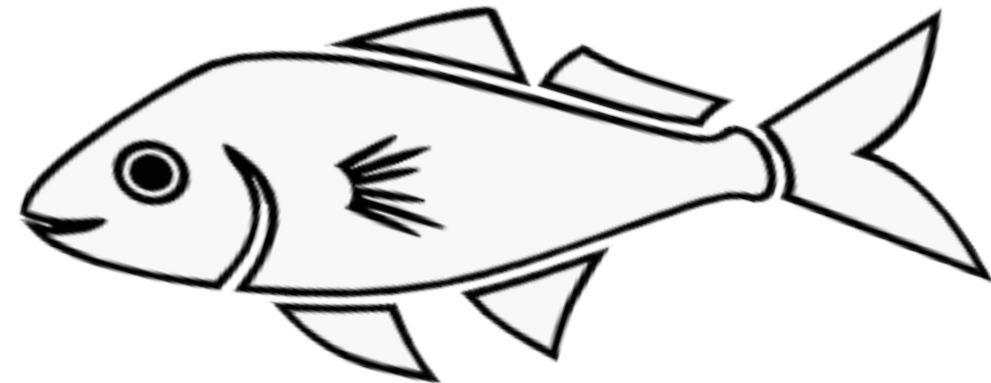
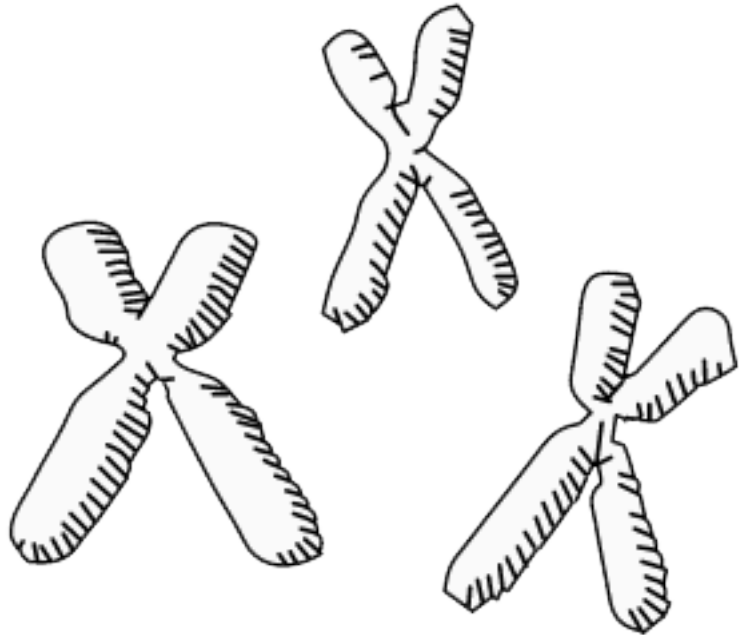


# AQS 224 Fish Breeding

Dr. F. Sertel SEÇER



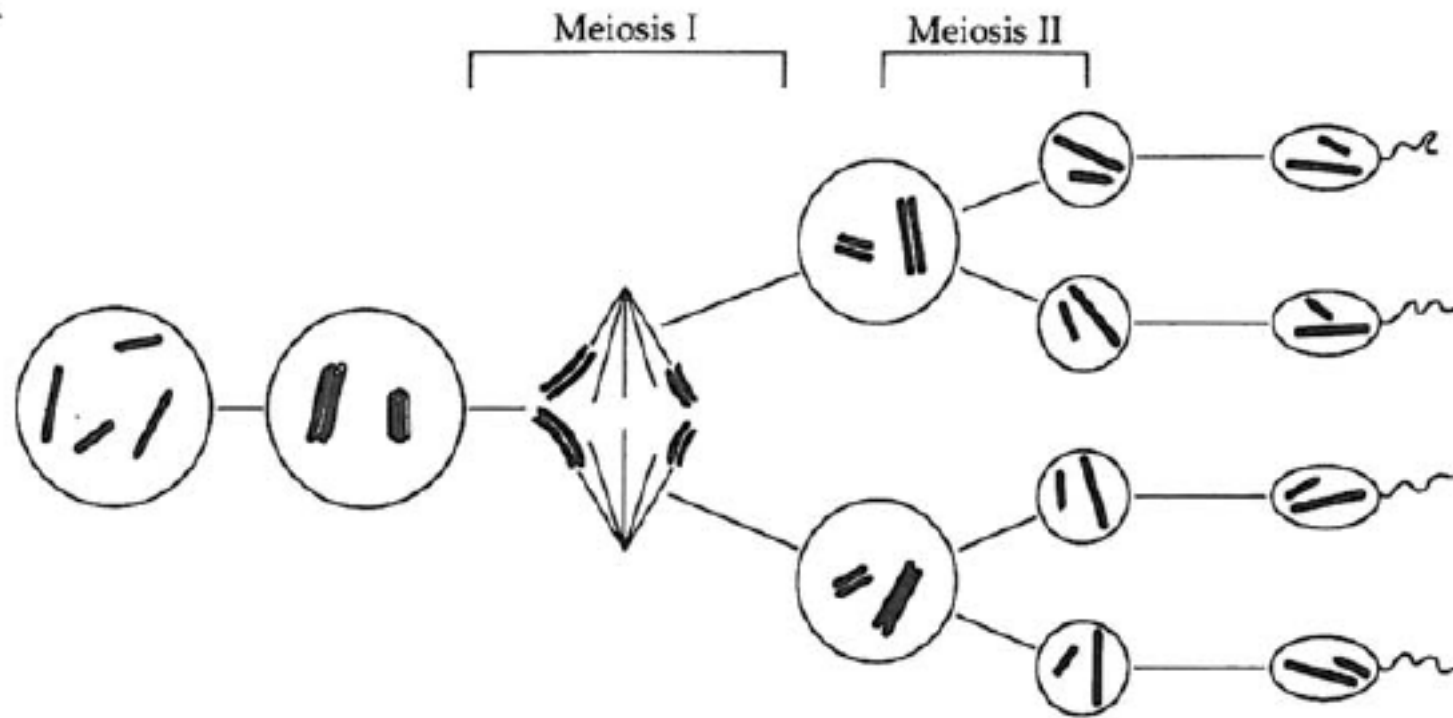
1. Week Domestication, Genetic Improvement Practices in Aquaculture
2. Week Selective breeding / production in seafood
- 3. Week Theoretical Foundations of Cultivation and Selection**
