

SELECTION FROM AN INTERSPECIFIC HYBRID POPULATION OF TWO STRAINS OF FAST GROWING AND SALINITY TOLERANT TILAPIA

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Abstract

In interspecific tilapia hybrids, the genes of the two species are associating and combining as they would in ordinary pure species offspring's. Also, unlike most animal, interspecific tilapia hybrids are fertile. These features allow to select from a hybrid population, synthetic strains showing an association of characters one would not find in a pure species.

A project conducted in the Philippines between BFAR, PCAMRD and CIRAD is currently selecting, from an inter-specific hybrid population, two fast growing tilapia strains with a high salinity tolerance.

At first, synthetic hybrid populations have been created through a process of successive hybridisations and back-crossings between *O. niloticus* and *O. mossambicus*. Short term and long term testing emphasized the high salinity tolerance of the various hybrid populations produced: the two different F1, and their back-crosses and second back-crosses with *O. mossambicus*.

The hybrid population at the level of the first back-cross with *O. mossambicus*, is showing a salinity tolerance close to the one of pure *O. mossambicus*; it was decided that selection for growth would be conducted on the basis of that population. Selection is achieved under a classic "within families" scheme. Red tilapia is used as internal control to evaluate the genetic gain through the selection process.

Selection is conducted under two different farming environments: extensive with low densities and no feeding and intensive with high densities and commercial feeding. Therefore, two selected strains will be produced matching the need of both extensive and intensive farming in brackishwater.

This paper describes and analyses the various stages of this hybridisation and selection program.