



MICROBIAL DYNAMICS OF PROCESSES FRUITS AND VEGETABLE

Desalegn Amenu*

M.Sc, Microbiology, Wollega University, Ethiopia.

Article Received on 10/05/2015

Article Revised on 01/06/2015

Article Accepted on 24/06/2015

*Correspondence for

Author

Desalegn Amenu

M.Sc, Microbiology,

Wollega University.

wadadesalegn@gmail.com

ABSTRACT

Any products like fruits, vegetables, plant and plants products including leaves, roots, bulbs, and tubes are the most perishable foods in the world markets. This review paper is aimed to describes and investigate the prevalence and distribution of commonly occurred pathogens in the processes fruits and vegetables. These products have

high nutritional value that attract, support and enhance the microbial growth in addition to both intrinsic and extrinsic factors that can hinder or increase the microbial distribution in the foods like carbohydrates, protein. In conclusion, bacteria are the most copious microbes that extremely found in these food products that other fungi and protozoa. So, therefore, it needs some adjustment and consideration like managing physical, chemical and microbial parameters to control and overcome the distribution of these microbes in the food products that can decrease the yield and may result economic loose.

KEY WORDS: products, pathogens, physical parameters, chemical parameters, microbial parameter, fruits and vegetables.

INTRODUCTION

According to the study conducted by Pla *et al.*, 2005; Badosa *et al.*, 2008, microbes inhibits vegetables and fruits are vary depending on different factors like plant products components, natural viability of the products, presences of soil accompanying the products during the pre and post harvest condition. Beside to these, it's vary also based of the other variation reminiscent of biological structure of the food, for instance damage or cut vegetables and fruits than intact structure favors microbial distribution (Ponce *et al.*, 20033).

Lactic acid bacteria; pseudomonas, Erwinia, Pontoea, Micrococcus, Flavobacterium, and Gram positive spore forming (*Bacillus, Clostridium*), are the widely dominant bacteria reported from fruits and vegetables. In addition, different types of molds such as *Alternaria, Penicilium, Fusarium* and *Aspergillus* are also the commonly existed molds. These organisms can impact the economic value of fresh cut products by decreasing the products shelf life through spoilage and posing risk to public health (Ngugen and Carlin, 1994).

The primary sources for bacterial contamination that affect the bacteriological quality and safety of the final products are present even before the crop is planted, these contamination are may be due to soil pathogens, wild and domestic animals, irrigation in soluble water(waste solid waste material), inadequate use of animal manure as a fertilizers, inadequate field works that can result poor hygiene and sanitation or due to rain fall problem in the temperature of the field (Zaho *et al.*, 2005).

During processing and packing of the specific food products there is specific sources of contamination or there are uncertain handling problem at the storage or improper temperature at the storage conditions and cross- contamination and inadequate preparation method that pose fresh fruits and vegetable contamination (Rico *et al.*, 2007).

Special attention must be paid to treat ready to use fruits and vegetables which industry has grown due to constantly increasing demand for fresh, health and convenient foods (Lamikarn *et al.*, 2002). Consumers have also become more critical about use of synthetic additives to preserve foods, and enhance characteristics such as color, flavor and textures (Buhn *et al.*, 2000).

It should be emphasized that minimally processed fruits and vegetables processing techniques can promote a faster physiological and biochemical changes, microbial degradation of the products (Ongeng, 2006), which may result in degradation or deterioration of foods like color changes, textures, aroma (Varo quaur and Wiley, 1994). Therefore, it needs proper handling procedures (keeping personal and environmental sanitation), proper physical and chemical parameters for storage(Ph, Temperature ...), proper harvesting, preparation and storage to keep the fresh fruits and vegetables and further more to increase shelf life of the products and promote the individual or public health.

REFERENCES

1. Bedaso, E., Tias, R., Pares, D., Plan, M. and Montesinos, E. Microbiological quality of fresh fruits and vegetables products in Catalonia (Spain) using normalized plate counting methods and real time PCR. *Science food and agriculture*, 2008; 88; 605-611.
2. Bruhn, C., Food labeling .consumer needs, 2002: 382.
3. Lemikarn, O.2002. Preface. Fresh cut fruits and vegetables .science, technology and market Boca Raton CRC press.
4. Montesinos, E. Development, registration and commercialization of microbial pesticides for plant protection .*Int.microbial*, 2003; 6: 245-252.
5. Nguyen, H.C. and Carlim, F. Microbial quality of minimally processed fruits and vegetables .*Criteria review of food science on nutrition*, 1994; 34: 371-401.
6. Ongenge, D., Devlieghen, F., Coursemen, J. and Ryckenbar, J. 2006. The effect of electrolyzed oxidizing water in activating spoilage microorganism in the process of water and on minimal processed fruits and vegetables .*Ij' food microbiology*, 2006; 109: 289-290.
7. Pla, M., Rodriueg Legelo, D., Bedosa, E., and Montesinos, E., 2005. Measuring microbial contamination of fruits and vegetables. In. *food science*, 2005: 147-155.
8. Ponce, A.G., Moreira, M.R., del Valle, C.E., and Poar, S.L. Preliminary characterization of bacteriocin like substance from lactic acid bacteria from organic fresh fruits and vegetables .*food science and technology*, 2008; 41: 423-441.