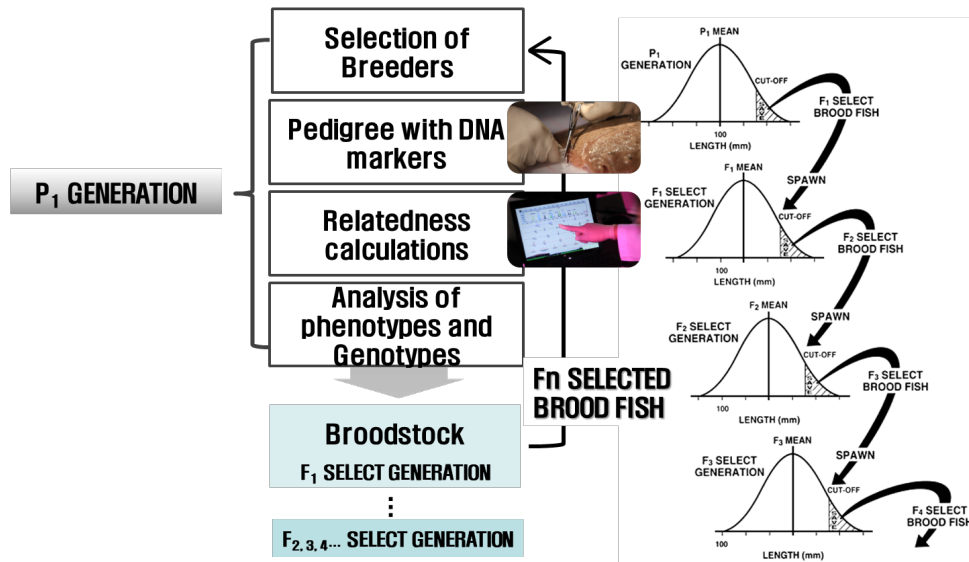


State of the art Breeding Program



The breeding program for BluGen flounder employs the most updated life science information using DNA chip technology.

Since we want to improve the most valuable traits (phenotypes) of fish such as growth rate, FCR, and disease resistances, we have to set up a very careful breeding program. Of course, we always balance between cost and output.

We grow all candidate fishes in a same tank to minimize the environmental effects (maximizing the genetic effects on the target phenotypes). We put all candidate fish from about 300 families with a variety of genetic platforms.

We keep them all in the same environmental conditions and feed the same feed, and observe the differences between families and also between individuals. We select the best performing fish and analyze them using a DNA chip to identify the families (parentage assignment) and genes responsible for the traits. (ex., genes promoting the fast growth).

We also use a very complicate statistical model to calculate heritability and breeding values of each fish for the target traits.

The index of the best families will be identified and also individuals within a family will be ranked according to the breeding value for the traits.

The most important thing here is to prevent the high inbreeding rate that will give a catastrophic effect on the fish breeding if we ignore the effect in a long term breeding. The DNA analysis will provide the genetic relatedness between families and we can avoid the closely related families for mating.

From the combined results from all analyses mentioned above, we can choose the best males and females to breed for the next generation and also for the commercial sales. This activity gives about 10-20% improvement from the previous generation according to the filed verifications.