maximum weight gain (15%) and safe level of phosphate residue within 7 hrs of treatment. It is concluded that the phosphate residue, within recommended level, is achievable through different combination of initial phosphate concentration, salt concentration, dipping solution volume and treatment time.

SF PO 19

Antibacterial activity of chitosan and zinc oxide nano-particle incorporated chitosan in different organic solvents

S. VISNUVINAYAGAM[1]*, L.N. MURTHY[1], A. JEYAKUMARI[1], U. PARVATHY[1], G.K. SIVARAMAN[2]

[1]Mumbai Research Centre of ICAR- Central Institute of Fisheries Technology, Vashi, Navi Mumbai, Maharashtra, India; [2]ICAR-Central Institute of Fisheries Technology, Matsyapuri P.O., Willingdon Island, Kochi, Kerala, India;
visnuvinayagam@yahoo.co.in

Chitosan is usually dissolved in mild organic acids for various applications. Most of the previous experiments were carried out using acetic acid as a solvent for chitosan solution preparation. But, limited studies are available regarding antimicrobial properties of chitosan in different organic acids. The present study was carried out to understand the effect of different organic acids *viz*., propionic, lactic, citric, malic, oxalic, acetic, tartaric and benzoic acid on the antimicrobial properties of chitosan. Recently, enhanced antimicrobial activity of chitosan by incorporation of zinc oxide nanoparticles is gaining interest. Hence, in the present study, in addition to chitosan, antimicrobial property of zinc oxide nanoparticle incorporated chitosan (ZnO-NP-CH) in various acids was also comprehended. The biological activity was measured based on well diffusion assay against various food borne and multi drug resistant pathogens such as *E. coli, Salmonella, V. cholera, L. monocytogenes, S. aureus, B. cereus, B. subtilis,* methicillin resistant *Staphylococcus aureus* (MRSA) and *Pseudomonas aeruginosa*. The results indicated varying degrees of antimicrobial activity for chitosan and ZnO-NP-CH in different acids. ZnO-NP-CH exhibited better antimicrobial activity than chitosan alone i.e*.,* around 10 -15 mm wider zone of inhibition. Most of the bacteria resistant to chitosan became susceptible after incorporation of ZnO-NP. Among eight organic acids studied, propionic and acetic acid were found more suitable for chitosan with better antimicrobial activity. The order for the antimicrobial activity was as follows: Propionic>Acetic>Malic>Citric>Oxalic>Lactic >Tartataric>Benzoic acid.

SF PO 20

Coagulase positive *Staphylococci* in dried fish samples from Veraval

G.K. SIVARAMAN[1]*, S. VISNUVINAYAGAM[2], V. MURUGADAS[1], K.N. RANJIT[1], M.M. PRASAD[1]

[1]ICAR- Central Institute of Fisheries Technology, Matsyapuri P.O., Willingdon Island, Kochi, Kerala, India; [2] Mumbai Research Centre of ICAR- Central Institute of Fisheries Technology, Sector 1, Vashi, Navi Mumbai, Maharashtra, India;
**gkshivraman@gmail.com*

The present study was carried out to monitor the incidence of coagulase positive *Staphylococci* (CPS) in dried fish samples (n=30) of Gujarat, India and assessed their molecular heterogeneity based on 16S rDNA sequence analysis. A total of 78 isolates of Staphylococci were recovered from 14 dried fish samples such as *Parapenaeus stylifera*, *Otolithes cuvieri*, *Coilia dussumieri*, *Harpodon nehereus*, *Saurida tumbil*, *Lepturacanthus savala*, *Megalaspis cordyla*, *Arius dussumieri*, *Gerres subfasciatus*, *Aluterus monoceros*, *Stolephorus indicuse* and *Cynogolssus*