

Back cross

Out cross

Test cross

F₀ individual x dominant parent
 ↓
 All dominant characters

F₁ progeny x Recessive parent
 Tt (hybrid) x tt

Monohybrid test cross

(Means 50% dominant
 50% is Recessive phenotype)

1:1 50% : 50%

F₁ progeny (hybrid) x

Recessive parent
 tt

T	Tt
t	tt

1:1
 Tt tt

(B) Dihybrid test cross \Rightarrow 25%.

F₁ hybrid \times Recessive parent

TtRr \times ttrr

Progeny \Rightarrow Four type
 \downarrow
 Each \Rightarrow 25%

	RT	Tr	Rt	tr
tr	TtRr	Ttrr	ttrRr	ttrr

The ratio of dihybrid cross = 1:1:1:1

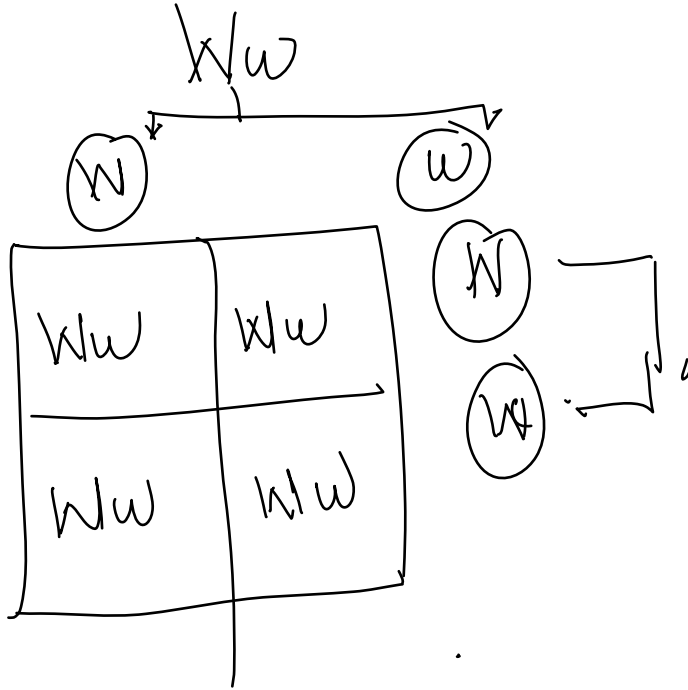
TtRr : Ttrr : ttrRr : ttrr

Phenotype and Genotype \Rightarrow Same

* Test cross help to find out the genotype of dominant individual.

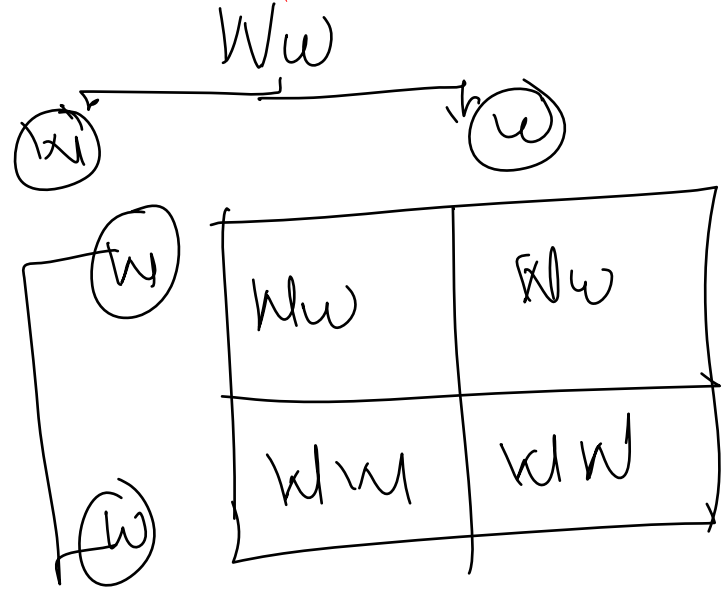
TT tt
RR rr
+t r

Homozygous
Recessive X



Homozygous
Recessive

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Reciprocal cross

(a) $TT \times tt$
(Female) (Male)

(b) $TT \times tt$
(Male) (Female)

