

## SALMONELLAE IN LATES NILOTICUS FISH

BY

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*Lates niloticus* is one of the most common species in River Nile and widely consumed by Egyptians due to its reasonable price and palatability.

Fish is a perishable food as it constitutes a good medium for bacterial multiplication specially under our climatic conditions. Hess (1950) concluded that fish flesh is sterile at the time of capture but being contaminated from the intestinal contents, covering slime, contact surfaces and dust. Emara et al., (1950), W.H.O. (1975); mentioned that fishes are blamed in many food poisoning outbreaks.

Reisler (1952), stated that the risk of salmonella and shigella infections are less in marine fish than in fresh water fish; while Lodenkemper (1952), concluded that salmonellae in fish represents the principal part in food poisoning.

Gaugusz and Malwinsha (1957), reported that 6.0% of fresh water fish caught from Polish rivers and lakes were contaminated with salmonella typhimurium.

Fish may drive salmonella organisms from polluted water or may be contaminated during handling subsequent to capture. (Buttiak 1962). Kawabata (1962), and Shewan (1962), mentioned that escherichia, proteus, salmonella and shigella organisms are the important bacteria causing food poisoning through the consumption of fish and fish products. Halstead (1962), explained that human intestinal disorders resulting from consumption of fish, were allergic and toxic manifestations caused by bacteria or their toxins.

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Gittino (1972), concluded that fish in polluted environments considered passive carriers of bacteria and can retain many human pathogens in their digestive tract or on the skin.

W.H.O. (1975) reported that in some countries fish caught from or kept in polluted water serve as a vehicle of salmonellae.

Heuschmann and Brunner (1974), Lotfi et al., (1974) and Safwat et al., (1988) isolated salmonella organisms from fish; while Sedik (1971), El-Moula (1981) and Binta et al., (1982) failed to detect such organisms during their studies.

#### MATERIALS AND METHODS

A total of 60 fishes (*Lates niloticus*) were collected from the fish markets at Cairo and Giza Governorates. Such samples were packed separately in sterile nylon sacks and directly transported to the laboratory for bacteriological examination for detection of salmonella organisms.

Swab samples were collected from the skin surface and gills, each swab was then suspended separately in a sterile test tube containing 10 ml of 0.1% sterile peptone water; at the same time muscle samples from different localities of each corresponding fish were obtained and homogenized in sterile nylon sacks containing suitable amount of 0.1% sterile pepton water by means of stomacher (Stomacher Lab - Blender 400, Seward Lab, UAC house Black Fiars Road, London Se 19UG Model No. BA 6021). Ten ml from the original suspension were aseptically poured in sterile test tube, then incubated for 24 hours at 37°C as pre-enrichment.

For salmonella screening, Reppaport's (Harvey and Price, 1981 and Rengel and Mendoza 1984) was used

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by transferring 1 ml of each pre - enrichment culture aseptically to 10 ml of Rappaport's broth, then incubated at 43°C for 48 hours. S.S. agar medium was then inoculated from the incubated Rappaport's broth and incubated at 37°C for 24 hours after which non - lactose fermenting colonies were isolated and cultivated on slope agar. The obtained isolates were identified morphologically and biochemically according to the technique described by Cruickshank et al., (1975), and serologically according to Kaufmann (1974).

### RESULTS AND DISCUSSION

*Salmonella typhimurium* could be isolated from the surface of 4 fishes out of 60 bacteriologically examined fish samples (6.67%). Nearly similar results were recorded by Gaugusz and Maliwinska (1957). Moreover, Arcisa (1950). Floyed and Jones (1954), and Goda et al., (1980) isolated salmonella organisms from fish with percentages of 3.44 %, 1.15 % and 2.3% respectively.

Other authors reported the isolation of salmonella organisms from the examined fish groups (Emara et al., 1960; Steiniger and Hahan, 1953; Jay 1970; Heuschmann and Brunner, 1974; Lotfy et al., 1974; and Safwat et al., 1988). On the other hand Sedik (1971), El-Moula (1981), and Binta et al., (1982) failed to isolate salmonellae from examined fish.

Fish may drive salmonella organisms from polluted water or may be contaminated during handling subsequent to capture (Butti, 1962). Besides, Gittino (1972) concluded that fish in polluted environments considered passive carrier of bacteria, and can retain many human pathogens in their digestive tract or on the skin.

*Salmonelliae in lates.....***SUMMARY**

A total of 60 Lates niloticus fish - Kishre El-Bayad- were bacteriologically examined for detection of Salmonella organisms. Salmonella typhimurium could be isolated from the surface of 4 fish samples only (.66%). The public health significance of the isolated organisms was discussed.

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