

Hardy-Weinberg and viability selection equations

Isabel Kim

May 25th, 2022

- w_{AA} = the probability that a drive homozygous embryo survives to adulthood
- w_{Aa} = the probability that a drive heterozygous embryo survives to adulthood
- w_{aa} = the probability that a wild-type embryo survives to adulthood
- $\overline{w(t)} = u^2(t)w_{AA} + 2u(t)(1 - u(t))w_{Aa} + (1 - u(t))^2w_{aa}$
- $E[u(t + 1)] = \frac{u^2(t)w_{AA} + u(t)(1 - u(t))w_{Aa}}{\overline{w(t)}}$
- $E[u_{AA}(t + 1)] = \frac{w_{AA}}{\overline{w(t)}}u^2(t)$
- $E[u_{Aa}(t + 1)] = \frac{w_{Aa}}{\overline{w(t)}}2u(t)(1 - u(t))$
- $E[u_{aa}(t + 1)] = \frac{w_{aa}}{\overline{w(t)}}(1 - u(t))^2$