4. Week Breeding Programs
5. Week Strategies for Breeding
6. Week Selection and Mating Design Methods
7. Week Estimation 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

# 3. Week

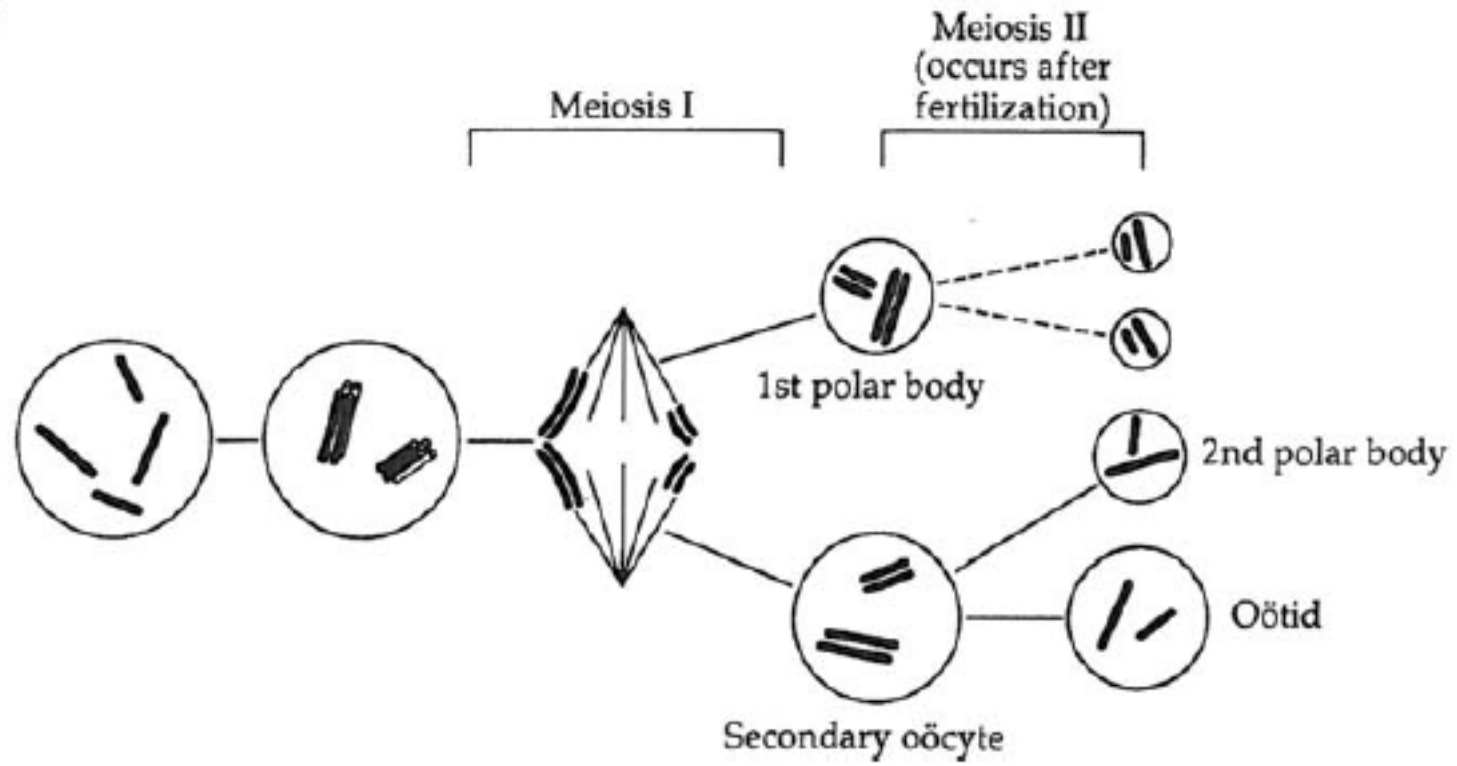
## Theoretical Foundations of Cultivation and Selection

