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Genetic and morphological characteristics of wild populations and captive stocks of the noble crayfish (*Astacus astacus* L.) in Estonia

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There are about 20 crayfish farms in Estonia which produce and sell noble crayfish for restocking to natural waterbodies and/or for human consumption. So far, the origin of captive stocks and their genetic and morphological characteristics have not been studied and likewise, there is lack of information about genetic diversity and population structure in a wild. There is a risk that current broodstock management practices in these farms may lead to increase inbreeding and loss of variation. The aim of this study was to get an overview of genetic diversity, population genetic structure and morphological characteristics of captive stocks and wild populations of the noble crayfish in Estonia. A total of 1923 individuals from six crayfish farms and 38 natural lakes and rivers in Estonia were analyzed using 19 polymorphic tetranucleotide repeat microsatellite markers. For comparison, two populations from Czech Republic were included. The results showed that Estonian noble crayfish populations were on an average less variable than the Czech populations and formed two clear genetic clusters according to their geographic origin (island of Saaremaa and mainland Estonia). The captive stocks were genetically similar to the wild populations of the same region and displayed no significant loss of genetic variability. However, two captive stocks possessed increased levels of inbreeding. The morphological characteristics (nine traits) were measured in 199 females and 398 males from two crayfish farms and from 12 wild populations. Again, the crayfish from island of Saaremaa and mainland Estonia displayed significant differences of their morphological traits.

Biography

Katrin Kaldre is a PhD student in the Estonian University of Life Sciences.

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