

Answer on Question #83013 – Biology – Genetics

Question

What would the results be from a cross between a plant of genotype RrAa and one of genotype RRaa?

Solution

Plant with RRaa genotype produces only one type of gametes: Ra. Other plant (RrAa genotype) produces four types of gametes: RA, rA, Ra, ra. Therefore, in F1 there would be plants with 4 genotypes: RRAa, RrAa, RRaa, Rraa, in ratio 1:1:1:1. If both genes show complete dominance, there would be only two phenotypes: (RRAa; RrAa), and (RRaa; rraa), in ratio 1:1.

Here is the Punnett square for this cross:

×	RA	rA	Ra	ra
Ra	RRAa	RrAa	RRaa	Rraa

Answer: in F1 there would be plants with 4 genotypes: RRAa, RrAa, RRaa, Rraa, in ratio 1:1:1:1. If both genes show complete dominance, there would be two phenotypes in ratio 1:1.