Snapdragons — an Energy-Efficient Greenhouse Crop

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This overview is intended to introduce snapdragons to California cut-flower growers looking for low-temperature greenhouse crops. Further reading is strongly suggested for those growers who wish to grow the crop.

History

Ancestors of the greenhouse snapdragon, *Antirrhinum majus* L., were native to the Mediterranean region, where they grew as summer perennials. In about 1926, a winter flowering greenhouse cultivar, 'Chevoit Maid', was introduced. The first F_1 hybrid greenhouse forcing snapdragon was introduced in 1938. George J. Ball, Inc., and Yoder Bros., Inc., have been the principal introducers of F_1 hybrid cultivars since 1950 (Rogers, 1980).

Snapdragon production is of more interest to California growers today, because it is one of the cool-night-temperature crops. Major limitations of the crop include: (1) the need to ship upright in hampers to prevent bending of stems, and (2) the sensitivity of snapdragons to ethylene gas. Recent work has demonstrated that conditioning the flowers with STS (silver thiosulfate complex) can reduce shattering and increase vase life of the blooms. The mechanism by which snapdragon flower shattering is reduced by using STS is currently being investigated at University of California, Davis. Specific methods for conditioning snapdragons with STS will be published later.

Diseases and insects

Downy mildew can be a serious problem in California's coastal climates where growers turn off the heat during the summer. Coastal fog encourages downy mildew to develop.

Other diseases of snapdragon include powdery mildew, rust, verticillium wilt, sclerotinia, water mold root rot, and black root rot. Current disease control information is included in Leaflet 2606, *Snapdragon Disease Control Guide*, available from University of California Cooperative Extension county offices.

Aphids, spider mites, looper larvae, and leafminers are commonly found on snapdragons in California greenhouses. None of these pests is known to be highly resistant to pesticides at this time.

Temperature

Commercial snapdragons are often grown with greenhouse night temperatures of 50° F (10° C). Rogers (1980) suggested that warming the soil to 77° F (25° C) may permit rapid uptake of water by roots and could reduce midmorning wilt that often occurs on healthy snapdragons when winter greenhouse temperatures are maintained at 50° F. Often, however, the wilting may be caused by root rot fungi that have reduced the water uptake capability of the root system.

Suggested reading

Kramer, P. J.
1940. Root resistance as a cause of decreased water absorption by plants at low temperature. *Plant Physiology* 15, 63-67.

McCain, Arthur H.
1980. *Snapdragon disease control guide*, Leaflet 2606. Berkeley, California: University of California Division of Agricultural Sciences. Available free from U. C. Cooperative Extension county offices.

Rogers, Marlin N.
1980. Snapdragons. Chapter 4 in *Introduction to floriculture*, edited by Roy A. Larson. New York, New York: Academic Press.

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