- The Cell
- Basic Genetics
- Variation
- Estimation of Variation and Covariation
- Inbreeding and Relatedness
- Crossbreeding
- Pure breeding
- Selection

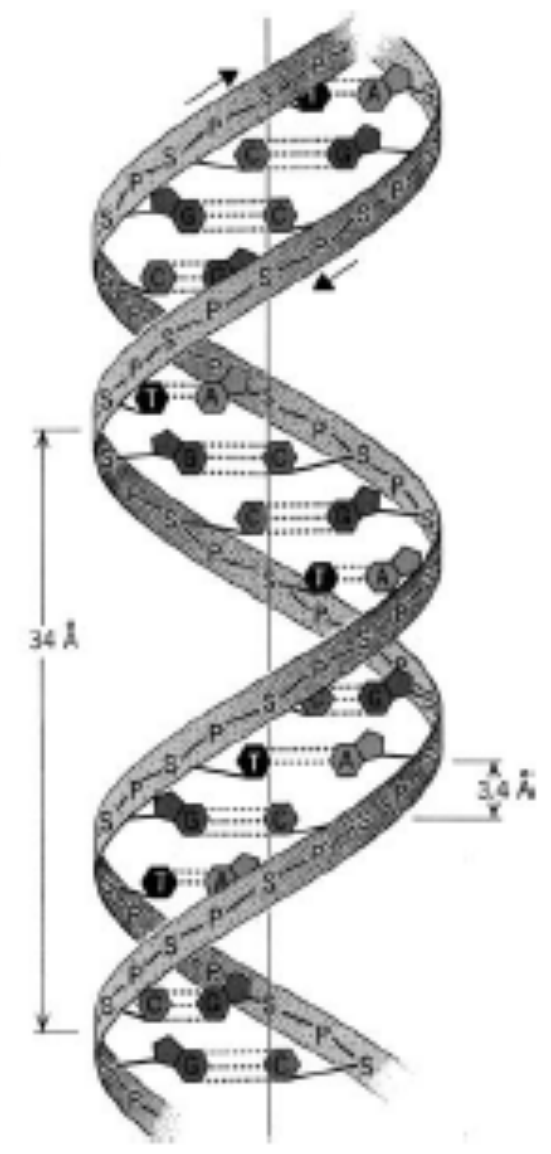
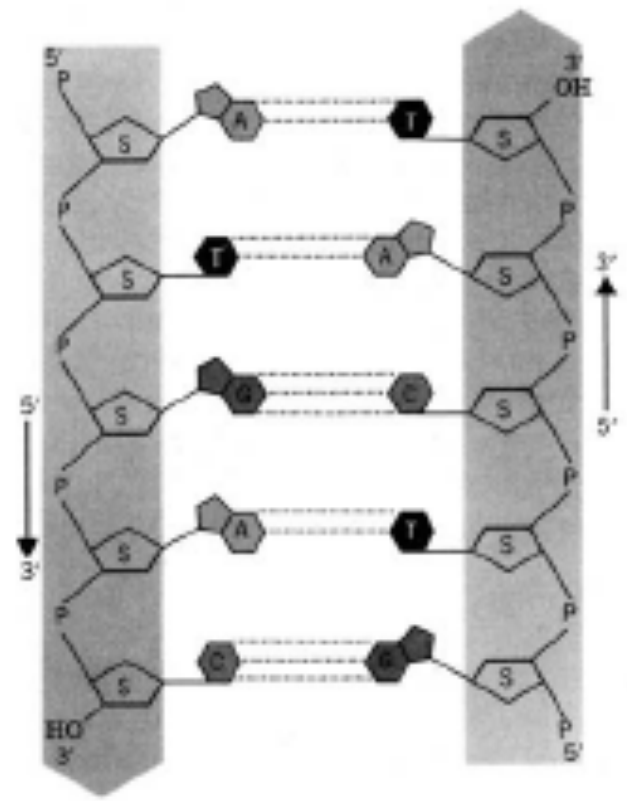
A



