0 or 1 to each of the ten traits when absent or present respectively in a person. These traits included (i) a trust for every other person on the plant; (ii) an indept understanding of fellow employees in the plant;⁴ (iii) any common heritage and cultural background with others?; (iv) not temperamental; (v) inclined to learn on the job; (vi) self motivated; (vii) clear sense of quality accounting system; (viii) attempt to produce in full capacity; (ix) committed to quality identification; (x) sustainable long term plans. A maximum of ten units could be scored by an individual. An average score for an employees group was termed group coefficient of compliance (c).

Quality control index was a measure of person-environment (p-e) fit. The p-e fit was computed from a mathematical formula as follows;

$$\frac{p-e}{q=1} \rightarrow \text{Max!}$$

Where p-e = person-environment fit, ### is the preference weight of cattle slaughtered and processed into beef, q;u is the variable representing condemned beef weight at post mortem examination. Weight, sources and quality status of cattle were compiled from records in the abattoir

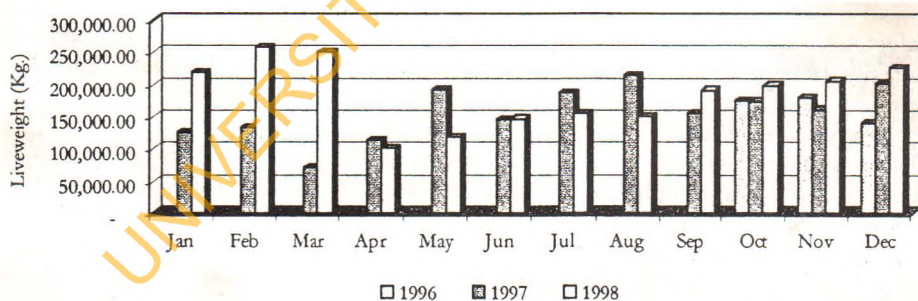
3. RESULTS

3.1 Liveweight of cattle slaughtered and deadweight of organs condemned

Approximately four million, four hundred and eleven thousand, five hundred and seventy two kilograms (4,411,572.0kg) of cattle liveweight were slaughtered and processed during the studied period. Out of this figure, a total of twenty nine thousand, one hundred and seventy two kilograms (29,172 kg) dead weight of cattle organs and whole carcasses were condemned as unfit for human consumption by public health veterinarians in government service. Figures I and II below show these figures on monthly basis.

Figure I

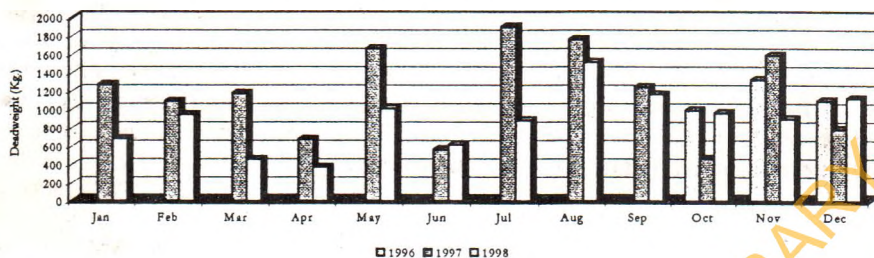
Monthly Distribution of Cattle Slaughtered



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Liveweight slaughtered (Kg.) 1996									173,788.9	180,036.9	140,608.1	
Liveweight slaughtered (Kg.) 1997	125,979.1	132,383.0	71,697.6	112,408.3	191,322.9	144,584.8	187,077.7	213,221.6	155,224.0	173,453.7	160,913.2	201,151.6
Liveweight slaughtered (Kg.) 1998	218,468.3	258,355.1	250,131.5	100,742.1	117,622.1	145,942.1	155,309.9	149,641.8	190,222.5	198,235.8	205,499.0	226,066.6

Figure II

Monthly Distribution of Organs and Carcass Condemned



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Deadweight condemned (Kg.)	1996										988.6		
Deadweight condemned (Kg.)	1997	1,271.80	1,086.80	1,173.80	675.50	1,661.50	565.80	1,901.10	1,761.90	1,242.40	466.30	1,591.40	785.10
Deadweight condemned (Kg.)	1998	681.20	942.40	456.00	372.20	1,008.10	617.70	878.30	1,512.70	1,162.90	957.80	897.30	1,120.50

