



Lentil (*Lens culinaris* L.) or *Lens esculenta* L.

Prepared

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Introduction:

Lentil (*Lens culinaris L.*) was first grown in southwest Asia about 7,000 BCE in the area that is now southern Turkey and northern Syria. It is best adapted to the cooler temperate zones of the world, or the winter season in Mediterranean climates.

Germination:

Lentil has hypogeal emergence, which means that the growing point emerges but the cotyledons remain in the soil (Fig. 1).

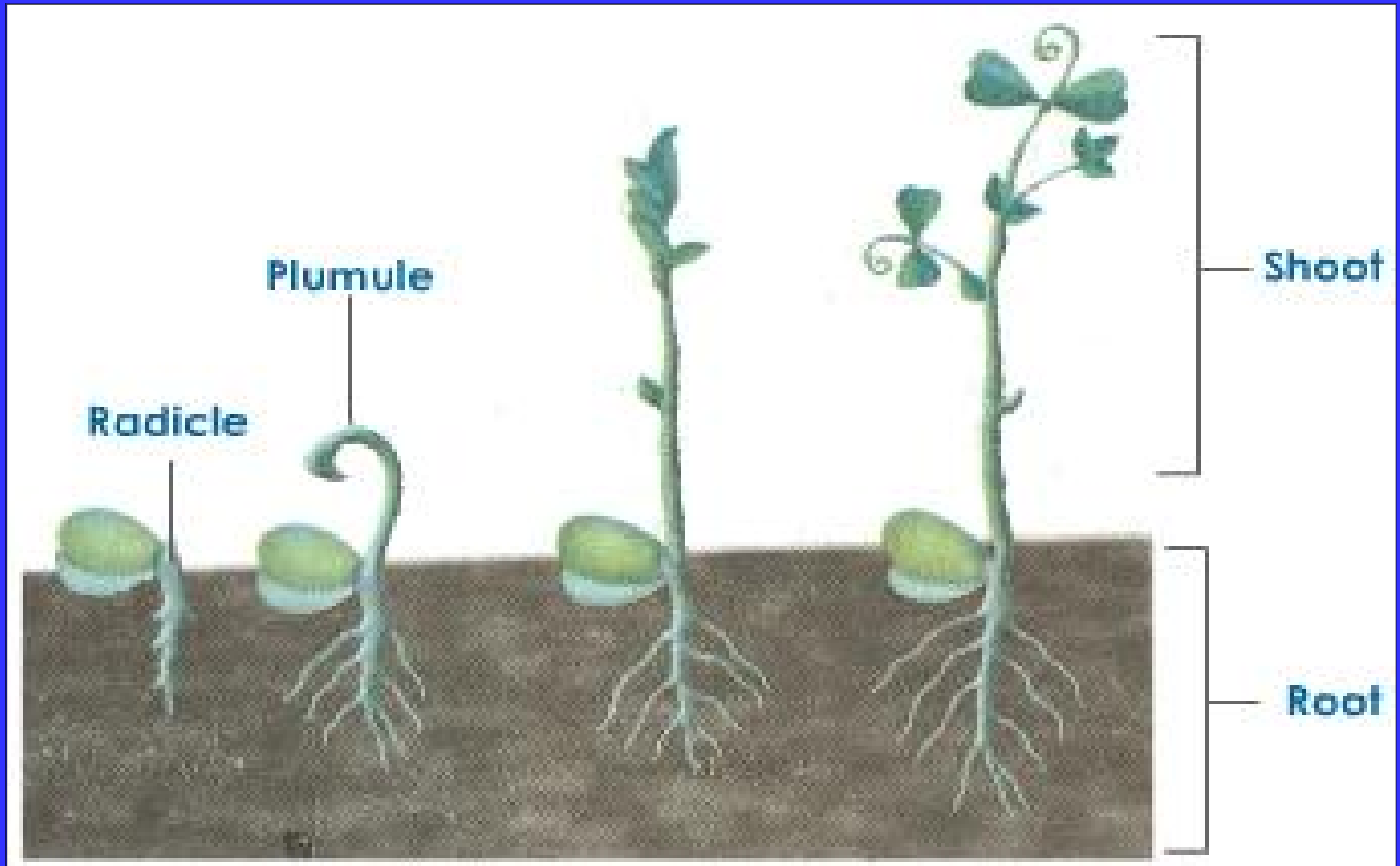


Fig. 1 Seed lentil germination



Roots:

There is a robust tap root with profusely branched secondary roots. lentil roots need to be inoculated with the appropriate strains of rhizobia (*Rhizobium leguminosarum*), which will infect the plants root and stimulates root nodule development. **This occurs when the faba beans are being grown in the field for the first time or where they have not been grown for along time (Fig. 2).**



Fig. 2 lentil roots and Bacterial noudes



Plant height (stem):

Lentil is an annual bushy herb, slender almost erect or suberect, much-branched, softly hairy; stems slender, angular, 15-75 cm height. Lentil plants are slender, semi-erect annuals. Plants normally range from 30-75 cm. tall, the taller plants resulting from cool growing season temperatures, good moisture and good fertility.

