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Research Paper

A study on Technical Facilities in Municpal Slaughter House and Retail Meat Shops in Bareilly

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ABSTRACT

The present study was taken up in Bareilly district of Uttar Pradesh to analyze the meat processing and production practices in the municipal slaughter house and retail meat shops. Twenty butchers of large animal slaughterhouse (LAS), ten butchers of small animal slaughterhouse (SAS) and thirty meat retailers were randomly selected for the study. Results of the study revealed that majority of the butchers are with 5 to 15 years of experience, medium work load and without formal training. Various factors for unhygienic meat production include lack of sufficient infrastructure, inefficient and insufficient equipments, poor personal hygiene, poor state of existing buildings of LAS and SAS. Retail meat shops lacked in many important facilities. Majority of meat handlers were unaware of the public health hazards due to lack of training/education. The study reveals that there is an urgent need of creating awareness among butchers and retailers regarding clean and hygienic meat production and associated health hazards.

Key Words: *Carcasses, slaughter houses, retail meat shops, hygiene.*

INTRODUCTION

Mutual dependence of man and livestock is age old on this planet. In India livestock can be considered as the backbone of its rural economy in terms of income, employment, social/gender equality, agricultural sustainability, and diversification and foreign exchange earnings. In 2008-09, this sector contributed 108.5 million tonnes of milk, 55.6 billion eggs, 42.7 million kg wool and 3.8 million tonnes of meat (Eco. Survey of India, 2009-10). Butchers are important link in the meat production and processing chain at slaughter houses. There are two types of slaughterhouses operating in the country, organized and unorganized. India has 3600 registered slaughter houses under local bodies, yet most of them are highly ill managed, unhygienic and overcrowded (Padda and Thind, 2002). The infrastructure facilities for slaughter and processing of meat are not adequate to meet the minimum standards of hygiene (Das et al., 2006). The working condition of the butchers is also miserable and people, who eat meat from these slaughter houses, have chances of getting infected. The present study was conducted to assess the basic infrastructural facilities available in the slaughter houses and retail meat shops.

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MATERIALS AND METHODS

Twenty butchers from the large animal slaughter house and ten butchers from the small animal slaughter house of Bareilly district were selected randomly to study their working practices, education/training level and awareness regarding meat associated zoonotic diseases. The following parameters were selected for the study, i.e. supply chain of meat, licensing, basic infrastructure available in slaughter houses and retail meat shops, transportation of animals and dressed carcasses and storage and display of carcasses at retail meat shops.

RESULTS AND DISCUSSIONS

The supply chain of meat and meat products include butchers, retailers and consumers. The butchers are the primary and critical unit of the value chain. In the demand driven economy there is increased demand of hygienic meat by consumers as the final unit of chain. Retailers are the middle man of the chain involved in processing and handling of meat products.

Licensing: Production of meat is governed under local by-laws as slaughtering is a state subject. License was issued by Nagar Nigam to both butchers as well as retailers but during study it was observed that only 53.33 percent of total respondents had valid license. Further, it was found that 100 percent of butchers of SAS had license while only 60 percent of meat retailers and 20 percent of butchers of LAS had license. Similar findings has also been reported by Smith et al. (2002)

Slaughter house basic infrastructure: Both large animal slaughterhouse (LAS) and small animal slaughterhouse (SAS) were located in the urban area and residential colonies were observed in and around them. Though the surrounding was thinly populated near large animal slaughterhouse (LAS), it was thickly populated near SAS. None of them were built on high ground thus drainage was not proper. In spite of this, water logging was not noticed as the required quantity of water for washing and other work were not utilized. Both the slaughterhouses were properly connected with roads to facilitate movement of vehicles. The sites of both LAS and SAS were free from pollution of industrial odors, smoke, dust, ash etc. Technical and skilled manpower was available in the nearby area. Truck was most commonly used to transport large animals (buffaloes) to LAS while driving by hoof, three wheelers, carts, vans and rickshaw were common modes to transport small animals (goats and sheep) to SAS. Both LAS and SAS lacked many important building infrastructures which were necessary for hygienic meat production. Receiving ramp and yard were available in LAS but they were disused owing to their bad state of maintenance.

Lairage was unavailable at SAS and the one available at LAS was insufficient to accommodate large number of animals. Thus animals were seen tied near a wall, tree or corner of slaughterhouse under open sky till the time of their slaughter. Four slaughter halls of different size were available in LAS whereas only one slaughter hall was available at SAS. The lairage at LAS was half walled and made up of bricks. Its roof was thatched and floor was Kuccha (mud floor) type. In such conditions, chances of soiling and cross-contamination of animals with food borne pathogens were high. The condition of slaughter halls both at LAS and SAS was deplorable. The gradient for draining waste waters was not proper. In slaughterhalls of both LAS and SAS, there was no separation between clean and dirty sections and thus incidences of reversal, intersection or overlapping between the live animals and meat, and between meat and byproducts or waste were frequently observed which undermined the whole concept of hygienic meat production. During the course of present study it was observed that other facilities viz. ventilation, drainage, water supply, electricity supply and disposal of waste for efficient operation of slaughterhouses were provided but slaughtering and further processing of higher number of animals than the permissible limit had made them insufficient. As the slaughterhalls at LAS and SAS had half walls, ventilation was sufficient but hygiene was compromised. Birds and dogs were freely roaming in slaughterhalls.

