

STUDY NO.: 04

**NAME OF THE STUDY: STUDY ON EXTERNAL MORPHOLOGY OF
LEGUMINOSAE/FABACEAE FAMILY (A GRASSPEA PLANT)**

Bengali name: Khesari
English name: Grasspea
Scientific name: *Lathyrus sativus*
Family: Leguminosae (Fabaceae)
Sub-family: Papilionaceae

Habit: Annual cultivated herb.

Root: Tap root system, profusely branched, nodulated (nodules containing nitrogen fixing bacteria like as *azotobacter*, *rhizobium*, *azospirillum* etc)

Stem: Herbaceous, procumbent, soft, smooth, climbing with the help of leaf tendrils, glaucous, winged and branched.

Leaf: Pinnate compound leaf, alternate, cauline, stipulate, stipules leaf like, leaflets 3, 5 or 7, entire, linear lanceolate, acute, terminal leaflets modified into tendril structure.

Inflorescence: Cymose, solitary and axillary

Flower: Pedicellate, bracteate, bisexual, complete, irregular, zygomorphic, hypogynous, papilionaceous.

Calyx: Sepals-5, gamosepalous, united at the base and free at the end.

Corolla: Petals-5, the outermost odd petal is the largest and blue called vexillum or standard, inner two called wing, the innermost two keel united to form a boat shaped structure (whitish in color), aestivation vexillary.

Androecium: Stamens-10, diadelphous, 9 united in one bundle and 1 separate, filaments long, anther bilobed, stamen perianth or epigynous, basifixed, and introrse.

Gynoecium: Carpel-1, ovary superior, unilocular, style curved, stigma spatulate (spoon shaped) placentation marginal.

Fruit: Legume/ pod.

Floral formula: Br. $\% \overset{\uparrow}{\text{♀}} K_{(5)} C_{1+2+(2)} A_{(9)+1} \underline{G}_1$

Family identifying characters:

- Corolla papilionaceous
- Fruit pod/legume
- Diadelphous stamen
- Stamen perianth/epigynous.

Other species:

- Gram or Chick pea (Chola) : *Cicer arietinum*
- Lentil (Masoor) : *Lens esculenta*
- Garden pea (Pea) : *Pisum sativum*
- Grass pea (Khesari) : *Lathyrus sativus*
- Soybean : *Glycine max*
- Groundnut / Peanut : *Arachis hypogaea*

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.