**B**



- Mendel's first law: The Law of Segregation. Members of each pair of alleles separate when gametes are formed. A gamete will receive one allele or the other.
- Mendel's second law: The Law of Independent Assortment. Two or more pairs of alleles segregate independently of one another during gamete formation.



Albino *aa*  
(Yellow colour)



X



Normal colour *AA*

Zygote *Aa*



Normal colour *Aa*



X



Normal colour *Aa*

$\frac{1}{4}$  albino



Yellow colour



*aa*



*AA*



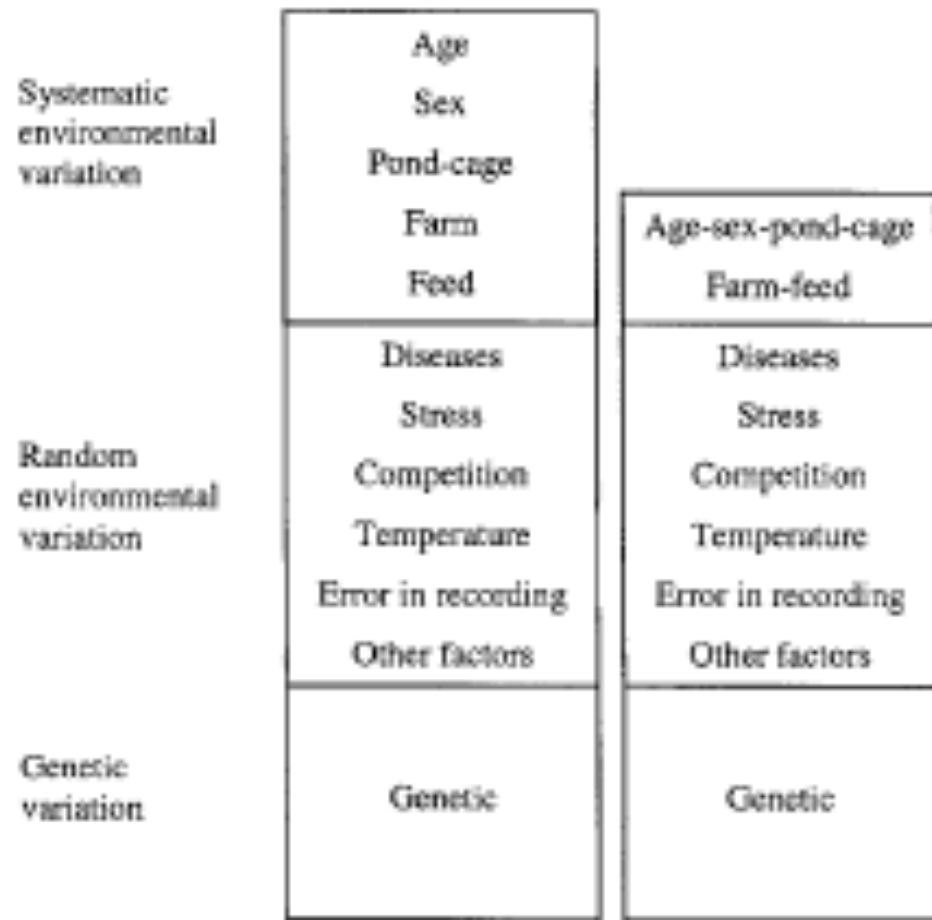
*Aa*

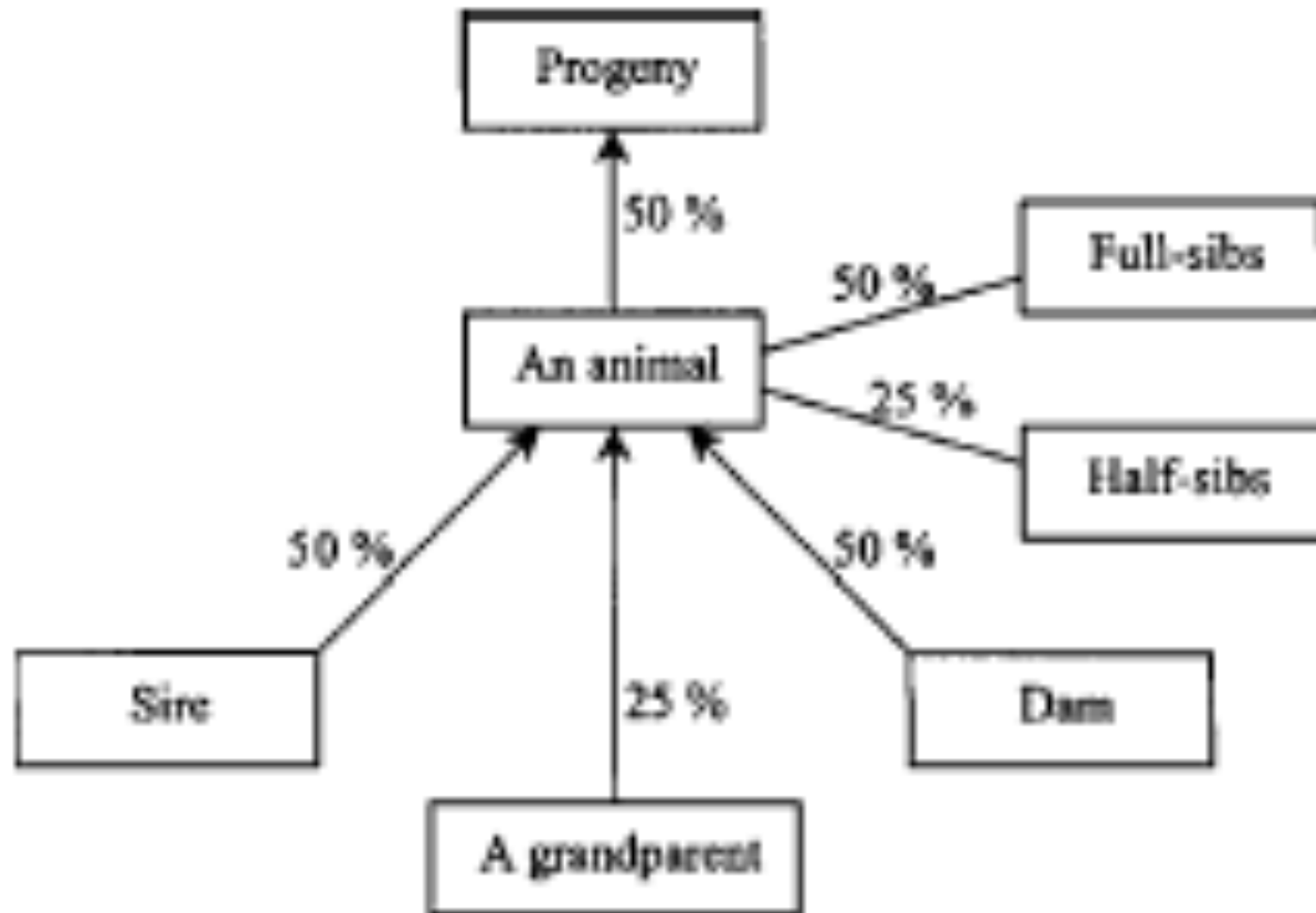


*Aa*

$\frac{3}{4}$  normal colour







# Reference

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