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### Impact of buffalo gut associated *Pediococcus pentosaceus* SPARC2 on growth performance and gut microbiota of tilapia fish (*Oreochromis niloticus*)

A gut associated probiotic bacterium plays an important role in animal health and production performance. The aim of the present study was to determine the impact of the *Pediococcus pentosaceus* SPARC2 in growth performance blood profile of fish. Buffalo gut isolated and whole genome sequenced based identified (accession number JAHQJK000000000) *Pediococcus pentosaceus* SPARC2 was used for the preparation of the lab probiotic feed for fish. Tilapia fish (*Oreochromis niloticus*) was used for the *in vivo* feeding trials. The results showed that the body weight of the fish in probiotic fed group was significantly ( $p < 0.05$ ) improved after feeding the *Pediococcus pentosaceus* SPARC2 supplementation ( $1 \times 10^9$  CFU/g) for 90 days. The feed conversion ratio of probiotic fed group showed better ( $2.85 \pm 0.05$ ) results as compared to the control group ( $3.18 \pm 0.76$ ). The *Pediococcus pentosaceus* SPARC2 supplementation significantly ( $p < 0.05$ ) improved meat quality in term of crude protein

and fats contents. Our results showed that based upon the animal gut isolated *Pediococcus pentosaceus* SPARC2, it could be used as a target-based probiotic in animal feed to improve the growth performance of fish.

#### Speaker Biography

Shakira Ghazanfar got her Ph. D. degree in Microbiology/ Probiotic Specialists. She is working as Senior Scientific Officer, Functional Genomics and Bioinformatics, National Agricultural Research Centre, Pakistan since 2010. She was regarded among the pioneers, who have initiated animal probiotic product preparation work based on research to improve livestock productivity in Pakistan by using local isolated microbial strains. She worked on various projects related to the improve livestock productivity based on probiotic. She is an active researcher and produced many publications in well reputed journals and conferences and published many research papers and book chapters and engaged in research supervising multiple students at PhD, Graduate and Undergraduate level.

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