STUDY NO.: 01

NAME OF THE STUDY: STUDY ON THE EXTERNAL MORPHOLOGY OF CRUCIFERAE/BRASSICACEAE FAMILY(A MUSTARD PLANT)

Bengali name: Sorisha
English name: Mustard
Scientific name: *Brassica campestris*
Family: Cruciferae/ Brassicaceae

Habit: An annual cultivated herb.
Root: Tap root system.
Stem: Erect, non-woody, cylindrical, slightly hairy, branched.
Leaf: Simple, alternate, irregularly lobed, exstipulate, amplexicaul, upper leaves entire and lower leaveslyrate, some leaves are petiolate and some leaves are sessile and cauline, reticulate venation.
Inflorescence: Recemose, typicalraceme.
Flower: Pedicellate, ebracteate, complete, bisexual (hermaphrodite), actinomorphic, hypogynous, tetramerous, cruciform, yellow in colour.
Calyx: Sepals-4 in two whorls, polysepalous, aestivation imbricate.
Corolla: Petals-4, polypetalous, each petal consist of limb and claw, cruciform, alternating the sepals. aestivation valvate.
Androecium: Stamens-6, free, tetradynamous (outer 2 short, inner 4 long), filament long, anther bi-lobed, basifixed, introrse.
Gynoecium: Carpels-2, syncarpous, ovary superior, unilocular initially but later stage bilocular by a false septum (partition) known as replum. Style short, stigma bi-lobed, placentation parietal.
Fruit: Siliqua
Floral formula: $+ \; ♀ \; K_4 \; C_4 \; A_{2+4} \; \underline{G} \; (2)$

Family identifying characters:

→Herb with alternate exstipulate leaves
→Flower cruciform
→Sepal-4, imbricate
→Petal-4, valvate
→Stamens-2+4,tetradynamous
→Ovary usually 2-celled or 1-celled
→Fruit siliqua or silicula

Other species:

i) *Brassica juncea*-Indian mustard (Rai)
ii) *Brassica alba*-White mustard
iii) *Brassica nigra*-Blackmustard
iv) *Brassica napus*-Rape seed

Book references:

1. Botany for Degree Students, A. C. Datta
2. College Botany, H. C. Gangulee
3. Modern Practical Botany (Vol.-II), B. P. Pandey