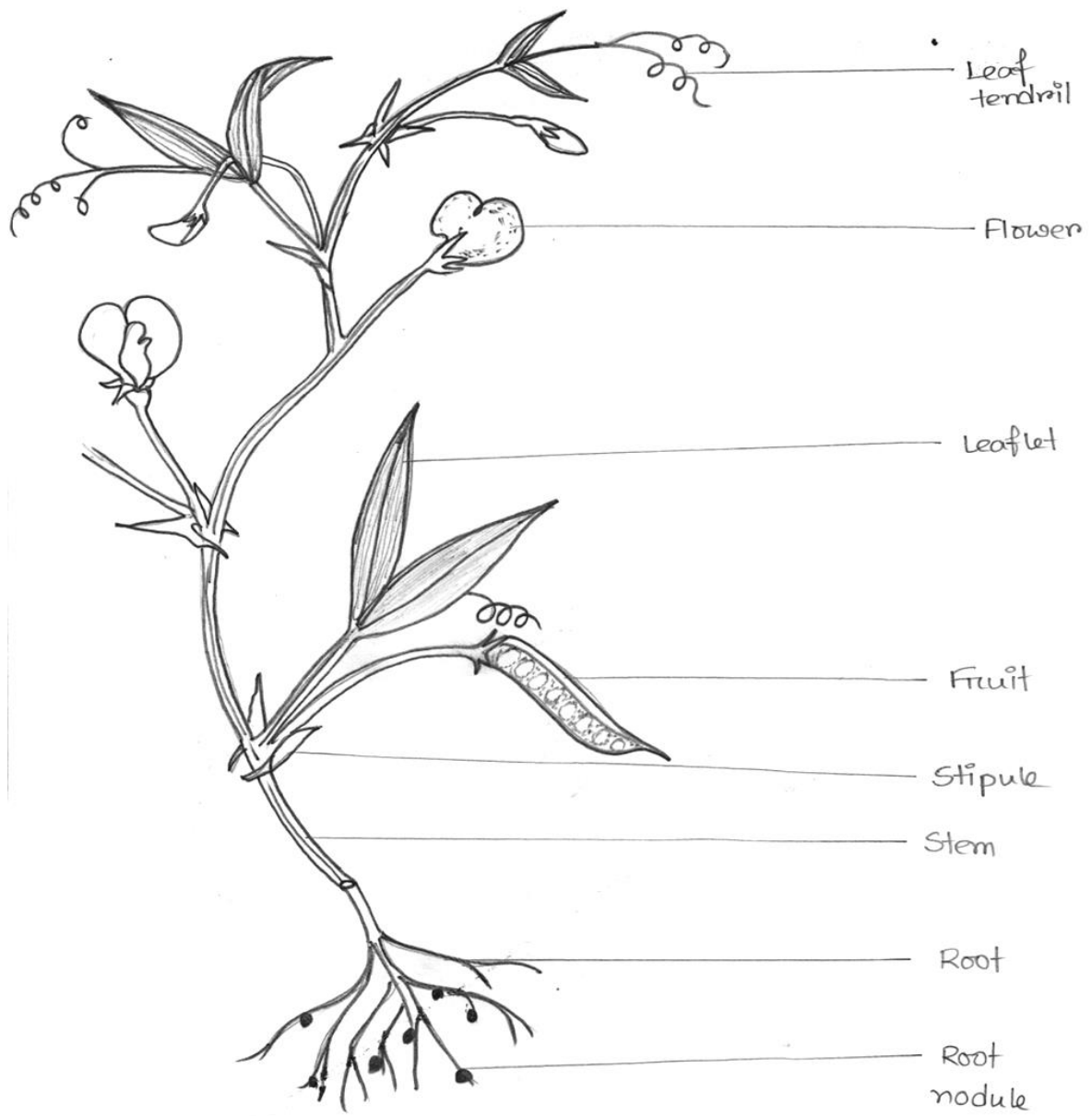


Figure - A grass pea plant



Figure : A leaf of grass pea showing stipules, a leaflet, leaf tendril.

