"Bacteriological Anylsis of Vegetable Sold in Market, Study of Contamination From Agriculture Land to Market."

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ABSTRACT

Vegetables get contaminated with pathogenic microorganism will growing in field during harvesting,post harvesting handling,processing and distribution.A number of studies have been carried out previously to detect the extent of microbiological contamination in fresh salad vegetables.The vegetable samples were analyzed from the total viable count(TVC)and the present of pathogen such as E. coli, S. typhiand S.aureus. Result was found that the salad vegetables were showed a wide variation in total viable count ranging from $2.5X10^4$ to $11X10^5$ cfu/g. The percentage of pathogen on vegetable sample was found such as E.coli 77.77% S. typhi 61.11% and Saureus 72.22% these vegetables are usually consumed without proper washing;there is the probability of consumers contracting pathogens if they get in contact with the vegetables. There is a need to promote awareness about the possible health hazards that could be due to poor handling storage and used of water on these vegetables for their freshness.

I. INTRODUCTION

Enteric pathogens such as E.coli and S.typhi are among the greatest concerns during food related outbreaks (Buck et al., 2003). Several cases of typhoid fever outbreak have been associated with eating contaminated vegetables grown in or fertilized with contaminated soil or sewage (Beuchat .1998). These increase in vegetables –borne infection may have resulted from increased consumption of contaminated vegetables outside the home as most spend long hours outside the home (Buck et al., 2003).

The attempt was made to study the bacterial flora present on fresh vegetables sold in market. The presence of pathogenic bacteria on the vegetables was serious issue regarding food hygiene and safety.

II. MATERIAL AND METHOD

Total 36 samples of different salad vegetables such as spinach, cucumber, tomato, brinjal, cauliflower, coriander, capsicum, lady's finger, miserly where collected from local market and street vendors of Chikhli town. Vegetable sample were brought sterile containers and analyzed within two hours of collection. A bacteriological analysis of vegetable sample collected and analyzed for bacteriological studies. The vegetables samples were analyzed for the total viable count (TVC). The presence of pathogens such as E.coli ,S.typhi and S.aureus was determined by selective media (Collins and Lyne ,1998).

III. RESULT AND DISCUSSION

The salad vegetables were showed a wide variation in total viable count ranging from $2.5X10^4$ to $11X10^5$ cfu/g at $37°C$. vegetables get contaminated with pathogenic microorganisms while growing in field during harvesting, post harvesting handling, processing and distribution. Total 36 samples of vegetables were collected from local market of Chikhli. These all samples were taken for TVC and isolation of pathogenic bacteria. However, isolation of bacteria and total viable bacterial counts were performed on representative samples from each treatment using the standard plate count method.

The percentage of E.coli, S.typhi and S.aureus in 36 vegetable samples collected from local market of Chikhli which was shown in figure 2. The percentage of pathogens was present such as E. coli 77.77%. S.typhi 61.11% and Saureus 72.22%.Present colony respectively in percentage.

Bacterial isolated form selected vegetables in this study was belonged to three genera identified (fig.1). E. coli(77.77%) were the most frequently isolated followed by S. aureus (72.22%) and S. typhi (61.11%). Bacteria of belonging to the same genera were also isolated and identified by other researchers from fruits and vegetables in different countries (Osamwonyiet al . 2013; eniet al . 2010;Rajvanshi 2010; Uzehet al 2009 ; Adebolu and Ifesan , 2001).
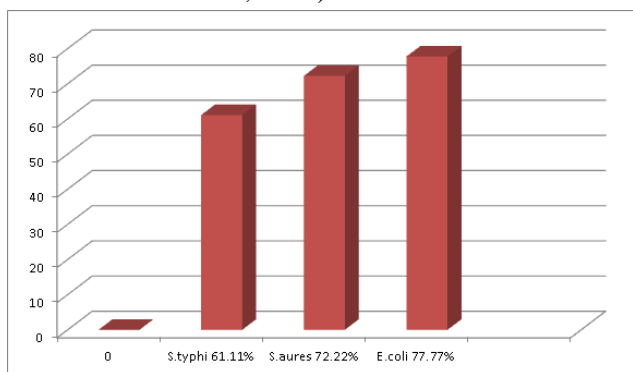

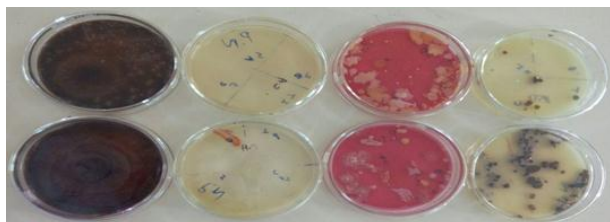**Figure 1.**Overall presence of bacterial pathogen in given sample.

Figure 2. Presence of bacterial pathogen by serial dilution method

The similar results were observed by Gojaet al.,(2013) shown that bacterial, coliform and fecal coliformcounts observed from vegetables are recorded higher counts. The total viable count was ranged from$1.2X10^5$ to $2.8X10^7$cfu/ml.

IV. CONCLUSION

Vegetables get contaminated with pathogenic microorganisms while growing in field during harvesting, post harvesting handling, processing and distribution. The percentage of pathogen on vegetable sample was found such as E.coli (77.77%), S. typhi (61.11%) and S.aureus (72.22%). The high bacterial load and presence of pathogenic bacteria such as E.coli, S,typhi and S.aureus in the salad vegetables sample could serve as an indicator. These vegetables are usually consumed without proper washing; there is the probability of consumers contracting pathogens if they get in contact with the vegetables. There is a need to promote awareness about the possible health hazards that could be due to poor handling, storage and use of water on these vegetable for their freshness.

V. REFERENCES

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