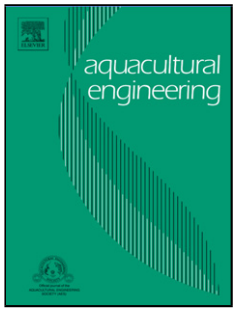

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Influence of tank bottom surface on growth and welfare of Senegalese sole (*Solea senegalensis)*

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Highlights

- Flatfish growth and welfare is influenced by tank surface material
- The epoxy coated surface affect negatively the well-being of soles
- Cement blended with silica fume (SF) admixture promotes higher growth and welfare
- Plain cement improves its suitability for tank construction when SF is added

Abstract

Tank bottom surface is an important question to take into account in flatfish aquaculture considering the intimate contact that the fish have with it. The most usual materials in aquaculture tank surfaces are inert materials such as epoxy resins or plastics with null porosity, and cement that presents a high alkalinity, roughness and porosity. To improve the cement characteristics, silica fume admixture is usually added in construction industry. The aim of this study was to evaluate the effect of three types of tank bottom surfaces on growth and welfare over a *Solea senegalensis* population. Moreover, the degree of fin erosion, the appearance of skin lesions and malpigmentation patterns were also monitored. The bottom surfaces tested were plain cement (CE), the same plain cement blended with silica fume (10 %) (SF) and epoxy coated surface (EP). Specific growth rate for each bottom surface were compared. The Image Processing Activity Index (IPAI) was used to evaluate the Senegalese sole welfare. Higher SGR and lower IPAI values were obtained in the surface of cement with silica fume, suggesting a higher welfare. The use of plain cement affected negatively the performance of fish, probably due to the high pH and alkalinity of the water in direct contact with fish skin. The null porosity of EP seems to be related to the main cause of higher activity level of fish kept on it outcoming