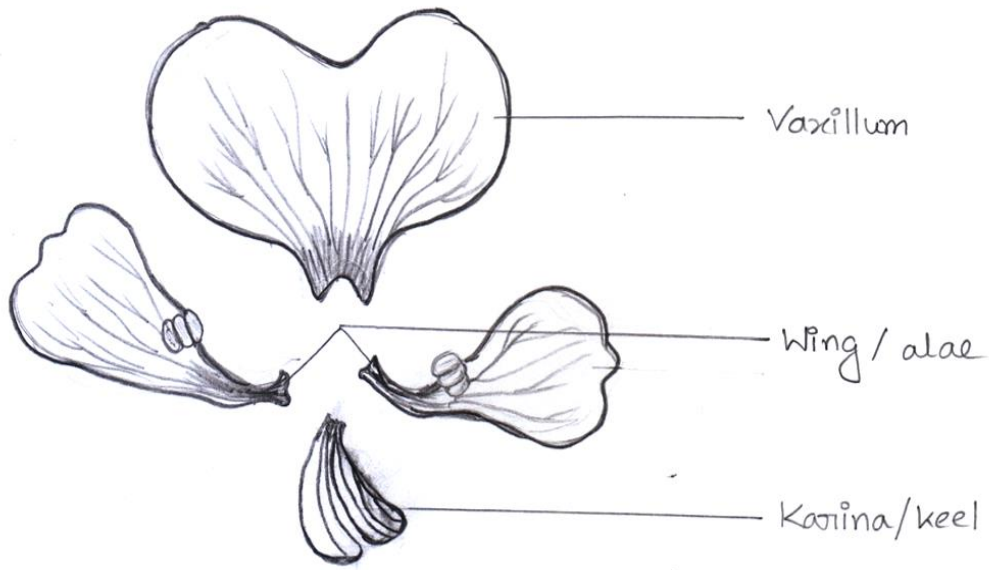


Fig: Corolla of grass pea



Fig: calyx



Fig: A flower of grass pea

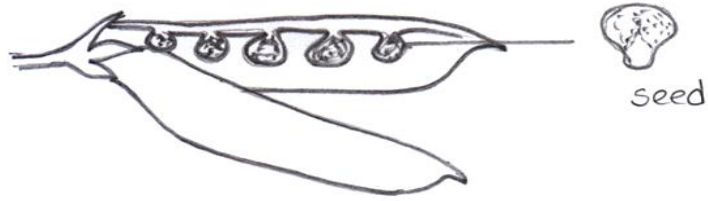


Fig: Fruit of grass pea



Fig: Ovary in transection showing marginal placentation

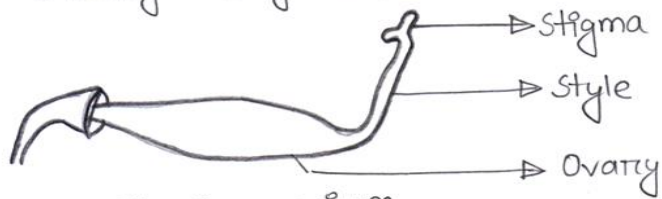


Fig: Gynoecium

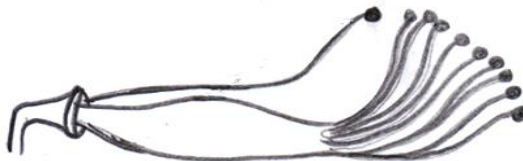


Fig: Androecium (10)+1

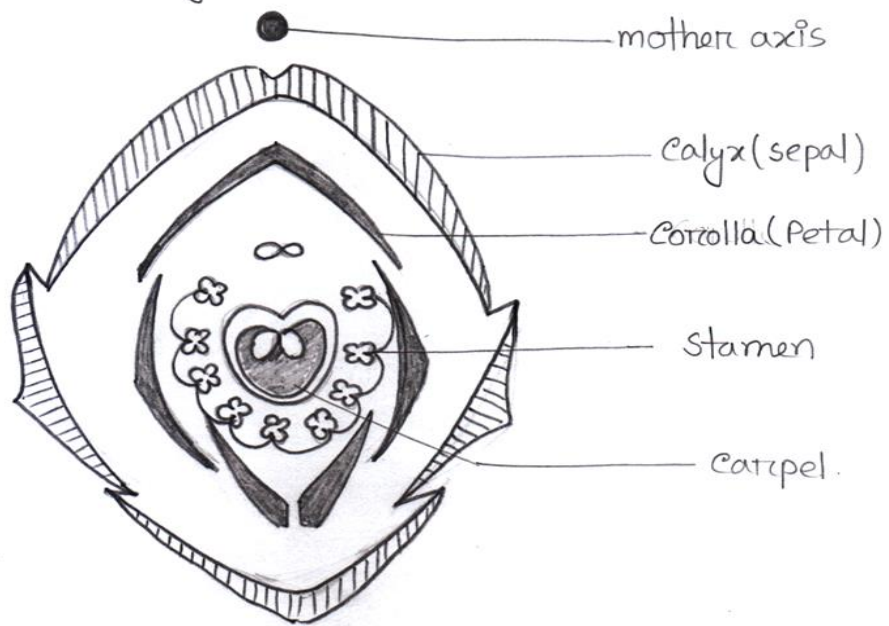


Fig: Aestivation of grass pea flower