Genetic diversity of the mysid *Mesopodopsis africana* along the KwaZulu-Natal coast, South Africa using microsatellite markers

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BACKGROUND

Genetic differentiation of a species or population can occur due to selection, migration, reproductive and physical isolation. Mysids are widely distributed in estuarine environments, where they often contribute the bulk of the zooplankton biomass and play an important role in trophic transfer. The mysid *Mesopodopsis africana* is a key zooplankton species found in many estuarine systems along the east coast of South Africa (KwaZulu-Natal, KZN). Mysids have short life spans, grow rapidly, produce more than one generation per annum and have limited ability to disperse. This, in addition to the contrasting environmental conditions experienced in the different systems they inhabit, may allow for genetic differentiation in the various populations. This study aims to determine whether *M. africana* populations along the KZN coast are different, by assessing genetic variation using highly variable genetic markers (microsatellites).

METHODS

DNA was extracted from individual mysids from five sites along the KZN coastline and amplified using Multiplex PCR. These samples were then sent for next generation sequencing.

RESULTS AND CONCLUSIONS

Genetic variation among the various populations is expected, especially for those stations which are geographically isolated, either by physical distance or barriers to connectivity. This study reveals important ecological and evolutionary patterns and processes of mysid population dynamics and connectivity.

Key words: Zooplankton, Genetic diversity, Microsatellites