# MONOHYBRID CROSS

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Law of segregation or Law of purity of gametes

During the formation of gamete, each gene separates from each other so that each gamete carries only one allele for each gene." Law of segregation is the second law of inheritance

# **Monohybrid Cross Definition**

"A monohybrid cross is the hybrid of two individuals with homozygous genotypes which result in the opposite phenotype for a certain genetic trait."

"The cross between two monohybrid traits (TT and tt) is called a Monohybrid Cross."

Monohybrid cross is responsible for the inheritance of one gene. It can be easily shown through a Punnett Square.

Monohybrid cross is used by geneticists to observe how homozygous offspring express heterozygous genotypes inherited from their parents.

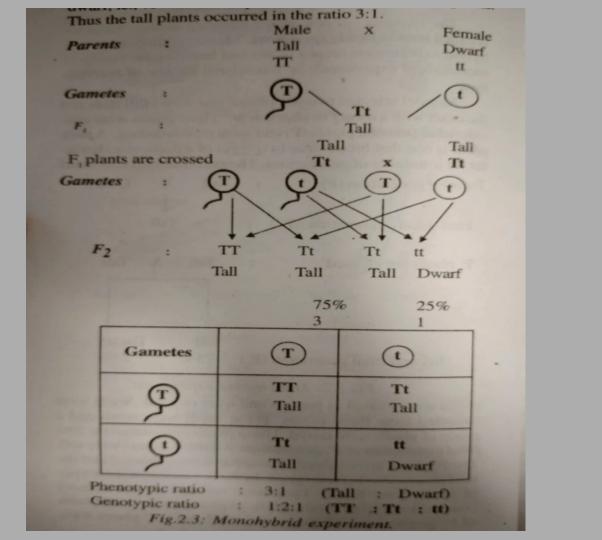
periment with all seven contrasting pairs and observed that the entire  $F_1$  progeny showed one pattern in their behaviour, i.e., the ent character was completely absent.

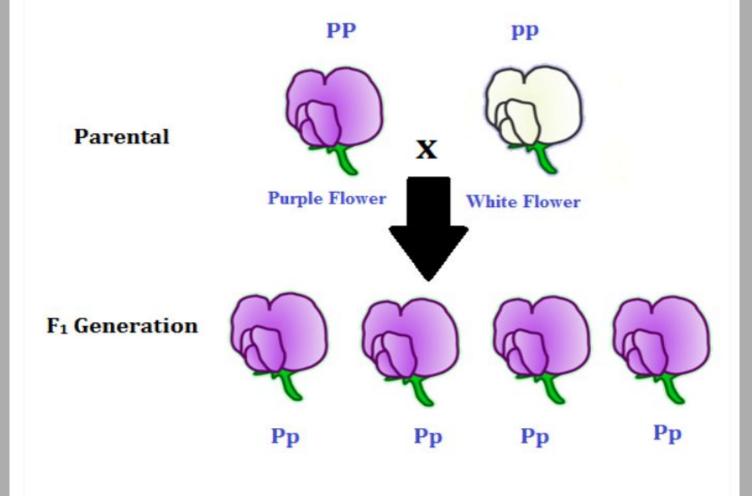
Describe the character was completely absent.

Describe the progeny with self-pollination of  $F_1$  progeny plants. Surprisingly, he observed that one out of four plants were dwarf while the observe in the ratio of 3:1.

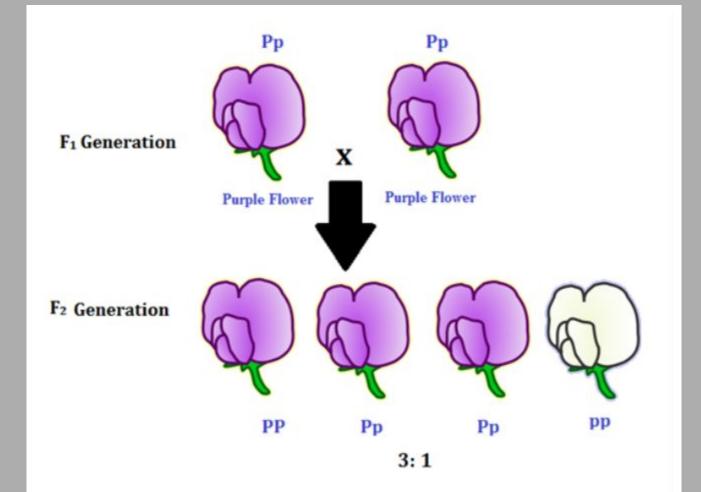
Describe the progeny was in intermediate height, i.e., no blending was observed. The result was the same for other traits of plants too, and the offspring were called  $F_1$  progeny

s, Mendel began with a pair of pea plants with two contrasting traits, i.e., one tall and another dwarf. The cross-pollination of t . All the hybrid plants were tall. He called this as a first hybrid generation (F<sub>1</sub>) and offspring were called Filial, or F<sub>1</sub> progeny.





Monohybrid Cross



## Huntington's Disease

Huntington's diseases is a fatal genetic disorder. The Huntingtin gene, responsible for Huntington's disease is present in all the individuals.

The homozygous dominant Huntingtin gene of an individual was paired with the homozygous recessive Huntingtin gene of another individual. All the offspring carried the dominant allele for Huntington's disease. That means that the child will have this disease.

### **Confirming Dominant Traits**

In the first step of a monohybrid cross, the homozygous traits of an individual are crossed. In the next step, when the heterozygous traits are crossed, it is confirmed whether the trait is dominant or recessive.