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System of Abattoir international and compared with system Abattoir in Shaqlawa city

A research project submitted to the board of the veterinary department as a part of the requirements for obtaining diploma in veterinary sciences

Prepared by students

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2023

Declaration of supervisor

I certify that this research is under the title (System of Abattoir international and compared with system Abattoir in Shaqlawa city).

Presented by the students:

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It took place under my supervision at the Shaqlawa Technical College as part of the requirements for obtaining a diploma in veterinary medicine.

Signature:

The name: MSc.Fawzyea Beia Toma

Date:

Based on the available recommendations, I nominate the research for discussion.

Signature:

The name: Kaefy Jabar Hassan / Head of department

Date:

The approval of the discussion committee

We, the members of the discussion committee, the undersigned, certify that we have seen this research decree title (System of Abattoir international and compared with system Abattoir in Shaqlawa city).

Presented by the students:

Power Yasin Hassan Sheikh Noah Rashid Yousief Rashid Bland Moulowd Abdel-Wahhab

We have discussed with the students its contents and what is related to it as part of the requirements for obtaining a diploma in (veterinary), and we found it fulfilling the requirements of the certificate.

Head of committee: Dr. Kammran Muhammed Husien // 2023

Dr.	Dr.	Dr.
Member	Member	Member
2023	2023	2023

Summary

Slaughterhouse, also called abattoir. Hygiene of slaughter house is important to prevent contamination of meat during the process of dressing. • There is a model public health act (1955) in India, which standardizes on the location ,structure , disposal of wastes, water supply ,examination of animals , storage of meat, transportation of meat and miscellaneous other activities connected with meat processing. Location: Preferably away from residential areas. Disposal of wastes: Blood, offal, etc... should not be discharged into public sewers but should be collected separately. Water Supply: should be independent, adequate and continuous. Examination of animals Antemortem and postmortem examination to be arranged. Animals or meat found unfit for human consumption should be destroyed or denatured.

Miscellaneous: animals other than those to be slaughtered should not be allowed inside the shed. Storage of meat: Meat should be stored in flyproof and rat-proof rooms; for overnight storage, the temperature of the room shall be maintained below 5°C. Transportation of meat: Meat shall be transported in fly-proof covered vans. These are steps of slaughter animal in slaughter house.

The aim of this research is to compare abattoir international with slaughter house in Shaqlawa city.

Dedication

When we cross the sea of hard work,

Only those who planted a beautiful flower on our way to overcome difficulties remain within us.

My letters can only be words of thanks and dedication to my beloved family and my honorable teachers

Researchers

Aknowlgment

Praise be to God, the Generous, the Compassionate, the Most Merciful, who created man, taught him the eloquence, and spoke his tongue with remembrance and the Qur'an.

I raise and refrain from submission to God, the Exalted, the Most Exalted, Who corrected my mistakes and enabled me to complete this study after what was good for me at the hands of all those who pledged me to take care of the virtuous scholars, pious fathers, loyal companions, and generous people who gave me all their effort and knowledge without tirelessness and boredom. And in accordance with the saying of the Almighty (I do not waste the reward of the best work). I present to all of them in my name the verses of thanks and gratitude, asking God Almighty to reward them, and may my Lord reward them on my behalf with the best reward, and to make their deeds with me a weight in the balance of their good deeds and an intercessor for them on the day of presentation to you.

Hence, I am true to the saying [Be humble to whomever you know from]. We extend our thanks, appreciation, credit and gratitude to my professor, Dr.: Hassan Abdullah Muhammad, the supervisor of the research, who provided us with a single example of scientific enrichment and a careful follow-up of all our steps in preparing the research. We can only pray to God to reward him for all. It is good to give him health to communicate his human and scientific giving without limits.

We would also like to extend our sincere thanks and great gratitude to everyone who contributed to helping us, directing and guiding us, based on the saying of our Messenger, may God's prayers and peace be upon him, "He who does not thank people does not thank God.

