
TECHNICAL INFORMATION BULLETIN

FOR USE ON CONTAINERIZED ORNAMENTAL CROPS GROWN IN GREENHOUSES

GENERAL INFORMATION:

CITADEL® is an effective growth retardant for use on a broad variety of ornamental crops grown in containers in commercial or research greenhouses. **CITADEL** reduces plant height by limiting internode elongation through inhibition of gibberellin biosynthesis. Application produces more desirable compact and marketable plants. These desirable qualities include darker foliage, higher chlorophyll content and greater leaf thickness.

CITADEL contains 11.8% chlormequat chloride (2-chloroethyl trimethylammonium chloride).

CITADEL is available in 1 gallon and 30 gallon containers.

CITADEL is an effective plant growth regulator for use on a broad variety of ornamental crops; including poinsettias, geraniums, azaleas, hibiscus, bedding plants and other herbaceous and woody plants. Depending on crop culture, environmental conditions and plant growth habits, **CITADEL** will normally retard growth for a period of 1 to 3 weeks following spray treatment. Repeat applications may be necessary. **CITADEL** has greatest effect on final plant height when applied at the beginning of rapid stem elongation. **CITADEL** will have less effect if applied when shoots are not elongating or at the end of an elongation phase. Prior to treating a large number of plants, growers should conduct trials to determine optimum rates, application timing and frequency for their individual situations.

USE AND RATE RECOMMENDATIONS:

Spray Applications

As a foliar applied spray, **CITADEL** is absorbed into the plant through young expanding leaves, mature leaves and stems. **CITADEL** is most effective when applied at a spray volume that thoroughly covers the plant foliage and stems. Optimum spray volume will vary with the plant size, but generally is between 2 and 3 quarts of spray solution per 100 square feet of bench space. High spray volumes that result in excessive runoff of solution are undesirable.

Unless otherwise stated in the section under specific crops, **CITADEL** spray application rates range from 600 to 2,000 ppm depending on the crop and individual user's desired results. The suggested initial **CITADEL** rate for small-scale trials is 1,250 ppm.

Drench Applications

CITADEL can be applied as a drench treatment to the growing medium. Through a drench application, **CITADEL** is taken up by the roots and transported to the stem tips where it is active. When applying a drench treatment, the total amount of active ingredient applied to each container determines the amount of reduction in stem elongation. Therefore, users must insure that both the amount of solution applied to each container and the concentration of **CITADEL** in ppm are correct.

Application rates for drench treatments of **CITADEL** range from 2,000 to 3,000 ppm. Users should conduct trials to determine the optimum rates under their particular conditions.

PREPARATION OF CITADEL SOLUTIONS:

The **CITADEL** rates shown in the following table are general guidelines to be used by growers in trials to determine the optimum **CITADEL** rate, timing, and frequency of application under their individual production situations. See product label for complete instructions.

CONCENTRATION (PPM)	CITADEL (fl. oz./gal)	CITADEL(ml/gal)
600	0.66	19.2
1,000	1.08	32.1
1,250	1.36	40.1
1,500	1.63	48.1
2,000	2.17	64.2

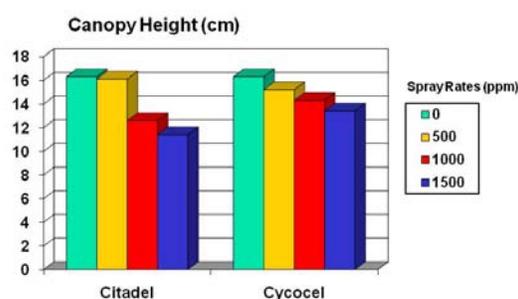
CITADEL TANK-MIXES:

CITADEL can be applied alone or tank-mixed with other plant growth regulators. Foliar applications of **CITADEL** plus **DAZIDE® 85 WSG** have been shown to provide optimum growth reduction and reduced marginal chlorosis. This tank mix may be targeted to those crops less responsive to **CITADEL** used alone. Recommended rates for the **CITADEL** and **DAZIDE 85 WSG** tank-mix are shown below.

ACTIVITY	CITADEL (ppm)	DAZIDE 85 WSG (ppm)
Very High	1500	5000
High	1500	2500
Medium	1250	1250
Low	1000	800

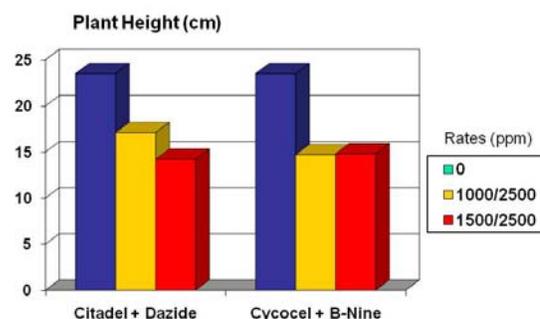
FIELD TRIAL RESULTS:

Seed Geranium 'Maverick Pink'



Dr. Brian Whipker, NCSU; 2007

Salvia 'Picante Red'



Dr. James Gibson, UFL; 2007

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