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Bacterial load analysis of feed from organised Farms in Jaipur and Alwar district of Rajasthan

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Abstract
A Study was conducted about the quality of feed which is provided in the organized sector of pig farms in Jaipur & Alwar district of Rajasthan. In the study we have collected feed samples from these organized farm in a sealed containers and we have checked the bacterial load in these samples by using nutrient agar media. In the study we have found out that Total plate count (TPC) of bacteria ranged from 1.02 $\times 10^7$ to 1.45 $\times 10^7$cfu/gm in the farm pig feed samples that were analyzed, with an average mean and standard error of 1.18 $\times$ $10^7\pm$ 0.12 being detected. Food waste can promote the growth of numerous dangerous germs, including Clostridium botulinum and Staphylococcus aureus, if it is not handled before ingestion. These bacteria multiply within a food, producing poisons that, when consumed, result in intoxication. Other agents, such as Bacillus cereus, enteropathogenic Escherichia coli, Vibrio parahaemolyticus, and Yersinia enterocolitica, have been discovered to cause food-borne illness. Cooking or steam treatment is the sole procedure that is widely used outside to lower the microbial load.

Keywords: Nutrient agar, clostridium, microbial load

Introduction
Animal products play an important part in food security for their contribution as a source of high quality, balanced bioavailable protein and many essential micronutrients, like iron, zinc, and vitamins, animal products play an important role in food security. Thus, a nutritionally balanced diet, especially in underdeveloped countries, depends on the moderate consumption of food derived from animals Pig farmers in small-scale operations relied on feeds that were found on and near the farm. These feedstuffs were low in protein and high in energy, which led to nutritionally unbalanced diets, poor growth performance, and increased piglet mortality. The issue of feed quality and quantity needs to be solved in order to increase pig production in smallholder settings. In order to overcome this significant barrier to pig production, it is necessary to prioritise and identify the solutions that will benefit farmers the most (Phengsavanh *et al*., 2010) [6].

Research Methodology
Hotel waste fed to pigs were analyzed for their bacterial load. Total bacterial colonies of all the samples were counted separately on the Nutrient Agar media. Bacterial colonies were counted up to 10^{-4} serial dilution (American Public Health Association. 1984. Compendium of Methods for the Microbiological Examination of Foods, 2nd ed. APHA, Washington, DC).

Result and Discussion
Total plate count (TPC) of bacteria in the examined farm pig feed samples ranged from 1.02 $\times 10^7$ to 1.45 $\times 10^7$ cfu / gm and the average mean and standard error was found as 1.18 $\times$ $10^7\pm$ 0.12. According to NSW food authority, FDA, ILSI India and ICMSF International Commission on Microbiological Specifications for Foods, the unsatisfactory limits of bacterial CFU for any of the scraped, fermented, canned, mixed, dried, baked, cooked, uncooked food fed as animal feed were $\geq 10^7$ (cfu / gm).
This high bacterial load may be due to presence of perishable, uncooked or meat products in the feed slot. This may cause reduction in weight gains, poor feed conversion, and fatter carcasses in growing and finishing pigs. Further may also cause severe harmful diseases like Salmonellosis, Porcine parvovirus, Mastitis, Swine dysentery, Respiratory diseases, Coccidiosis.

Bacterial load in the swine feed approximately similar to the highest acceptable limits. As this feed is the food waste of restaurant, it contains many uncooked and perishable items such as meat, rice, paneer, vegetables, bakery items, fruits etc., which has low shelf life. To our knowledge, In India there is no such organized swine farm having food waste treatment facility. There are many laws prevailed outside country which regulates and set some guidelines for garbage swine fed. Most important among them is The Federal Swine Health Protection Act (SHPA). This act mandates that, before being fed to swine, food waste containing meat and animal byproducts must be heat-treated (212 degrees Fahrenheit/100 degrees Celsius at sea level) for at least 30 minutes by a licensed facility and also to keep swine away from untreated food waste, and to keep treated food separate from untreated food.

Conclusion

Food waste which if not treated before consumption can lead to the growth of various pathogenic bacteria such as *Clostridium botulinum* and *Staphylococcus aureus*. These microbes produce toxins as they proliferate within a food, and when the food is eaten, cause an intoxication. However, other agents have been found to cause food borne disease such as *Bacillus cereus*, enteropathogenic *Escherichia coli*, *Vibrio parahaemolyticus*, and *Yersinia enterocolitica*. There is only one method most prevalent outside which can reduce the microbial load is by cooking or steam treatment.

Many bacterial pathogens that are conveyed by foods invade the intestinal mucosa (*Salmonellae*, some *Shigellae* and some enteropathogenic strains of *Escherichia coli*) causing true infection. Others release enterotoxins during growth or lysis (*Vibrio cholerae*, some enteropathogenic *Escherichia coli*), or during sporulation, *Clostridium perfringens* in the gut.

References

1. American Public Health Association. Compendium of Methods for the Microbiological Examination of Foods, 1984. 2nd ed. APHA, Washington, DC).
2. FDA. U.S. Food and Drug Administration, 2017. https://www.fda.gov
3. ILSI India. International Life Sciences Institute (ILSI), 2017. http://www.ilsi-india.org
4. ICMSF. International Commission on Microbiological Specifications for Foods, 2016. https://www.icmsf.org/
5. NSW food authority, 2007. https://www.foodauthority.nsw.gov.au/
6. Phengsavanh P, Ogle B, Stür W, E Frankow-Lindberg B, Lindberg JE. Feeding and performance of pigs in smallholder production systems in Northern Lao PDR. Trop Anim Health Prod, 2010. DOI: 10.1007/s11250-010-9612-4.