Breeding value for Parent S with genotype G_1G_1

- Parent S is randomly mated to males in the population. Assume that locus G is in HWE. ⇒ Allele frequencies in population are
$f(G_1) = p$; $f(G_2) = q$

- Expected genotype frequencies for offspring of parent S?

Mates S (random sample from population)

Parent S	$f(G_1) = p$	$f(G_2) = q$
$f(G_1) = 1$	$\rightarrow f(G_1G_1) = 1 \cdot p$	$f(G_1G_2) = 1 \cdot q$
$f(G_2) = 0$	$\rightarrow f(G_2G_1) = 0 \cdot p = 0$	$f(G_2G_2) = 0 \cdot q = 0$

⇒ $f(G_1G_1) = p$; $f(G_1G_2) = q$