

Hardy-Weinberg Equilibria

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2. Category: Biology (Population Genetics)

3. Brief Description:

The Hardy-Weinberg equilibria refers to the long-term behavior of allele frequencies in the absence of any of the factors that cause evolution. The models assume (i) random mating, (ii) large population size (no genetic drift), (iii) no mutation, (iv) no migration, and (v) no natural selection. These models serve as a starting point for the analysis of more complicated population genetic models.

This application simulates three Hardy-Weinberg models: (i) a single autosomal gene with two alleles, (ii) a single sex-linked gene with two alleles, and (iii) two linked autosomal genes, each with two alleles.

4. How the Application Can be Used:

Hardy_Weinberg.app was designed to be used in an upper division undergraduate course on population genetics. However, parts of the application could be used in an introductory biology course which covers population genetics.

5. Developed under NeXTSTEP 2.1

6. Detailed Instructions:

The three models and the DeFinetti diagram can be accessed through the "Models" submenu. For detailed instructions, a description of the model, and some suggested exercises, click the Help button in the Info submenu.

7. Comments:

The help panel can be customized by opening Hardy_Weinberg.app as a folder and editing the Help.rtf file. This is a good place to enter assignments, questions, exercises, etc.