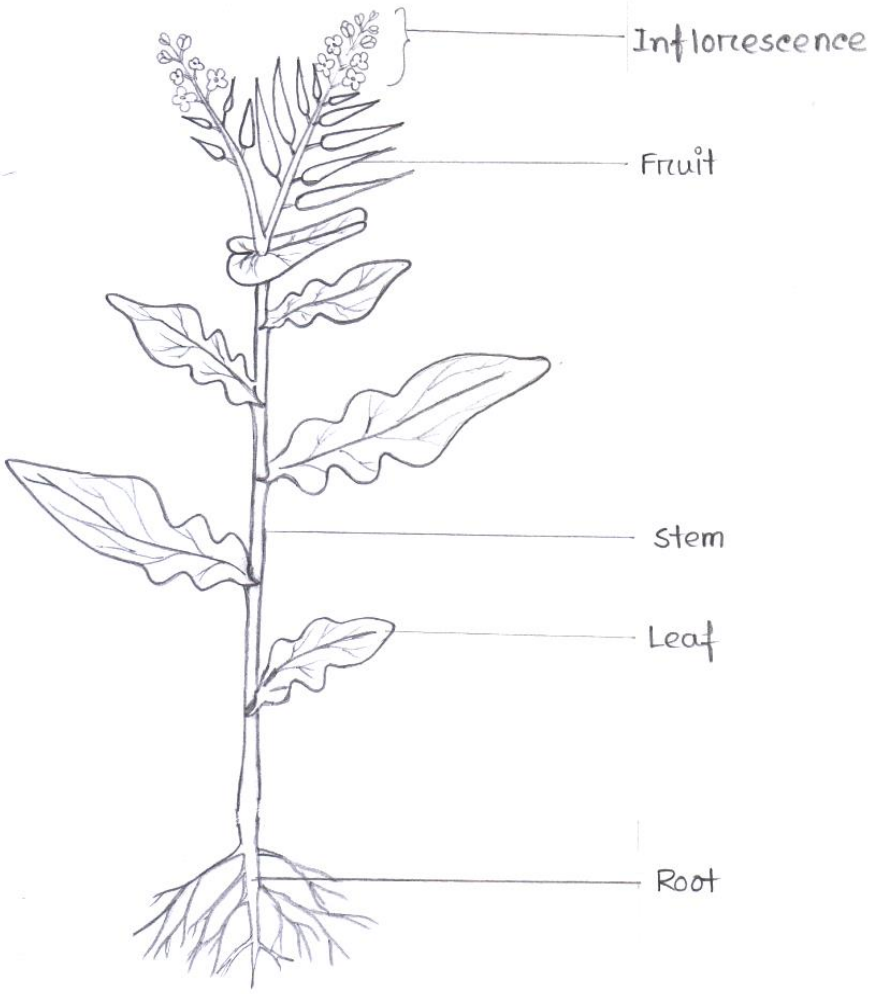

Figure : A complete Mustard Plant.

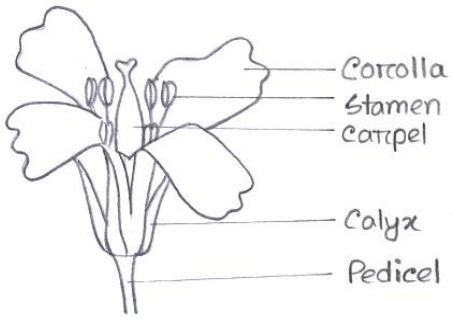

Figure : A mustard flower

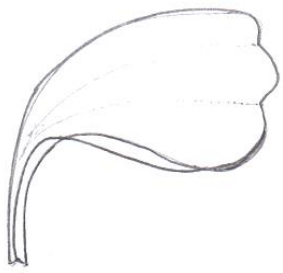

Figure : A petal

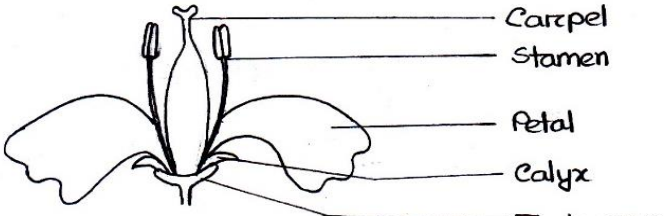

Figure- A disected flower

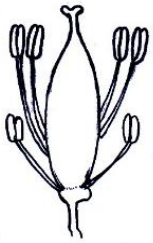

Figure - Androecium & Gynoecium

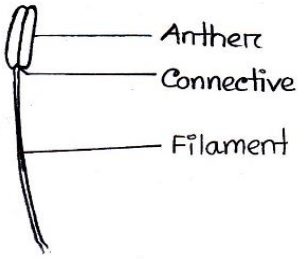

Figure: Stamen

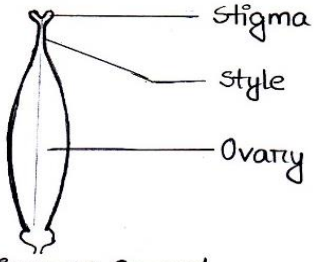

Figure: Carpel

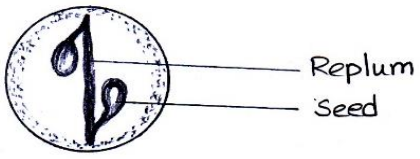

Figure : A disected ovary

Figure : Fruit

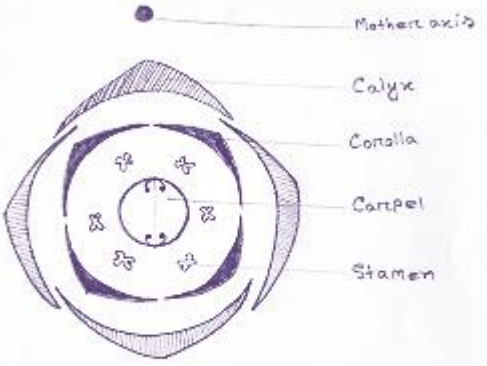

Fig: Floral diagram of Mustard plant