3.2 Causes of beef condemnation

Tuberculosis accounted for 56.7% by weight of condemned carcass parts. Tuberculosis affected the lungs, spleen, intestine, forequarter, hindquarter and whole carcass. Fascioliasis (*Fasciola gigantica*) accounted for 26% by weight of entire condemned carcass parts. Fascioliasis affected the liver only. Cysticercosis accounted for 4% by weight of condemned carcass parts. Cysticercosis, affected the kidneys, diaphragm, heart and tongue. Brucellosis accounted for 0.6% of condemned carcass weight. Brucellosis affected the genitalia. Dermatophilosis accounted for 1.9% of condemned tissue weight. Dermatophilosis affected the skin only. Helminthiasis accounted for 0.8% of condemned weight and affected intestine.

3.3 Coefficient of compliance.

Coefficient of compliance for butchers was found to be about 6 units. For diagnostic laboratory technologists, compliance was about 7 units. The score varied widely between 4 units (non-veterinarian suppliers) and 8 units (veterinarian supplier). The group of public health veterinarians in government service measured 9 units. In the course of this quality control at the abattoir, the entire organs and whole carcasses condemned as unfit for human consumption amounted to two million, four hundred and thirty thousand five hundred and thirteen Naira fifty kobo (N2,430,513.50) in Nigerian money, for that company or about Twenty four thousand, three hundred and five dollars in the currency of the United States of America.

4. DISCUSSION AND CONCLUSION

4.1 Discussion

This paper focussed on man as an agent of beef quality control. This type of psycho-ergonomic assessment was found to be relevant to the needs of Nigeria as a developing country³. Where such findings were carefully applied⁴, it was possible to achieve socio-economic development. Non payment of compensation to cattle suppliers that suffered financial loss following condemnation of whole carcass discouraged some who had spent much on screening. Variations in control status may be explained with the fact that some suppliers left the job when they suffered serious financial setbacks. New suppliers often had little knowledge of these quality control strategies. When new suppliers brought in more unwholesome cattle, quantity of condemned carcasses increased.

4.2 Conclusion

This article studied beef quality control system in UAC Foods, Marquis factory, Maya, in south-western Nigeria and found its strategies to be efficient in ergonomic terms. What is now needed is a wholesome extension of this model achievement to correct the much larger public abattoirs, that provide more than 80 % of beef in south-western Nigeria market places.

5. REFERENCES

1. OLUGASA, B.O. and ESURUOSO, G.O. (1999) Exploring shared areas of worksystems for veterinary officers and private practitioners in Nigeria: A recipe for success at all levels. 7pp. Paper presented at the 36th annual congress of the Nigerian Veterinary Medical Association. 25th-29th October 1999, at Arewa House Kaduna, Kaduna State, Nigeria.
2. OLUGASA, B.O. (1996) Abattoir requirements for pig meat inspection. Pp. 25-33 in: Esuruoso, G.O. (Edited) Handbook of Veterinary Public Health Strategies for Lagos State. Produced by VetAcademic Resource Publishers and Consultants, U. I. P. O. Box 14400, Ibadan, Nigeria. Being the proceedings of a continuing education workshop organised by the Lagos State Ministry of Agriculture and Co-operative, 5th-11th December 1996, at Ikeja, Lagos Nigeria.
3. ADEWOYIN, J.A. (1993) History of Eruwa. 165 pp. Published by OLU-AKIN publishers, 1179B College Crescent, G. P. O. Box 11566, Ibadan SW8, Nigeria.
4. KEYS D. E. (1991) Five critical barriers to successful implementation of JIT and total quality control. J. Ind. Engineering (American) January 1991, pp 22-24, 61.
5. ESURUOSO, G. O. and OLUGASA, B.O. (1997) Social responsibilities of professionals in Nigeria, being the proceedings of a brain-storming seminar held at the Faculty of Veterinary Medicine, University of Ibadan, on 7th March, 1997. VARF Quarterly Bulletin Vol.1 (No. 1), pp5 - 19.