Raw milk as potential source for Aeromonads to consumer

اللبن الخام كمصدر احتمالي للإيروموناذز للمستهلك

Thesis presented

by

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قسم الرقابة الصحية علي الأغذية

اللبن الخام كمصدر احتمالي للإيروموناذز للمستهلك

رسالة مقدمة من

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بسم الله الرحمن الرحيم

وما أُوتيتم من العلم إلا قليلاً

سورة الإسراء (٨٥)

بسم الله الرحمن الرحيم

الحمد لله رب العالمين . الرحمن الرحيم . مالك يوم الدين . إياك نعبد وإياك نستعين .اهدنا الصراط المستقيم . صراط الذين أنعمت عليهم غير المغضوب عليهم ولا الضالين .آمين .

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INTRODUCTION

Milk is one of the few foodstuffs consumed as its natural state .It is generally considered as the perfect single foodstuffs. It contains all digestable nutrients provided by body in a proper and well-balanced proportion .It is valuable and rich in nutritive constituents that provide a highly favourable media for multiplication of different types of microorganisms including *Aeromonads*.

They are Gram -negative facultative anaerobic rod shaped bacteria currently classified in the family *Aeromonadaceae* ***(Colwell et al., 1986).***

The genus *Aeromonas* was first proposed by Kluyver and Van Neil in 1936 to accommodate rod shaped bacteria possessing the general properties of the enterobacteriacae but motile by means of polar flagellum. The first isolate labeled Aeromonas was recovered from eggs in 1937 ***(PoPoff, 1984).***

The organism is capable to grow at refrigerated temperature and has been observed as a part of microflora of milk, fish, poultry and meat (Palumbo et al.,1985a,b and ***(Greenway, 1988).***

Aeromonas spp.have been isolated from warm blooded animals and their excreta , sewage, soil, raw and processed water ,cold blooded marine and freshwater animals as well as humans , both healthy and diarrheal ***(Annapura and Synal, 1977, Davis et al., Johnson and Lior,1981, Kaper et al.,1981, Pitarangsi et al.,1982,Buchanan and Palumbo, 1985 , Taylor et al.,1985, Santos et al.,1988).***

In recent years, motile *Aeromonads* have been received an increasing attention as agents of food-born diarrheal diseases in human.

Ewing et al., (1961) recognized three species: *Aeromonas hydrophila* ,

*Aeromona*s c*aviae* and *Aeromona*s *sobria* .

The Aeromonas hydrophila group is collectively referred to as motile *Aeromonads* or mesophilic *Aeromonas* ***(A.P.H.A.,1988).***

Aeromonas hydrophila occurs widely in nature ***(Abeyta and Wekell 1988)*** but is specially common in water supplies and has been recognized as a pathogen of fish and frogs ***(Popoff, 1984).***

Aeomonas are found in fresh, stagnant, estuarine or brackish water world wide . As they are also commonly present in drinking water, they are found in sinks, drain pipes, and household effluents ***(Doyle et al.,1997).***

Aeromonas hydrophila has frequently been found in fish , raw milk , soft cheese and other dairy products .The elaboration of toxin by the microorganism at low temperatures may have significance in food borne diseases when ingested as performed toxin in foods***(Knochel,1989,Ventura et al, 1998,Mauro et al. 1999 and Biar et al .,2000).***

The spoilage potential and pathogenicity of the organism have been correlated to its ability to secrete several extracellular virulent products including enterotoxins, cytotxins ,haemolysine, lipases and proteases ***(Trust and Chipman, 1979 and Ljungh and Wadstrom, 1983).***

Increasing interest concerning the possible role of species *Aeromonas hydrophila* group as a cause of human gastroenteritis, both clinical and laboratory invesigation have been suggested that the species is a significant enteric pathogen ***(Hazen et al.,1978), Gracey et al., (1982) and Burk, 1983) .***

Wadstrom and Ljungh (1991) found that *Aeromonas hydrophila* , *Aeromona*s c*aviae* and *Aeromona*s *sobria* were recovered in 36 out of 50