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1. Introduction

Meat is rich in essential protein and valuable nutrients for human health. Despite these benefits, it is a favorable medium of microbial growth and transmission to humans [1]. Especially, meat contaminations from meat handlers' bodies, the hide of animals, the gastrointestinal system of the animals, and the meat processing environment are the common health risks for the meat consumers [2]. The food handlers' poor knowledge about the food contaminants and good hygienic practices are the main factors for poor prevention and control practices of these contaminants [3, 4, 5, and 6]. The meat handlers, which include slaughterers, meat inspectors, transporters, meat processors, and butcher shop workers are expected to be knowledgeable on foodborne pathogens, temperature control, cross-contamination, and cleaning and sanitation activities.

Foodborne diseases are common public health hazards in both developed and developing countries regardless of their economic status and geographic locations [7]. The public health burdens of foodborne microbes are higher in developing countries [8] due to poor food handling and sanitation practices, inadequate food safety laws, weak regulatory systems, lack of financial resources to invest in protective equipment, and lack of education for food handlers [7]. The foods intended for human consumption; especially animal-origin food is most hazardous unless the food safety principles are employed [9]. Since meat is a highly perishable food stuffs [10] and the abattoirs and butcher shops are such labor-intensive working areas, the awareness, and level of training of the meat handlers regarding good hygienic management and the critical control points of the food chains are of great significance to mitigate the health risk of meat consumers...[11]. 2. Review on processing of slaughter house international

2.1. Reception of animal. Selection of Site

- Away from human dwelling (45 km from airport).
- Closer to animal production area.
- Proximity of public transport system.
- ➢ Main municipal water supply.
- Electricity supply.
- ➢ Facility for municipal sewage.
- ➢ Good availability of raw material.
- ➢ Future expansion



Figure 1 local of abattoir

It must receptor animal directly put them in field for rest and bring them water with little diet before slaughter them around 12-24 hours this is to prevent of bacteria still in their stomach.

2.2. Process of slaughter.

During meat processing activities, the meat has the potential to be contaminated by pathogens. To produce safe and wholesome meat, the meat handlers should practice according to the food safety standards [12]. Such standards include good biosecurity practices, good manufacturing practices, good hygiene practices, and standard operating systems [13]. According to [14], there are more than 250 known foodborne diseases causing agents (bacteria, viruses, or parasites).

2.3. Hygiene problem is not only limited to slaughtering operations, but it is also associated with imprudent processing, marketing, and operating systems [3, 4, 5, 6, 15, 16]. The knowledge and practices of the abattoir and butcher shop workers about food safety are therefore very crucial to eliminate the emerging and re-emerging zoonotic microorganisms and to produce healthy and wholesome meat for consumers.

Not only processed (cooked, roasted, stewed, and fried) meat, eating raw beef is commonly practiced throughout Ethiopia, but no written document is available about how this practice began. There is a verbal story that describes eating raw beef was began during wartime in which soldiers did not have access to fire and had limited time for cooking. Besides beef, eating raw meat from other animals is not common. The raw beef in Ethiopia is called "Kurt" in the Amharic language. Kurt is directly consumed without any process by mixing with hot paper and other locally prepared spices.

As presented by the international organization for animal health [16], the most prioritized bacterial hazards that can originate from raw meat are Salmonella, Escherichia coli, Campylobacter, Shigella, and Listeria monocytogenes. A pooled prevalence study showed that Staphylococcus spp., Listeria monocytogenes, E. coli O157: H7, and Salmonella were isolated from raw meat and meat products in Ethiopia and those bacteria resistant to common antibiotics ceftriaxone. are gentamicin, ciprofloxacin, and ampicillin in a variable degree of resistance [17]. The raw meat-eating behavior of many Ethiopians increases the vulnerability of consumers to meat-borne pathogens. Since the raw meat could not pass through different preparation processes (cooking, roasting, and radiation), the pathogens can pass directly to the consumers. The public health risk is remarkably high if these pathogens are antimicrobialresistant.[17]

