CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

Egyptian Broomrape (*Orobanche aegyptiaca*)

Pest Fact Sheet

Introduction: Egyptian Broomrape (*Orobanche aegyptiaca*) is a parasitic flowering plant that attaches to the roots of other plants. It has been found in crop fields in the Central Valley of California. It has a wide host range that includes Apiaceae (e.g., carrots and celery), Asteraceae (e.g., sunflowers and chrysanthemums), Fabaceae (e.g., beans and peas), Solanaceae (e.g., eggplant, peppers, potato, and tomato), amongst others. The microscopic seeds can be moved to new areas by wind, water, contaminated seed shipments, farm equipment, clothing, and shoes. This makes it difficult to prevent the spread of seeds and identify the original source of infestation.

Distribution: Egyptian Broomrape is native to North Africa, the Middle East, Europe (i.e., Greece, Bulgaria, and Crimea), Central Asia, and the Indian Subcontinent. In the US, it is known only from a few localities south of Davis, California.

Description and Identification: The presence of Egyptian Broomrape is only evident once the flowering inflorescence emerges from the soil alongside its host plant as they are connected underground. It has a brown to tan, fleshy stem and small purple to white flowers. The petals are fused into a tube with the three lower lobes extending slightly longer than the two upper lobes. The leaves are indistinct. It is distinguish from the similar looking but more commonly encountered, Branched Broomrape (*Orobanche ramosa*), by the larger flowers (*O. aegyptiaca* > 18 mm > *O. ramosa*). Egyptian broomrape also has hairy anthers, the uppermost part of the male reproductive structure. These hairs are best seen under magnification (Tutin et al. 1972).

Egyptian Broomrape parasitizing a sunflower.
Photo credit: Cody Zacharia.

Biology and lifecycle: Seeds germinate in the soil in response to the presence of host plant roots, which are detected chemically. Like many members of the Broomrape family (Orobanchaceae), Egyptian Broomrape is a holoparasite, in that it takes all its resources from its host plant. It does not photosynthesize and as a result has no need for green leaves. A single Egyptian Broomrape plant can produce over 100,000 microscopic seeds that can lay dormant in the soil for decades making eradication efforts costly and lengthy; it also renders that field unusable for growing host plant crops during that time.

Prepared by Samuel Skibicki (December 2025); Plant Pest Diagnostic Laboratory (https://www.cdfa.ca.gov/plant/PPD/).

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Pest Fact Sheet [cont.]

Economic importance: An Egyptian Broomrape infestation in a crop field can reduce yield, but in some cases, it can completely destroy the crop (Scher & Walters 2010). Serious infestations could jeopardize the multibillion dollar tomato industry in the Central Valley of California where over 90% of the country's processing tomatoes are grown. Another crop susceptible to a broomrape invasion would be sunflowers which accounts for over 100 million dollars in oil crop, seed, and cut flower production in California (CDFA 2024).

Egyptian Broomrape in a tomato crop. Photo credit: Barry Dagenbach.

References:

CDFA. 2024. California Agricultural Statistics Review 2023-2024.

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