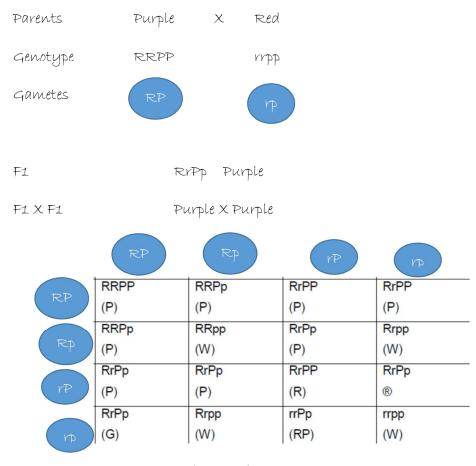
Gene Interaction-III

Supplementary gene (Recessive epistasis) 9:3:4

In this epistasis, one dominant gene has phenotypic effect while the other dominant gene has no phenotypic effect but its presence with the first gene modifies the phenotypic expression.



9 Purple: 3 Red: 4 White

Additive factors (9:6:1) (Polymeric gene action)

Here, the two genes that control a character produces identical phenotype when they are alone. However, when both the genes are present together, their

phenotype effect is enhanced as if the effect of the two genes are cumulative or additives. Both the genes show complete dominance. In barley the two completely dominant genes A and B affect the length of awns, the thin needle like extension of lemma genes A and B alone (e.g. Aabb and aaBB give gives rise to awn of medium length, the effect of A is the same as that of B. However, when both the genes A and B are present together they produce long awn indicating the effect of A and B genes of awn length are added together. Individual homozygous recessive for both these genes are awnless.

Parents	Long awned	awnless
Genotype	AABB X	aabb
Gametes		rp
F1	AaBb	Long awned

F1 X F1

	AB	Ab	aB	ab
	AABB	AABb	AaBB	AaBB
AB	(L)	(L)	(L)	(L)
Ala	AABb	AAbb	AaBb	Aabb
Ab	(L)	(A)	(L)	(A)
(aB)	AaBB	AaBb	aaBB	aaBb
	(L)	(L)	(A)	(A)
ab	AaBb	Aabb	aaBb	aabb
NO	(L)	(A)	(A)	(a)

9 Long awned: 6 awned: 1 awnless

Long awned X Long awned