2.4 Exam carcass

2.4.1. Physical exam

- 1_measurement of the animal's temperature
 - 2_looking at theanimal's eyes
 - 3_watching the animal's mouth
 - 4_watching the animal's way of going
 - 5_watching the animal's skin
 - 6_watching the animal's nose
 - 7_selecting pregnant animals

2.4.2. Post Morten or after death after pass pre Morten the exam of carcass for lung and liver and muscles if there any signal disease and the decisions depend on type of infection may be Total execution or partly of carcass. After doing this, there will be three options

1-the animal's slaughter

- 2-destroying the animal
- 3-rejecting the animal

Meat-eaters in developing countries including Ethiopia are affected by meat-borne pathogens. Food-borne diseases had 0.2, 0.1, and 1.3 disability-adjusted life year per year (DALY) per household in Gondar, Lalibela, and Debark cities respectively [18]. This is due to a lack of knowledge about good meat handling and improper food handling and hygienic practices. The knowledge and practice gaps of meat value chain workers can be due to a lack of food safety laws, weak enforcement of food safety rules, and lack of education for food handlers (abattoir, butcher shop, and meat processing workers). Since the food handlers' level of knowledge and their practices are essential for policy formulation, awareness creation, ensuring consumers' access to safe food, and prevention of food contamination and disease occurrence, it was imperative to conduct this study along the meat value.

2.5. Slaughter

The steps in this process generally include hanging, stunning, bleeding, eviscerating, and skinning.



Figure 2 steps of slaughter

2.6. Electrocution stunning

Before dying, different types of mechanisms are used to knock out animals before being slaughtered. Pigs are left unconscious; they are electrocuted with an apparatus applied to their temples. Hens and chickens are forced to pass upside down by electrified water. And cows have their skulls drilled with a special gun, which introduces a retractable bullet into their brains.



Figure 3 Electrocution stunning

- 2.7. Postmortem examination helps to detect abnormalities.
 - Signs of generalized disease are:
 - 1-Inflammation of joints
 - 2-lesions in different Organs
 - 2.7.1. Postmortem rejection- it is based on:
 - abscesses, parasitic and nodular infection of liver and lungs...
 - 2.7.2. Good meat qualities
 - 1-it should be neither pale pink no or deep purple tint

- 2-firm
- 3-elastic to touch
- 4-should not be slimy
- 5-have an agreeable odor

2.8. Transport carcass to cold room

After Emptying and isolating the edible bowels from the inedible or inedible ones the dressing carcass transport to cold room under 5 c.



Figure 4 transport of dressing carcass

Fresh meat products are transported with trucks from the slaughterhouse to the super market. If a product is processed, the meat is transported from the slaughterhouse to the meat processing manufacturer and then to retailers and super markets.

The meat and meat products should be packaged and checked for leakers, temperature, packaging etc. before transportation. Meat is put in packages, boxes or crates when transported. Human contact should be limited with the products.

2.7 marketing

Transport by van must be clean, cold and ventilation

3. Abattoir in Shaqlawa city

3.1. Reception of Animal in Shaqlawa city

* No one have knowledge about source of these animal.

- * There is not cheek of physical exam.
- * Most of these animal in old ages.

3.2. Slaughter of animal

* Slaughtering done in dirty ground.

* The butchers who's done slaughtering they do not have any of the conditions for sanitary sterilization, for example, for hats or work suits, most of them smoke, the slaughter is done quickly and in front of the animals, which causes them to stun and not completely bleed, and below are the illustrations



4. Conclusion and Recommendation

4.1. Conclusion

* An abattoir is a food factory and its primary aim is to produce a healthy, wholesome and clean product, which is safe for consumption. Town / city town in Oromia region, In most of the countries,, falls in an ecological region categorized as arid and semi-arid, and is renowned for its livestock production and marketing. However, the pastoral production systems in the town is facing challenges by emerging socio-economic development trends, climate change and land use patterns.

