Frequencies of Genotypes

$$f(G_1G_1) = \frac{\#G_1G_1}{N} = \frac{4}{10} = 0.4$$

$$f(G_1G_2) = \frac{\#G_1G_2}{N} = \frac{3}{10} = 0.3$$

$$f(G_2G_2) = \frac{\#G_2G_2}{N} = \frac{3}{10} = 0.3$$

Sum: $f(G_1G_1) + f(G_1G_2) + f(G_2G_2) = 1$

$\#G_1G_1$: Number of

N: total number of animals in the population

- Alleles:

$$f(G_1) = \frac{\#G_1}{2N} = \frac{11}{20} = 0.55$$

$$f(G_2) = \frac{\#G_2}{2N} = \frac{9}{20} = 0.45$$

$f(G_1) + f(G_2) = 1$

- Allele frequencies from Genotype frequencies

$$f(G_1) = \frac{\#G_1}{2N} = \frac{2N \cdot f(G_1G_1) + f(G_1G_2) \cdot N}{2N} = f(G_1G_1) + \frac{f(G_1G_2)}{2}$$

$$\#G_1 = 2 \cdot \#G_1G_1 + 1 \cdot \#G_1G_2$$

$\#G_1G_1 \rightarrow N \cdot f(G_1G_1)$

$f(G_1G_2) \cdot N$