

## INFLUENCE OF SEASON ON THE MICROBIAL QUALITY OF FRESH AND PROCESSED PRAWN

Apart from the micro-organisms normally associated with skin, slime, gill and intestine of fish, organisms adhering to the surface of utensils with which the material comes into contact during processing (Iyer *et al*, 1966), bacterial quality of water and ice (Iyer and Choudhury 1966), personal hygiene of the workers, sanitary layout of factories, holding conditions like time and temperature etc. (Shelton *et al* 1960) also play an important role in the bacterial quality of the finished product. Season also is known to affect the qualitative and quantitative nature of the microflora associated with fish and fishery products. Castell and Giles (1963) have reported poorest quality in material handled during summer, Raj and Liston (1963) likewise observed high total bacterial count during the warmer months of the year. The present communication deals with the influence of season on the microbial quality of fresh prawn handled under tropical conditions as obtained in India.

The material for the study was collected from the local Grade I freezing

factories whose sanitary conditions remain good and more or less uniform throughout the year. Lots subjected to any special treatment like chlorination, antibiotic dips etc were excluded from the study. Results of analysis of about 1200 samples studied during the years 1965-'67 are tabulated and graphically represented. Table I shows the of samples showing high total count, *faecal streptococci* and *E. coli* in frozen prawns analysed during the year 1965. Figs I, II & III show the fluctuations in the mean logarithmic total bacterial count, *faecal streptococci* and *E. coli* in the raw prawn due to seasonal variations.

Figure I indicates the high incidence of total bacterial count during April-August while high *faecal streptococci* and *E. coli* are encountered during April-June (Fig II) and May-July (Fig III) respectively in fresh prawn. Warmer months i. e. March, April and May favour multiplication of bacteria including *faecal streptococci*, but *E. coli* does not show appreciable change. High incidence of *E. coli* in the raw prawns during rainy seasons

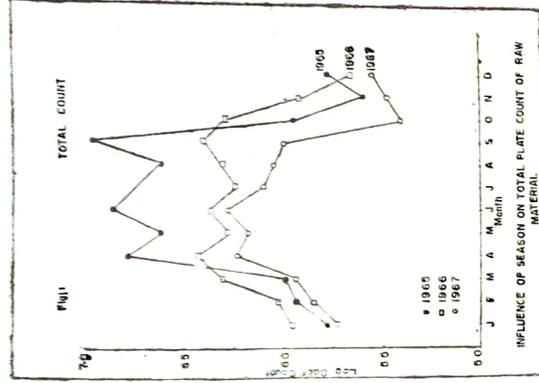


Fig 1

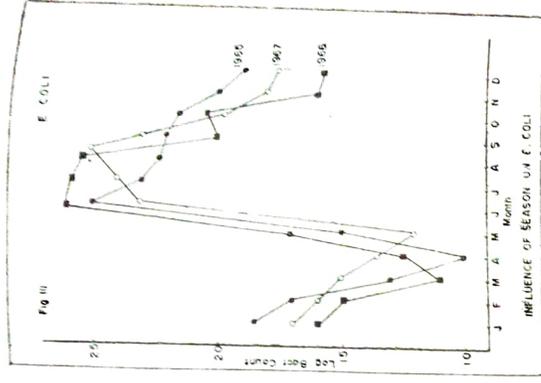


Fig 3

TABLE I PERCENTAGE OF SAMPLES SHOWING HIGH TOTAL BACTERIAL COUNT, FAECAL STREPTOCOCCI AND E. COLI IN FROZEN PRAWN IN 1965

Months	Percentage of samples showing high	
	Total count	Feaecal streptococci
January	25	—
February	12	10
March	30	13
April	33	33
May	42	12
June	45	16
July	14	7
August	9	9
September	0	15
October	—	3
November	0	8
December	0	11

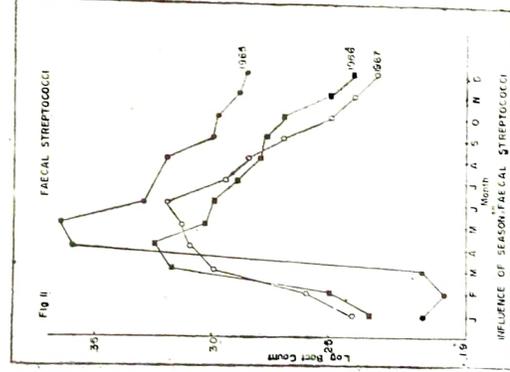


Fig 2

(May-July) is probably due to high degree of faecal pollution of water during the period. With the increase in total bacterial count of the raw material there is a corresponding increase in frozen prawn also (Table I). In frozen prawn too total

bacterial count, *E. coli* and *faecal streptococci* are higher during April-August, May - July and April - June respectively.

Season, to some extent plays a role in controlling the bacterial quality of fresh and frozen fishery products. As seen from

the foregoing study, bacterial counts are higher in certain specific seasons' which emphasise the necessity for stricter sanitary codes in these seasons to maintain a uniform minimum bacterial standard for the processed fishery products.

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