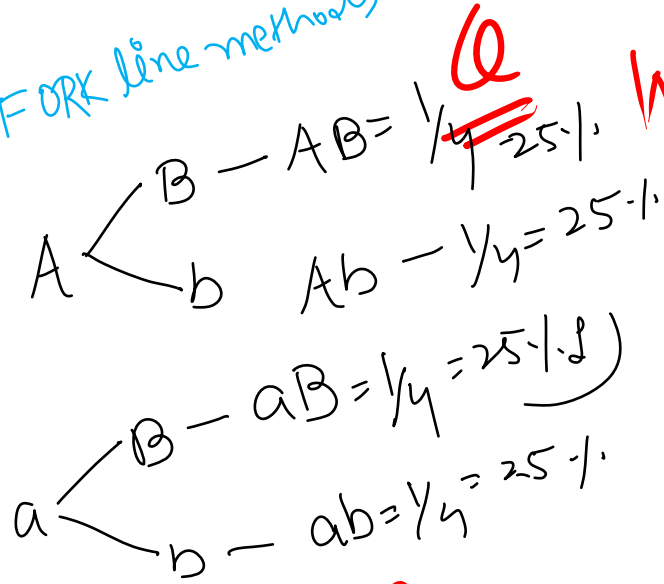
All Tall

All tall

characters which are controlled by Karyogone present on autosomes are not affected by Reciprocal cross.

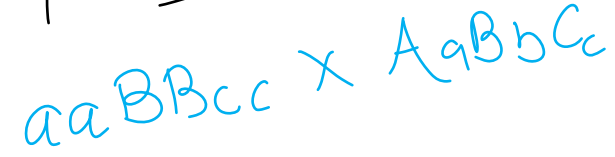
Ex 9. — cytoplasmic inheritance and sex linkage
result will change by Reciprocal cross.

FORK line methods



When $aaBBcc$ is crossed with $AaBbCc$ then the ratio of hybrid for all three genes is: -

- 1) $\frac{1}{4}$
- 2) $\frac{1}{8}$
- 3) $\frac{1}{16}$
- 4) $\frac{1}{32}$



$\chi^2_{aBB} \times aaBB$

3: $AaBB$ 1 $aaBB$

which genotype

Which genotype represent a true dihybrid cross?

- 1) $tt rr$
- 2) $Tt rr$
- 3) $Tt Rr$
- 4) $TT Rr$



In a dihybrid cross b/w $AABB$ and $aabb$ the ratio of $AABB$, $AABb$, $AaBb$, $aabb$ in F_2 Generation is?

$AABB \times aa bb$

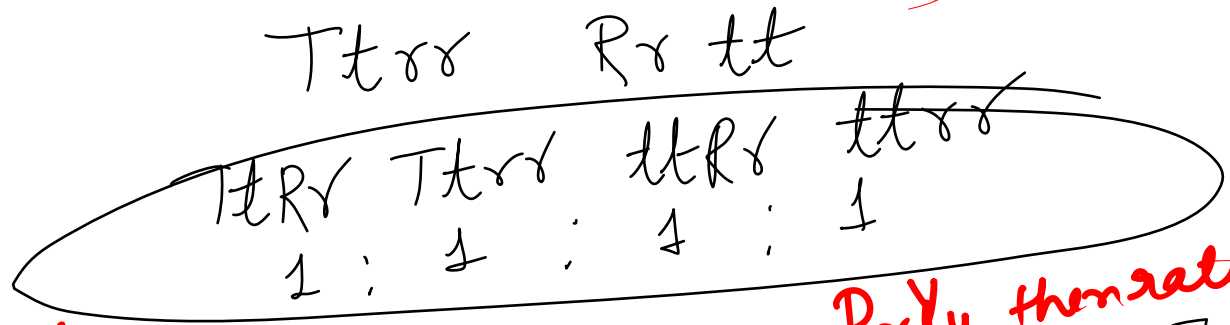
$AABB$, $AABb$
1: 2

$AaBb$, $aaBb$, $aa bb$
2: 1
1) B 2) 6 3) 2 4) 4

genotype forms how many types of gametes

When two hybrids $TtRr \times RrTt$ are crossed the phenotypic ratio of offspring shall be?

- 1) 1:1 2) 9:3:3:1 3) 3:1 4) 1:1:1:1



Q If selfing occur in the p plant have genotype $RrYy$ then ratio of di-hybrid cross give genotype will $[RRYY, RrYY, RRyy, RrYy]$

1) 2:2:2:1 2) 1:1:1:1 3) 1:2:2:4 4) 1:2:2:1