exhibited by *Bacillus subtilis* with *Acinetobacter* sp. where 24.5% of bacteria co-aggregated. Oil spreading and drop collapse assay confirmed the biosurfactant producing ability of isolates. All isolates showed surface hydrophobicity, but *Lactobacillus plantarum* showed maximum affinity toward xylene (75.14%) followed by *Lactobacillus casei* (73.82%). Among the quorum quenching bacteria tested for hemolytic activity, only two (*Bacillus thuringiensis, Bacillus cereus*) showed β-hemolysis. All bacteria were negative for *gelE, cob, ccf, cyllM, cylB, cylA* and *efaAfs*, except *Bacillus cereus, Bacillus thuringiensis* and *Bacillus subtilis* that were positive for *GelE* and *cob.* Present study divulges that all quorum quenching bacteria tested have excellent probiotic potential and further studies need to be performed to confirm their potential health benefits and applications in aquaculture sector.

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Isolation of quorum quenching bacteria and their impact on virulence of *Vibrio harveyi*

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Quorum Sensing (QS) is a bacterial cell to cell communication mechanism, which is responsible for regulation of gene expression that mediates the production of virulence factors in a cell density-dependent manner. Inactivation of quorum sensing signal molecules of pathogenic bacteria like acylhomoserine lactones (AHLs) has been proposed as a novel biotherapeutic method to fight against bacterial diseases in aquaculture. In this study, potential quorum quenching property of virulence factor production of shrimp pathogen *V. harveyi* by *Bacillus* spp. was determined. One hundred and twenty two isolates of *Bacillus* spp. isolated from aquaculture ponds and mangrove soil were screened for their ability to degrade synthetic AHLs; N-butyryl-dl-homoserine lactone (C4-HSL), N-hexanoyl-DL-homoserine lactone (C6-HSL), N-octanoyl-DL-homoserine lactone (C8-HSL), N-decanoyl-DL-homoserine lactone (C10-HSL) and N-dodecanoyl-DL-homoserine lactone (C12-HSL) using agar-plate well diffusion assays with reporter strain, *Chromobacterium violaceum* CV026. Based on the ability to degrade all the five synthetic AHLs tested, seventeen *Bacillus* spp. isolates were selected for further study. None these isolates showed direct inhibitory effect on the growth of *V. harveyi* when co-cultured. Quantification of AHLs degradation activity evaluated using microplate assay revealed that of the seventeen isolates tested, AHL degradation potential was highest in *B. subtilis MFB* 10, *B. lentus MFB* 2 and *B. firmus* MFB 7 and among these *B. subtilis* MFB 10 exhibited maximum activity (78%). In addition to the inhibition of hemolytic activity and biofilm formation in *V. harveyi,* supernatant of the *B. subtilis* MFB 10 suppressed the production of various virulence factors such as protease, lipase, phospholipase, caseinase, gelatinase and chitinase. Furthermore this isolate was able to survive at a wide range of temperatures, pH values, and NaCl levels. Thus the study suggests the potential of AHLs degrading bacteria as an alternative for antibiotics in aquaculture for controlling bacterial diseases.

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Microbial assessment of aquaculture probiotics sold in the Indian market

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Probiotics are increasingly being used in aquaculture as an alternative strategy to antibiotic use in the management of aquatic diseases and water quality in aquaculture. The study was conducted to assess the microbial quality of fifty eight aquaculture probiotic products sold in Andhra Pradesh, India. It was found that only 41% of the products had microbial count and composition on the label, 17% had only microbial count, 16% had microbial composition only while 26% of products did not provide any information regarding the microbial count and composition. Suitable media were used for determination of microbial counts of these probiotics. Based on the analysis, only 22% of the products contained microbial count as claimed in the label. Even though 21% of the products had declared that they contain nitrifying, denitrifying bacteria or *Thiobacillus* spp., we were not able to isolate these bacteria from any of the products. About 10% of the probiotic products had counts lower than 10^2 cfu g^{-1}. The study points to the need for a regulatory framework for probiotics sold in the Indian market.

AH OR 28

Microbiological impact of O*cimum scantum* supplemented diets on certain non-specific immune sites of *Macrobrachium rosenbergii*

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Aquaculture is an excellent, explorable avenue for a state like Kerala in India. Unplanned mushrooming growth of shrimp farms in developing countries created unsustainable environmental problems. Consequently, the emphasis of coastal aquaculture, especially shrimp culture, has shifted from maximizing production to sustainable production with minimum damage to environment. *Macrobrachium rosenbergii* is an economically important species of prawn that is gaining prominence in culture fisheries due to its sturdy, fast growth, attractive size and better meat quality. The *Ocimum sanctum* (tulasi) is a traditional medicinal plant used in Ayurvedic system of medicine for a number of human health problems. Phytochemical compounds in leaf include eugenol (volatile oil), ursolic acid (triterpenoid), rosmarinic acid (phenylpropanoid) other active compounds includes caryphyllene and oleanolic acid. Seeds contain linoleic acid and linolenic acid. Nutritional components include vitamin A and C, minerals calcium, iron and zinc as well as chlorophyll. Tannins, alkaloids, glycosides and saponins are abundant in Tulsi. The present investigation was carried out to assess the alterations in the microbial profile at certain non specific immune sites of *M. rosenbergii* supplemented with *Ocimum sanctum*. The observations are reported and discussed in this paper.

AH OR 29

Antimicrobial resistance analysis of bacterial isolates from river Ganga and Mandakini indicates high AMR

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