

Population Genetics with PopG (Part 3)

3.1. Mutation

We start the first simulation with the following parameters.

| | | |
|------------------------------------|----------------------------------|---|
| Population Size | <input type="text" value="100"/> | |
| Fitness of Genotype AA | <input type="text" value="1"/> | |
| Fitness of Genotype Aa | <input type="text" value="1"/> | f(AA) : % of populations that went to fixation |
| Fitness of Genotype aa | <input type="text" value="1"/> | f(aa) : % of populations that have lost the wt allele |
| Mutation From A to a (0-1) | <input type="text" value="0"/> | f(Aa) : % of population still heterozygote |
| Mutation From a to A (0-1) | <input type="text" value="0"/> | |
| Migration Rate between populations | <input type="text" value="0"/> | |
| Initial freq. of allele A (0-1) | <input type="text" value="0.5"/> | |
| Generations to run | <input type="text" value="100"/> | |
| Number of populations evolving | <input type="text" value="100"/> | |

| Mutation rate | | expectation | f(AA) | f(aa) | f(Aa) |
|---------------|-------|-------------------|-------|-------|-------|
| A → a | a → A | | | | |
| 0 | 0 | f(AA)=f(aa)=f(Aa) | | | |
| 0.001 | 0 | | | | |
| 0.01 | 0 | | | | |
| 0.1 | 0 | | | | |
| 0.01 | 0.01 | | | | |
| 0.001 | 0.1 | | | | |
| 0.01 | 0.1 | | | | |

What did you learn from the simulation?

3.2. Mutation

Please explain and try to repeat the following three simulation outcomes:

