عنوان مقاله:

Zinc-threonine enriched yeast improved the growth and mineral composition of marine rotifer, Brachionus plicatilis

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خلاصه مقاله:

Growth and survival rate in the larval stages of marine fish are influenced by the live feeds. Different methods were used for enrichment of the live feeds with vitamins and fatty acids, however, those methods cannot be used for soluble materials such as zinc. So, in this research, the effects of zinc-threonine enriched Saccharomyces cerevisiae, on growth factors and mineral composition of marine rotifer, Brachionus plicatilis was investigated. For this purpose, rotifers in four groups including: ۱) yeast without enrichment (the control), ۲) yeast containing ۱۸.۲۲ mg g-۱ of zinc ۳) yeast containing ۲۳.۷۶ mg g-۱ of zinc and ۴) yeast containing ۴۶.۱۵ mg g-۱ of zinc were cultured for ۱۰ days. Based on results, in group with ۴۶.۱۵ mg g-۱ of zinc-threonine the specific growth rate (SGR) and mineral composition of rotifers significantly improved (p<۰.۰۵). Maximum number of rotifers and eggs were ۲۱۹.۳±۲.۰ and ۳۰.۳±۱۱.۰ number ml-۱, respectively. The eggs ratio (the number of eggs/total number of female rotifers) and SGR is related to the group of ۲۳.۷۶ mg g-۱ and ۴۶.۱۵ mg g-۱ of zinc-threonine, respectively. Highest amount of zinc in treatment ۴ was ۹۷۷± ۴.۹۹ mg kg-۱ of rotifers. Also the amount of Cu in treatment ۴ was significantly higher than other groups. Conversely, by increasing zinc content, other ions levels like Fe and Mn were significantly decreased (p<۰.۰۵). In conclusion, zinc-threonine enriched yeast could improve the growth, reproduction and mineral composition of marine rotifers, Brachionus plicatilis.

کلمات کلیدی:

Yeast, Saccharomyces cerevisiae, Zinc-threonine, Mineral composition, Rotifer, Brachionus plicatilis