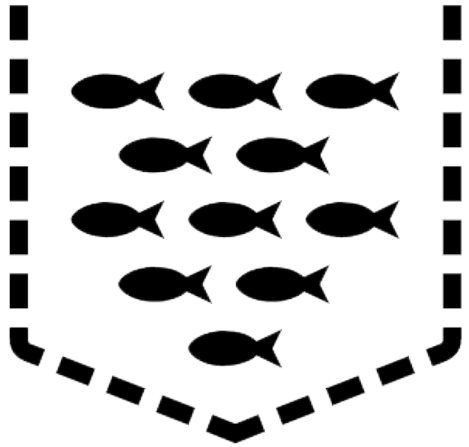
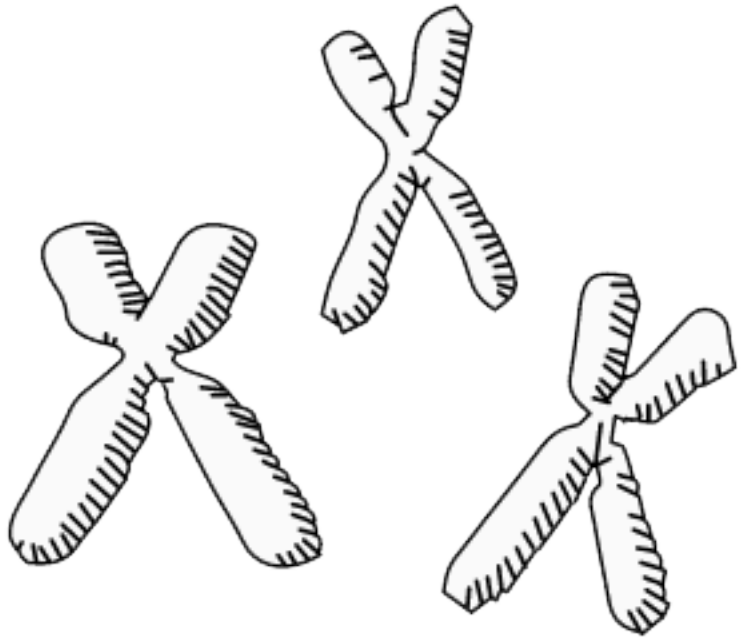
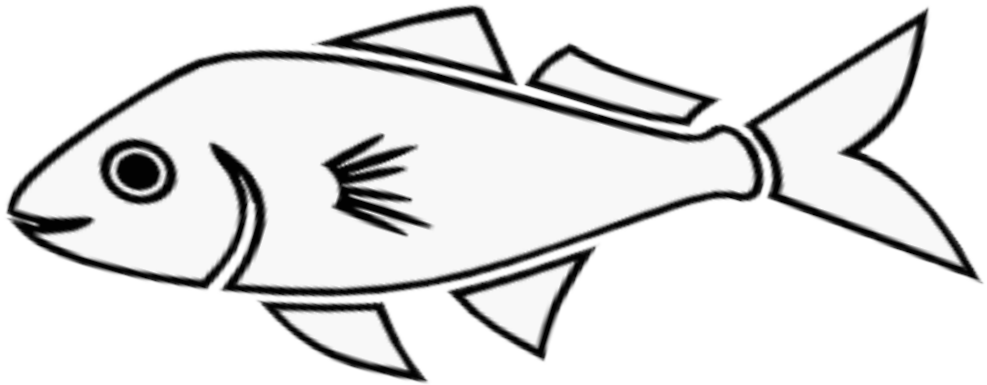


AQS 224 Fish Breeding

Dr. F. Sertel SEÇER





1. Week Domestication, Genetic Improvement Practices in Aquaculture

2. Week Selective breeding / production in seafood

3. Week Theoretical Foundations of Cultivation and Selection

4. Week Breeding Programs

5. Week Strategies for Breeding

6. Week Selection and Mating Design Methods

7. Week Estimation of Breeding Values

8. Week Genotype and Environment Interaction

9. Week Calculating the Selection Response

10. Week Side Effects in Fish Breeding Practices

11. Week Biotechnology in Fish Farming

12. Week Reproduction Techniques in Fish Breeding 1

13. Week Reproduction Techniques in Fish Breeding 2

14. Week Economic Evaluation of Fish Farming

6. Week

Selection and Mating Design Methods

- Factors Affecting Allele Frequencies (Migration , Selection, Mutation, Genetic Drift)
- Choice of Selection Method
- Pedigree Selection
- Individual Selection
- Family Selection
- Within-Family Selection
- Progeny Testing
- Correlated Response and Indirect Selection
- Combined Selection
- Multiple Trait Selection and Index Selection
- Comparing Different Selection Methods
- Mass Spawning
- Single Pair Mating
- Nested Mating Design
- Factorial Mating
- Connectedness

- Migration is a method of particular interest when a given population is clearly inferior to other populations.

Gjedrem, T., & Baranski, M. (2010)

- Selection is the most important strategy to make long-term changes to a population, and is particularly the case for species with high fecundity.

Gjedrem, T., & Baranski, M. (2010)

- Mutations occur naturally and at a fairly stable rate in living organisms, often resulting from something going wrong during the cell division process.

Gjedrem, T., & Baranski, M. (2010)

- Genetic drift is the process of change in allele frequencies that occurs entirely by chance, and is an important concept in population genetics.

Gjedrem, T., & Baranski, M. (2010)

- The different selection methods that can be applied in a breeding program were used for aquatic species.
- Individual and family based selection are the most commonly used strategies

Gjedrem, T., & Baranski, M. (2010)

- Target traits for which genetic improvement is desired
- Feasibility of recording the trait on live animals
- Magnitude of heritability for the traits in question
- Reproduction capacity of the species

Gjedrem, T., & Baranski, M. (2010)

- A comparison of expected selection responses from individual, family, with in family and combined family and within-family selection demonstrated the superiority of the combined selection strategy

Gjedrem, T., & Baranski, M. (2010)

Reference

- Gjedrem, T., & Baranski, M. (2010). *Selective breeding in aquaculture: an introduction* (Vol. 10). Springer Science & Business Media.