* The most common waste management practices in most of the countries, where as some of solid wastes are incinerated, some are transported to municipality landfill and in some of the abattoirs, very small portion of degradable solid waste generated are subjected to digesters for the production of biogas energy as a fuel. The international market for meat is becoming increasingly competitive environmental management system trainings will be essential to meet international market requirements and maximize the income generated from the sector. * This report presents designs, specifications, and schedule of quantities for an abattoir and meat market suitable for small communities in Town / city town like Shaqlawa city The design could however be utilized by small communities in other developing countries, although some modifications to suit changed local conditions may be required condition of development project with a view of recommending mitigation and enhancement measures.

* There is no any sanitary condition for slaughtering in Shaqlawa house slaughter.

4.2 Recommendation

* Till this moment the slaughter house in Shaqlawa city hasn't any sanitary sterilization condition .So its need to contact with ministry of agriculture and veterinary office to renew this building under condition of sanitary sterilization.

* Make training for worker by improve them culture of topic work in abattoirs.

* Do not accept any animal without two exam, premortal and postmortem.

* A rotating, non-fixed employers should be allocated for periodic follow-up and control, from receiving animals to marketing meat.

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- 15. Pictures from Shaqlawa house slaughter.

كوشتارگە، كە پێى دەوترێت كوشتارگە. پاكوخاوێنى سەربڕخانە گرنگە بۆ ڕێگريكردن لە پيسبوونى گۆشت لە كاتى پرۆسەى پۆشىنى گۆشتدا. • ياسايەكى نمونەيى تەندروستى گشتى (1955) لە ھىندستان ھەيە، كە ستاندارد دەكات لەسەر شوێن، پێكھاتە، ڧرێدانى پاشماوە، دابينكردنى ئاو، پشكنينى ئاژەڵان، ھەلگرتنى گۆشت، گواستنەوەى گۆشت و چالاكىيە ھەمەجۆرەكانى تر كە پەيوەندىيان بە پرۆسێسكردنى گۆشتە، گواستنەوەى گۆشت و چالاكىيە نيشتەجێيوون دوور بێت. ڧرێدانى پاشماوە: نابێت خوێن، ناوپۆش و ھتد... بخرێتە ناو ئاوەرۆى گشتى بەلكو دەبێت بە جيا كۆبكرێتەوە. دابينكردنى ئاو: پێويستە سەربەخۆ و گونجاو و بەردەوام بێت. پشكنينى ئاژەلمكان پشكنينى پێش مردن و دواى مردن ڕێكدەخرێت. ئەو ئاژەلانە يان گۆشتانەي كە بۆ خواردنى مرۆڤ ناشايستە دۆزراونەتەوە، پێويستە لەناوبىرێن يان

ههمهر هنگ: نابنیت ریّگه بدریّت ئاژه لهکانی تر جگه لهوانهی سهربر دریّن لهناو کوّشکهکهدا. هه لگرتنی گوّشت: پیّویسته گوّشت له ژووری دژه میّش و دژه مشکدا هه لبگیریّت؛ بۆ هه لگرتنی شهوانه، پلهی گهرمی ژوورهکه دهبیّت له خوار 5 پلهی سهدیهوه بمیّنیّتهوه. گواستنهوهی گوّشت: گوّشت دهبیّت لهناو ڨانهکانی داپوّشر اودا بگوازریّتهوه که دژه میّش. ئهمانه ههنگاوی سهربرینی ئاژه له سهربر خانهدا.

ئامانج لهم توێژينهوهيه بهراوردكردني كوشتارگهي نێودهوڵهتييه لهگهڵ كوشتارگهي شاري شهقڵاوه.