Cleaning of slaughterhouses was done at the beginning as well as at the end of the days operation. But the quality of cleaning practices was insignificant. Due care was not given to remove solid waste such as fat trimmings, bone chips, blood clots and visceral contents. Thus the garbage was observed nearby the slaughterhalls which posed great risk to sanitation and cleanliness. The area around LAS had no proper flooring anywhere except slaughterhalls and some nearby rooms, which made the washing and cleaning very difficult. The regular movement of animals, rain, urination and accumulation of waste water had created mud and squalor at most of the places. Butchers of both LAS and SAS were careful about cleaning their equipments viz. knifes, sharpening rods or axes before starting their work but none cleaned them between slaughtering of different animals.

Transportation of animals and dressed carcass: It was observed that retailers bring their animals to be slaughtered and dressed in LAS in case of buffaloes and SAS in case of goats and sheep and transported the dressed carcasses back to their respective shops for sale. Some retailers also purchased cut carcasses from the wholesaler to be later sold out from his shop. The results of the study brings to light that 40 percent of retailers were using cart/horse cart, while equal

proportion (26.67%) were using either cycle or rickshaw and 6.66 percent were using three wheeler for transportation of carcasses from slaughterhouses to retail meat shops. The results further explains that care was taken to cover the carcasses while transportation. Considerable proportions (60%) of respondents were using cloth and plastic sheet (40%) to cover the carcasses. It was further observed that though carcasses were covered, it was not effectively covered and chances of hazards of chemical, physical or biological contamination were high. Stacking of carcasses one over the other increased the chances of cross contamination. The vehicles used for transp ortation were dirty and ill designed for transportation of meat. Similar findings have also been reported by Pham and Nguyen (2001).

Facilities at retail meat shops: The study reveals that 66.67 percent of shops were located in residential areas while 33.33 percent of shops were located away from residential areas. The shops were also categorized according to their size into three groups viz. small (less than 40 sq. ft), medium (41 to 60 sq. ft) and large (more than 60 sq. ft). Majority (60%) of shops were small whereas 23.33 percent of shops were large and 16.67 percent of shops were medium sized. The small size of majority of shops was the hurdle in the hygienic processing, display and sale of meat. With regards to the type of side walls at the meat retail shop it was found that a considerable proportion (50%) of shops had bamboo wall while equal proportion(16.67%) of shops have either wooden or cemented walls. It was observed that shops did not have proper roofing and only 16.67 percent of shop had proper (concrete) roof, while an important proportion (26.67 percent) of shops had either thatched or mud-tiled roof. The floor was also not properly laid in shops. A significant proportion (66.67%) of shops had mud flooring and equal proportion (16.67%) of shops had brick or cemented floor. A significant proportion (66.66%) of shops had good ventilation. It was observed that the quality of ventilation was not due to suitable ventilation system, but the reason behind good ventilation was ill-build shops (73.33 percent shops had either no walls or half walls) which not only allowed air to pass freely but also increased the chances of contamination of displayed carcass by dust and smoke. The floor of shops must be impervious made up of good quality marbled slab/ cement-tiles or good quality cement concreting with proper gradient for draining waste water. A major proportion (63.33%) of shops had ill-formed floors without sufficient gradient for drainage of waste water. The water was observed accumulated in sales area in many shops during rainy season. Sufficiently safe and potable water was not available in majority (53.33%) of shops. A significant proportion (93.33%) of shops are dependent on government supply which was irregular and available for limited time. The improper storage of water in rusted tin/iron buckets or dirt coated plastic buckets was generally observed. An adequate direct natural light or artificial light are prerequisite for proper display and sale of meat and an uninterrupted provision of light depends on uninterrupted supply of electricity.

Storage and display of carcass at retail shops: Our observation revealed that the retailers were using various combination of display method to attract consumers. Open display of carcass by keeping it on table surface was observed in 73. 33 percent of shops while open display by hanging in 66.67 percent of shops. It was further observed that 13.33 percent of retailers used glass box or glass cover to display the carcass. Refrigerated glass box was not observed at any shop. The retailers were noticed using various methods to protect the carcasses from dust, dirt and direct sunlight. It is clear from data that 73.33 percent retailer wrapped the carcass in cloth, 60 percent frequently washed it, while 40 per cent wiped it with cloth. A scrutiny of study further uncovers that 60 percent retailers had no facilities for storage while 33.33 percent frequently used iceboxes. It was observed that 6.67 percent of retailers possessed refrigerator facility in their shops. It was reported by many retailers that lack of storage facilities and aversions of consumer towards stored meat do hamper their business. Oliveira et al. (2005) assessed the hygienic practices of food establishments in Ouro Preto in Minas Gerais, Brazil, including street markets, butcher shops, warehouses, green groceries, bakeries and supermarkets. The main problems identified after his studies were: inadequate

temperature for refrigeration; presence of moulds; poor ventilation; improper stacking and storing of products; and poor hygienic conditions of both the handlers and the establishments.

Present study reveals the various facets of the prevailing meat production practices in the slaughter houses and retail shops. Lack of sufficient infrastructure, inefficient instruments, poor state of existing buildings of LAS and SAS emerged as the major constraint in hygienic meat production. Need for up-gradation of the existing slaughter houses/retail meat shops is felt among the butchers and retailers during the course of this study. Further, the inspection of the retail meat shops also need to be strictly done to assess that they follow hygienic meat production practices. Such initiatives if not taken up urgently, it might lead to severe health hazards among the consumers and the meat industry personnel.

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