



Orobanche aegyptiaca

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Context: India's mustard crop is facing a serious agronomic challenge due to infestation by *Orobanche aegyptiaca*.

Orobanche aegyptiaca (Egyptian Broomrape)

- *Orobanche aegyptiaca* is an **obligate root-parasitic angiosperm weed**.
- It is **achlorophyllous** (lacks chlorophyll) and therefore **incapable of photosynthesis**.
- The parasite establishes a **haustorial connection** with the host plant roots and **extracts water, nutrients, and assimilated carbon**.
- It predominantly infects **mustard (Brassica spp.)**, though it can parasitise other crops as well.

Impact on Mustard Crop

- Severe depletion of host resources leads to:

oPhysiological stress

oWilting and chlorosis

oReduced vegetative growth

- Results in **substantial reduction in seed yield and oil content**.
- Infestation is difficult to detect at early stages as most of the parasite's life cycle occurs **below ground**.

About Mustard

- Mustard is **India's largest edible oil-yielding crop** and a key component of national oilseed security.
- **Sowing period:** Mid- to late-October (Rabi season).
- **Largest producing state:** Rajasthan.

Other Biotic Stresses in Mustard

- **Insect pests:** Aphids (most economically damaging).
- **Diseases:** White rust (*Albugo candida*), Leaf blight. Stem rot, Powdery mildew

Growing Mustard: Key Facts & Threats

Ideal Growing Conditions



Optimal Temperature:
10°C to 25°C

The crop thrives in dry and cool environmental conditions.



Annual Rainfall:
625 mm to 1000 mm

Sandy loam soil is the most suitable type for cultivation.



Top Producing States

Rajasthan is the largest producer in India.



A Major Threat: The Parasitic Weed

***Orobanche aegyptiaca*:**
The Root Parasite

This weed attaches to mustard roots, siphoning water and nutrients.

Causes Stunted Growth & Reduced Yield



Leads to wilting, yellowing, and a sharp decline in seed production.



A Hidden Danger

It grows underground, so damage is extensive before it becomes visible.

NotebookLM