

SUB-LOW SALINITY IMPACT ON SURVIVAL, GROWTH, AND MEAT QUALITY OF THE PACIFIC ABALONE (*Haliotis discus hannai*) AND HYBRIDS

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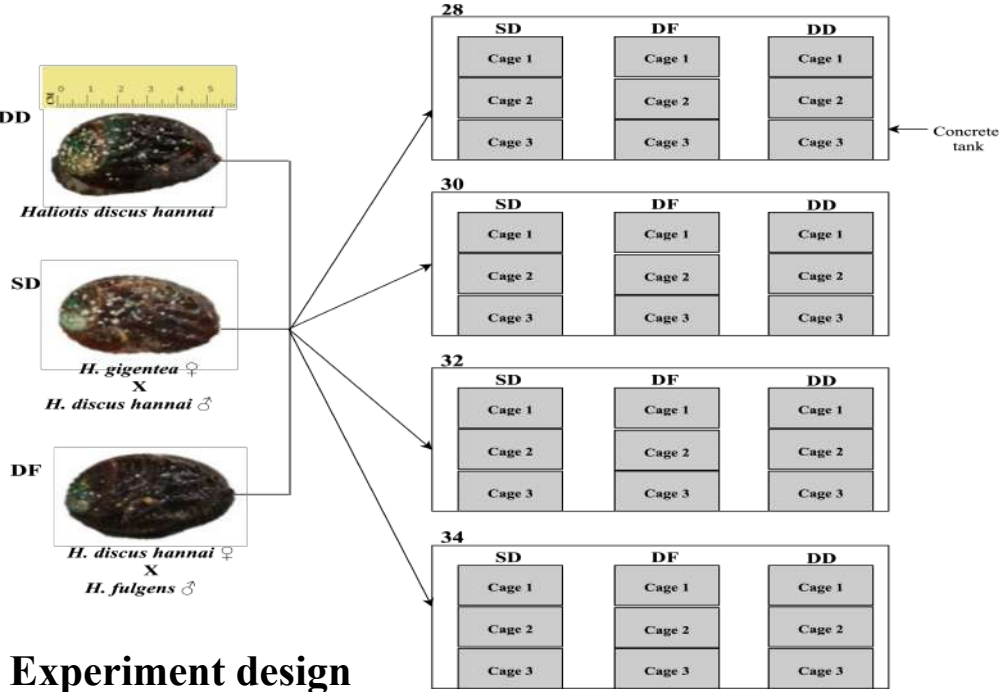
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ABSTRACT

After almost 30 years of commercial farming, China has emerged as the leading global producer and consumer of abalone. In recent years, suboptimal environmental conditions have been frequently reported to impact aquaculture organisms negatively. Salinity is an important environmental factor. Its fluctuation will affect survival, growth, and potentially, the meat quality of the organisms with narrow salt tolerance cultured in the coastal and inner bay. However, interspecific hybrids have been of great use to the aquaculture industry in withstanding environmental stresses, and their farming has gained popularity on most abalone farms in China. This work ascertained the influence of sub-low salinities (28 and 30) on the production traits and nutrient composition of the Pacific abalone *Haliotis discus hannai* (DD) and two of its hybrids (DF and SD). The results infer that the Pacific abalone and its hybrids could maintain good meat quality and survival under a range of 28-34 of salinity, promoting the growth of cultured abalone under the sub-low salinity of 28.

