macrolepidotus. The total Staphylococcal count ranged between 1.0 x 10^1 to 9.6 x10^5 cfu.g-1 with an overall incidence of staphylococci as 46.67%. Among the 14 dried fried sample, 21.43% (n=3) of them harboured coagulase positive Staphylococci (CPS). The isolated 15 CPS were molecularly confirmed to species based on 16S rDNA partial sequences analysis at NCBI public domain as *S. aureus*. Based on maximum identity score, sequences were aligned using multiple sequence alignment (Clustal W) and phylogenetic tree was constructed using PHYLIP program based on Neighbour- Joining (NJ) method. The study clearly indicates the possibility of contamination of *S. aureus* from different sources such as workers, salt and water during the different stages of processing of dried fish such as poor quality raw materials, open drying areas, contamination of cleaning and cutting equipment surface and improper storage etc. It is further suggesting that strict hygienic code of practice is to be followed during the entire chain of processing of dried fish.

SF PO 21

Incidence of *Salmonella* in aquaculture farms of Kerala

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Presence *of Salmonella* in seafood is seen as a sign of poor standard of process hygiene and sanitation. Usually, *Salmonella* is not recognized as being part of the normal microflora in aquaculture environments. For this reason, the incidence of *Salmonella* in aquaculture farms indicates improper adoption of good management practices during pre-culture period, culture period and post culture conditions. Till date scant information is available regarding the prevalence of *Salmonella* in aquaculture farms in Indian context, especially from Kerala. So the present study reports the incidence of *Salmonella* in aquaculture farms in and around Cochin area. About 100 samples from different aquaculture farms were screened for the presence of *Salmonella.* These samples include water, sediment, fishes and feed generally. From poultry integrated aquaculture farming conditions poultry droppings and litter were also analyzed. This study revealed the prevalence of *Salmonella* in aquaculture farms isabout 9.6% which is very low when compared with the occurrence in seafood. The positive samples include mullet intestine, mullet gills, tilapia intestine and poultry litter from various farms. Even though, none of the shrimp farms harbored *Salmonella,* the situation is quite alarming when finfishes are considered. All the isolates were confirmed by bio typing and PCR targeting *invA* gene with 284bp. Serotyping confirmed the presence of *Salmonella typhimurium* in mullet farms possibly the contamination is through feed or organic fertilizers.

SF PO 22

Incidence of *Salmonella* in dry-fish from the local markets of Cochin, Kerala

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World over, the consumption of seafood is increasing gradually in view of its high nutritional value in terms of protein,

minerals, vitamins *etc*. However, the high moisture content, pH and the presence of autolytic enzymes makes it highly perishable in nature. In this context, various convenient seafood products evolved from fresh fishes like dried, salted, smoked, cured, canned and ready-to-eat (RTE) products which usually give more shelf life without much nutrient loss. Among these, drying and salt curing is one of the oldest techniques which are being practiced in many parts of the world. But in this process, there may be chance of contaminants of microbial origins such as *Salmonella* which derived from natural aquatic environment or during processing. Since *Salmonella* species can withstand many stressful conditions its occurrence in dried and salted products with low water activity is always a problem. Hence understanding the behavior of *Salmonella* in salted and dried products is very important from a food safety standpoint. Around 100 dry fishes were collected from local markets in and around Cochin area and screened for *Salmonella*. The incidence rate of *Salmonella* in dry fishes is 4.61%. Dried shrimp, anchovy and sardine were positive for *Salmonella.* Antibiogram profiling was performed against twenty antibiotics and all isolates were multi-drug resistant towards various classes of antibiotics tested.

SF PO 23

Formation of biogenic amines and quality of shrimp (*Feneropenaeus indicus*) treated with combinations of chitosan, NaCl and citric acid under refrigerated storage

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Shelf life of postharvest shrimp varies depending on processing and storage conditions. As seafood is highly susceptible to contamination by microorganisms producing biogenic amines, monitoring of biogenic amine levels under various treatment conditions is essentially important. The effect of 1% chitosan in combination with 1.5% NaCl (treatment 1, T1) and 1.5% citric acid (treatment 2, T2) on the biochemical and microbial quality characteristics and formation of biogenic amines (putrescine, cadaverine, histamine, agmatine, tyramine, spermine and spermidine) of Indian white prawn (*Feneropenaeus indicus*) under refrigerated storage (4±2ºC) was carried out. The biogenic amines which showed specific change during storage were putrescine and cadaverine. The putrscine and cadaverine content of chitosan – NaCl treated sample was significantly lower than that of control ($p<0.05$) on the day of rejection (9^{th} day). The chitosan-NaCl treated sample got rejected on 9^{th} day of storage with a putrescine and cadaverine content of 4.96 and 1.2 ppb respectively. While the chitosan-citric acid treated sample got rejected on 7^{th} day of storage with a putrescine and cadaverine content of 19.35 and 0.34 ppb respectively. A lower increase of pH and TVBN was observed in both the treatments compared to control sample which got rejected sensory wise on 5^{th} day of storage. Loss of freshness and melanosis of treated samples was lower than that of control. The mesophilic count of T1 and T2 reached 7 log cfu/g on 9^{th} and 7^{th} day respectively.