Conclusions
Based on extensive investigation of the food samples and data obtained in the present study, the following conclusions are drawn:

1. The microbial contamination of various food samples are in the order of beef > raw chicken > fish meat > raw milk > curd > cheese. In many cases especially beef and raw milk samples where the level of contamination was found above the standard guideline, indicating poor microbiological quality of the food samples.

2. The foodborne pathogens under this investigation are more commonly encountered in meat cultural methods were found in various frequencies among beef (Pathogenic *E. coli* > *S. aureus* > *C. jejuni* > *Salmonella spp.* > *L. monocytogenes*), fish meat (Pathogenic *E. coli* > *S. aureus* > *Salmonella spp.* > *C. jejuni* and *L. monocytogenes*), raw chicken (*C. jejuni* > Pathogenic *E. coli* > *S. aureus* > *Salmonella spp.* > *L. monocytogenes*), raw milk (*S. aureus* > Pathogenic *E. coli* and *Salmonella spp.* > *L. monocytogenes* > *C. jejuni*).

3. The bacterial pathogens were characterized further by standardized PCR method targeting specific gene which provided more specific detection and confirmation of these bacterial isolate.

4. The standardized PCR methods were further tested in spiked food samples and found effective for the direct detection of these bacterial pathogens.

5. To find out the PCR method more effective and economical the multiplex PCR (m-PCR) was developed with the three bacterial pathogens viz. *L. monocytogenes*, *Salmonella typhymurium* and *S. aureus*. Such m-PCR could be effectively used in spiked food samples.

6. Varying incidence of antibiotic resistance against common antibiotics are recorded among selected pathogens studied. Multiple drug resistant (MDR) is also encountered in several isolates.

**Recommendations:**

Significant bacterial contamination among foods under investigation was found. The most probable reason is expected due to poor hygienic conditions and practices adopted by food handlers. Therefore, it is suggested that implementation of Good Manufacturing practices (GMP) and Good Hygiene Practices (GHP) should be ensured to maintain the good quality of foods.
**Future work plan:**

1. The isolated and characterized bacterial pathogens may be further subjected to 16S rRNA analysis for final confirmation of pathogen at species level.

2. The useful data generated from various uniplex PCR and m-PCR assay, in this study may be exploited to standardization and development more PCR assay to be used in natural food samples for detection of these bacterial pathogens alone or simultaneously.

3. The contribution and role of other virulence factors may be investigated as suitable marker.

4. The linkage between drug resistance and their associated gene may also be exploited further.