METHODOLOGY

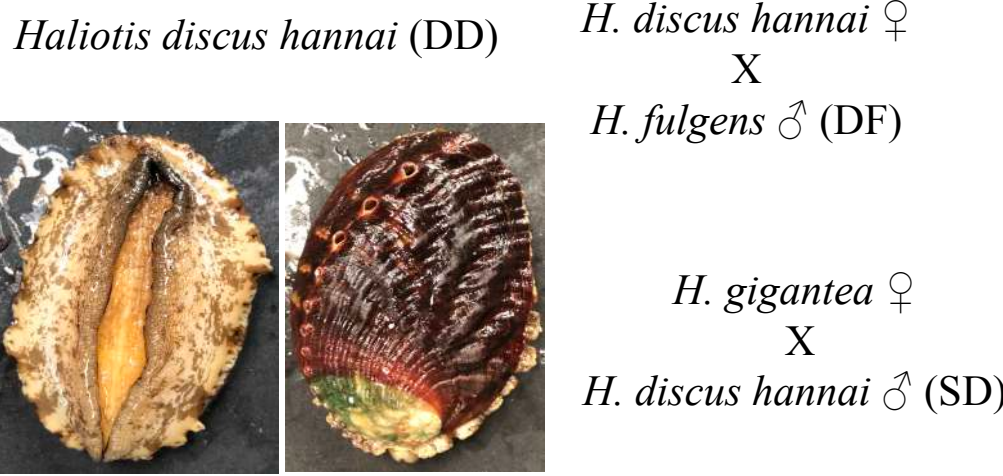
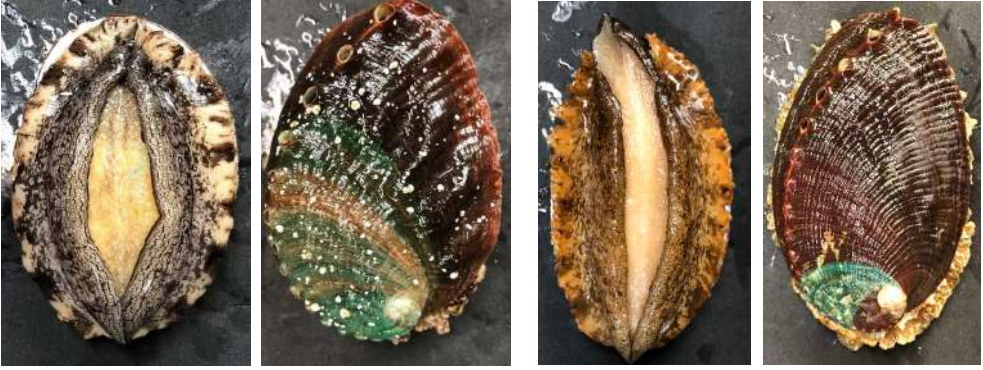


