

BRANCHED BROOMRAPE ON FLORIST'S CHRYSANTHEMUM

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Orobanche is a genus of flowering plants that parasitize the roots of other plants. In California, there are several naturally occurring species that parasitize native plants only. However, branched broomrape (*Orobanche ramosa* L.) a weed introduced from Europe, attacks several field crops, ornamentals, and weeds that grow in California. This introduced species has become a pest on several economic crops in Alameda County, Santa Barbara County, and the Sacramento River Delta.

Some fields in southern Alameda County are so heavily infested with branched broomrape that tomato production has been abandoned. In that area, *Orobanche ramosa* was recently found as a parasite on outdoor-grown florist's chrysanthemum (*Chrysanthemum morifolium* Ram.) by Senior Agricultural Biologist Paul Sweigart, of the County Agricultural Commissioner's office. The parasite appeared and began to flower when the fall chrysanthemum crop was being harvested. The owner of the crop did not observe any reduction in flower yield or quality in the parasitized plants. Perhaps branched broomrape is not strongly parasitic on florist's chrysanthemum. Individual chrysanthemum plants were parasitized by one *Orobanche* plant while as many as 50 parasite plants have been reported on a single tomato plant.

Branched broomrape is an annual, flowering plant that reproduces by seeds. The plant has no chlorophyll and small scales take the place of leaves. The yellow shoots, several inches high, terminate in spikes of ½-inch, tubular flowers that look somewhat like small snapdragons. Flower color ranges from white to pale yellow or violet to blue.

Seeds by tens of thousands may be produced by a single *Orobanche ramosa* plant. The seeds are

tiny (about the size of a particle of ground pepper) and can easily be spread to new sites on workers' shoes and clothing, tools, and equipment. Careful observance of cleanliness precautions can help keep *Orobanche* seed from spreading to uninfested areas. Broomrape seeds can remain dormant and totally unaffected by changing soil conditions for many years. They germinate whenever roots of a suitable host plant contact them.

Broomrape control can be achieved when methyl bromide and chloropicrin¹ (in a ratio of 2:1) are properly applied at a rate of 1 pound per 100 square feet. Soil steaming, in conformance with recommended grower practices, should also provide effective control.

Any flower grower who suspects his crop has an infestation of branched broomrape should contact the Agricultural Commissioner's office in his county immediately.

For a list of hosts of branched broomrape, refer to the U.C. Experiment Station publication, *Branched Broomrape*, Leaflet 182, available at your county farm advisors' office.

¹ CAUTION: Methyl bromide is a highly toxic, odorless fumigant. Whenever possible, use this material in combination with chloropicrin as a warning agent. Wear special protective equipment, especially gas masks, when there is a possibility of inhaling the vapor. Chloropicrin is a fumigant that is highly irritating to the eyes. See your County Agricultural Commissioner to obtain a permit to purchase, apply, and possess these materials, and to become familiar with any special restrictions. Always read the labels before using and carefully follow all safety precautions.

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NOTE: Progress reports give experimental data that should not be considered as recommendations for use. Until the products and the uses given appear on a registered pesticide label or other legal, supplementary direction for use, it is illegal to use the chemicals as described.

To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.