ARCTIC CHAR IN ITALY: FROM THE WILD TO THE FISH FARM BY USING DNA MARKERS

A. GANDOLFI*, F. CIUTTI*, F. MERATI**, M.S. GRANDO*

*) Istituto Agrario di San Michele all’Adige, Via Mach 1, 38010 Trento
andrea.gandolfi@ismaa.it
**) Studio Idrobiologico Lombardo, Via Einstein 24, Gaggiano, Milano

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In Italy, the Arctic char Salvelinus alpinus is considered to be naturally occurring only in Trentino where populations with different levels of natural and historical isolation and anthropic impact are thought to be originated as a relict from the last glaciation. They represent the southern limit of the species areal and have never been included in previous genetic studies. In order to evaluate the local populations nativeness and uniqueness and to test and validate the hypothesis of their phylogeographic origin, we characterized hundreds of individuals sampled from 22 lakes in Trentino, Northern Alps and North of Europe. Moreover, as wild stocks are an interesting resource for development of competitive aquaculture, we started reproduction and rearing experiments with a view to provide experience basis to local farmers. Our aim is to propose selection programs that use molecular marker tagging for individual animals grown together from birth in a communal rearing strategy as an alternative to the traditional separate tank approach.

First DNA markers applied to the parentage assignment of progeny provided critical information about the broodstock used at the beginning of the domestication program. They continue to be an essential tool for monitoring genetic diversity and controlling inbreeding throughout the process of broodstock development.