Experiment design

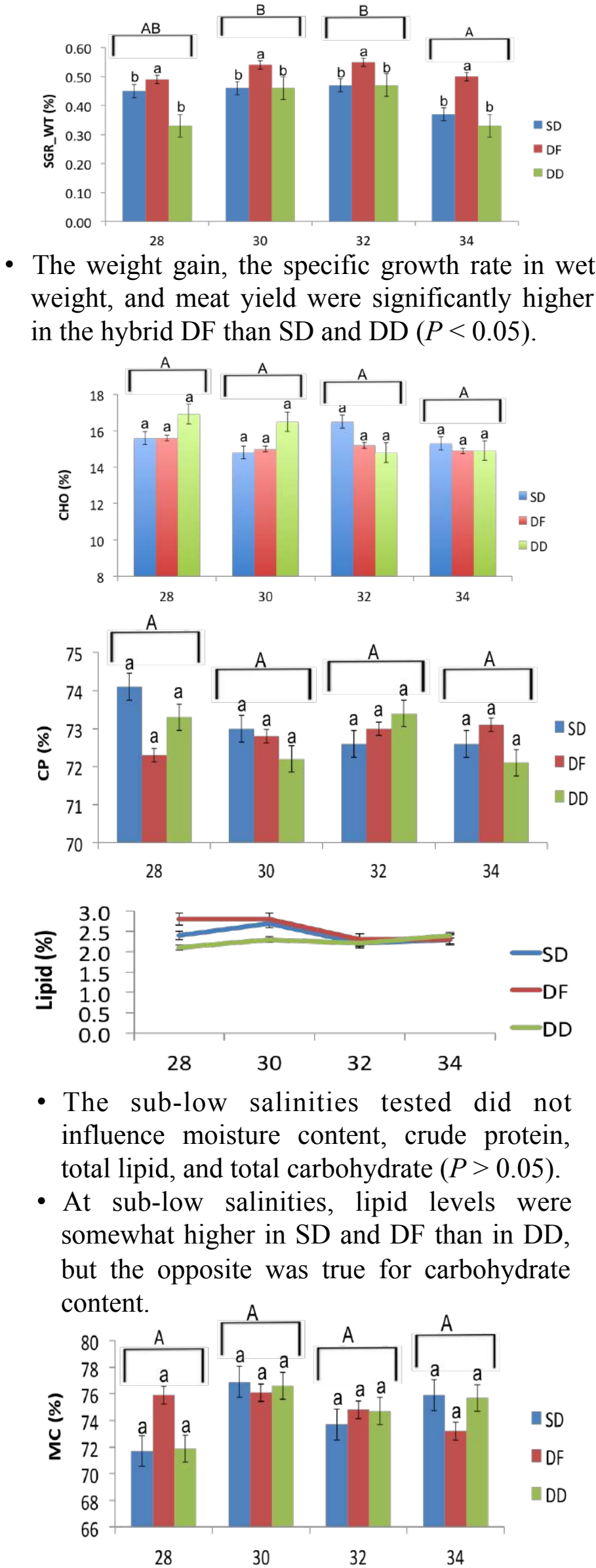
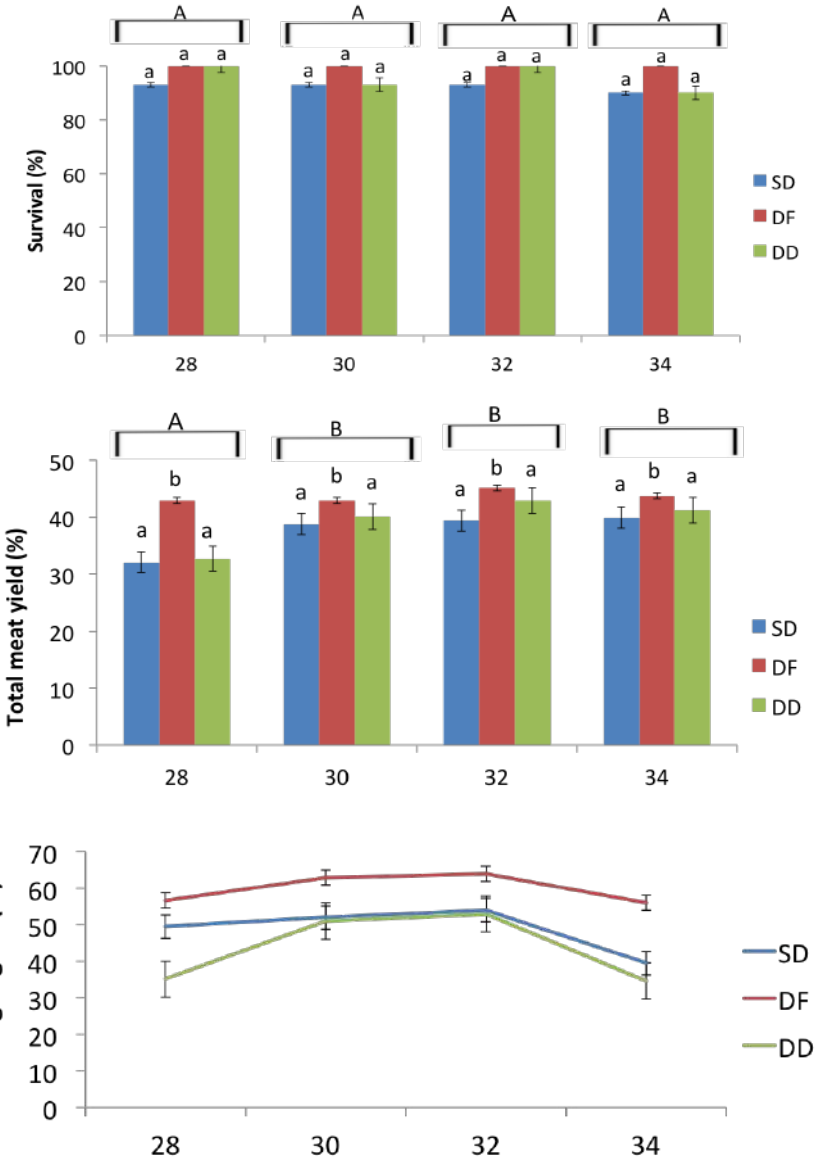
- 360 abalones were subjected to four salinity levels (28, 30, 32, and 34) for ninety days
- The biochemical composition of the abalone meat was checked by the proximate analysis method.