Plants can have single stems or many branches depending upon the population in the field. Fig. 3 lentil plant.



Leaves:

The leaves are alternate and compound leaves (4 to 7 pairs of leaflets) with a tendril at the tips. Ten to sixteen leaflets are subtended on the rachis (40-50 mm); upper leaves have simple tendrils while lower leaves are mucronate (Muehlbauer et al., 1985). "The leaves are alternate, compound, pinnate, usually ending in a tendril or bristly; leaflets 4-7 pairs (Fig. 4).

In general, the leaves are alternate, with six pairs of oblong-linear leaflets about 15 mm (0.5 inch) long and ending in a spine.



Fig. 4 Lentil leaves, flowers and pods



Flowers:

The flowers, one to four in number, are small, white, pink, purple, pale purple or pale blue in colour. They arise from the axils of the leaves, on a slender footstalk almost as long as the leaves.

The flowers are hermaphrodite (have both male and female organs) and are pollinated by Cleistogomy (self-pollinating without flowers ever opening). The plant is self-fertile. We rate it 4 out of 5 for usefulness.



The flowering begins from the lowermost buds and gradually moves upward, so-called acropetal flowering.

Fruits:

The pods are oblong, slightly inflated and about 1.5 cm long, 1-2-seeded.

Seed:

The seed biconvex, rounded, small, 4-8 mm, lens-shaped, green, greenish-brown or light red speckled with black. the weight of 100 seeds range from 2 to 8 g; cotyledons red, orange, yellow, or green, bleaching to yellow, often showing through the testa, influencing its apparent color fig. 4.

Seeds:

Lentil has two types, namely; **macrosperma**, found mainly in the Mediterranean region and the New World (seed size ranging from 6 to 9 mm in diameter and yellow cotyledons with little or no pigmentation), and **microsperma** (2 to 6 mm with red orange or yellow cotyledons) found on the Indian subcontinent.



Lentil (*Lens culinaris* L.) Leguminosae Fabaceae

Types	Lentil has two types, namely; macroserma , found mainly in the Mediterranean region and the New World (seed size ranging from 6 to 9 mm in diameter and yellow cotyledons with little or no pigmentation), and microserma (2 to 6 mm with red orange or yellow cotyledons) found on the Indian subcontinent.
Germination	Hypogeal germination: seeds remains below the ground.
Root	A robust taproot with profusely branched secondary roots (30-60 cm), bacterial nudes <i>Rhizobium leguminsarium</i> ,
Stem	Plant annual bushy herb, stems slender, angular, 15-75 cm height, almost erect or semi-erect, much-branched, softly hairy.
Leaf	The leaves are alternate, with six pairs of oblong-linear leaflets about 15 mm (0.5 inch) long and ending in a spine
Inflorescence	The flowers, one to four in number, are small, white, pink, purple, pale purple or pale blue in colour. They arise from the axils of the leaves, on a slender footstalk almost as long as the leaves.
Flowers	The flowers, one to four in number, are small, white, pink, purple, pale purple or pale blue in colour. Self-pollinated
Fruits	The pods are about 15–20 mm long, broadly oblong, and slightly inflated and contain two seeds. The seeds may be more or less compressed in shape, and the colour may vary from yellow or gray to dark brown; they are also sometimes mottled or speckled.



1. lentil belongs to the genus of:

a) Arachide.

b) lens

c) Cicer.

d) Leguminosae.

2. The scientific name of cultivated lentil is:

a) *Cicer arietinum*.

b) *Lens culinaris L.*

c) *Medicago sativa*.

d) *Cicer cuneatum*.

3-(cultivated lentil) can be described as
.....bushy herb.

a- annual

b-biennial

c- perennial

d- tree



4- Lentil has hypogeal emergence, which means that the growing point emerges but the cotyledons remain in the soil

a-Epigram

b- hypogeal

c- semi hypogeal

d-semi Epigram

5- (**true**) lentil Plants can have single stems or many branches depending upon the population in the field

6-(**false**) lentil with compound leaves (4 to 7 pairs of leaflets) with no tendril at the tips.

7-(**true**)The leaves of lentil are alternate, compound, pinnate.



8- Lentil plants have angrowth habit, so they will continue to flower until there is some form of stress, such as lack of moisture, nutrient deficiency, or high temperature.

a- indeterminate

b- determinate

c- Epigram

d-perennial

9- (**false**) Flowering begins on the upper branches, gradually moving down the plant and continuing until harvest.

10-(**true**) The flowers of lentil are hermaphrodite (have both male and female organs).



Thank
You!