ACKNOWLEDGEMENT

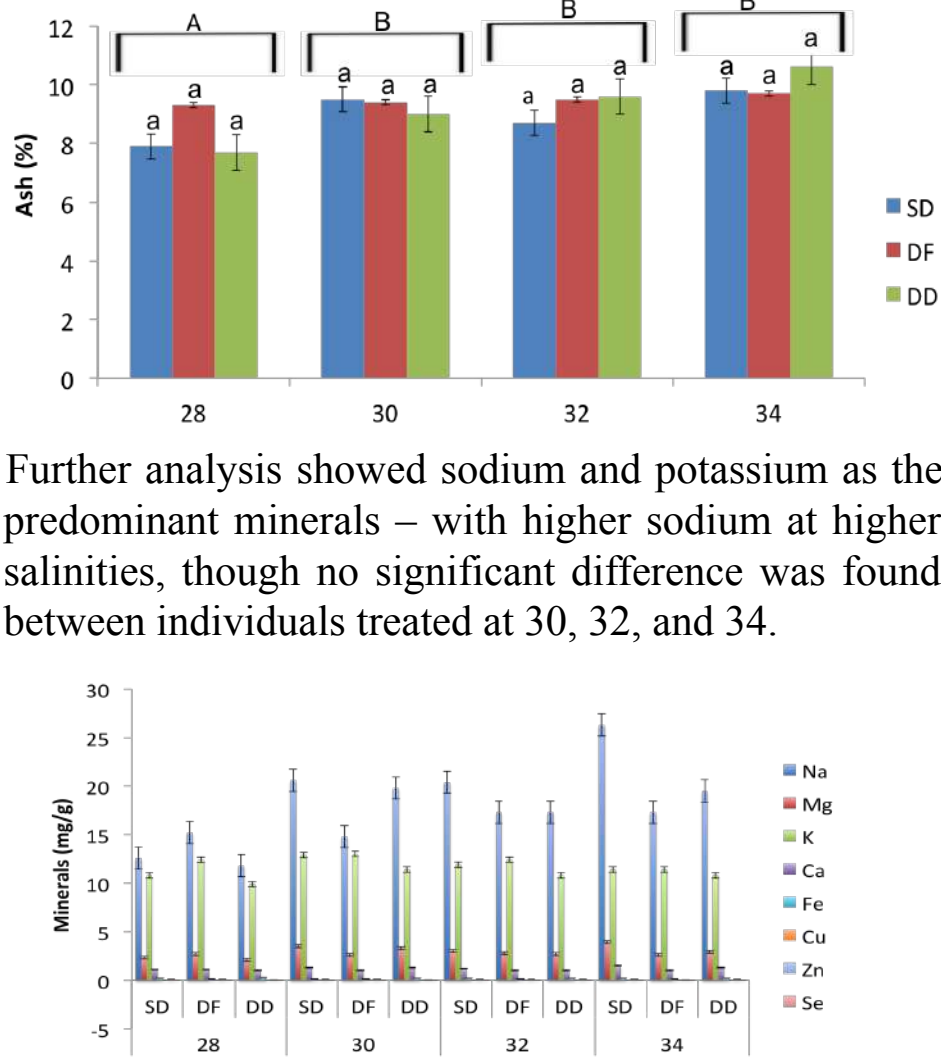
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RESULT



- Total minerals (ash) was influenced by salinity ($P < 0.05$). Individuals reared at 28 significantly differed from those of the other three treatments, but there was no significant difference between the other three groups ($P > 0.05$).
- Further analysis showed sodium and potassium as the predominant minerals – with higher sodium at higher salinities, though no significant difference was found between individuals treated at 30, 32, and 34.
- The accumulation of discrete minerals by the species significantly differed from one mineral to the other and proved to be species-specific.
- SD demonstrated superior content of most essential minerals over DF and DD



CONCLUSION

- Though the condition index and wet weight of abalones might be negatively impacted at sub-low salinities, abalones are well able to conserve their nutrient hoards, hence, remain nutritious at the sub-low salinities tested.
- The hybrids are equally good species to combat malnutrition, offering even faster growth rates, higher survival, and relatively high content of essential minerals.
- Hybridization could, thus, be a potential method to breed the more stress-resilient aquatic animals.