Unfortunately, these approaches did not always solve the problem on all varieties, so a new technique has been developed. We call it MBR, or Multiple Bud Removal.

MBR is different, and done much earlier than CBR or the traditional center bud removal.

How is it done?

Tip pinch each break that develops from the first pinch (the old Yellow Delaware tip pinch).

When is it done?

When a minimum of 4, maximum of 6 leaves have developed on the breaks, or when you can just feel the bud, but not yet see it.

It the leaf count is there, don't wait to feel the bud. Pinching a little earlier is better than being late. A late pinch causes uneven growth and response. If you see the bud before the proper leaf count develops, the variety is not suitable for MBR (Annes), but more likely the potential growth of the plant is not being maximized.

Benefits:

1) More attractive spray pots. Eliminates clubbiness.
2) Usable on many pot varieties.
3) Increases head size, particularly on upright varieties.
4) Reduces height. Particularly on tall growers.
5) Eliminates cost and labor of one B-9 application on tall varieties.
6) Could be used to spread workload on holiday crops by growing a combination of disbud pots and spray pots which are handled with the MBR and CBR approach.

Reminders:

1) Minimum of 4 leaves before you MBR.
2) When you can just feel the bud or earlier.
3) Works on most disbud varieties except Annes and some of the soft flowered varieties.

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CYCLAMEN SEED TREATMENT

R.E. Lyons and R.E. Widmer

Earlier reports (1, 3) indicated that cyclamen seed germination was improved when seed was soaked in water for 12 hours followed by a 20 second to one minute dip in 0.5% sodium hypochlorite (bleach such as Purex, Hilex or Chlorox) immediately prior to sowing. These recommendations were based on germination in paper toweling (in vitro) and the resultant seedlings were discarded rather than grown to maturity. The water soak (imbibition) sometimes advanced visible signs of germination. The sodium hypochlorite dip served to disinfest the seed surface of fungi and bacteria which could hinder subsequent development of the emerging seedlings. Seed of some cultivars responded favorably while germination of others was not altered.

More recent studies at the University of Minnesota explored the practicability of such treatments when seed was sown in a conventional manner in nutrient-enriched moss peat. The resultant seedlings were then grown to maturity to determine whether flowering time, plant size or any other characteristics were affected.

Soaking the seed in water for 12 hours did advance visible germination up to a week with some cultivars. Soaking the seeds also made them "sticky" and harder to manage than dry seed when sowing. Flowering time and plant growth in other respects was similar for plants from treated and untreated seed. Thus, time savings originally gained in quicker germination were no longer apparent at crop maturity.

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Research Assistant and Professor, respectively.
Seed of some cultivars was slower to germinate when dipped in sodium hypochlorite and sown in nutrient-enriched moss peat. This detrimental effect of the seed disinfestation treatment was probably caused by the residual sodium hypochlorite remaining on the seed coat.

Neither individual treatment nor a combination of the two was significantly beneficial when the seedlings were grown on to maturity. In fact, the treatments were detrimental in a few instances. Therefore, we do not recommend any cyclamen seed treatment prior to sowing.

We do recommend selecting good, early blooming cultivars, using fresh seed from reliable sources and providing proper germinating conditions (2).

References:

Special Notice
The numbering system for the Minnesota State Florists' Bulletin was to have started on the February 1979 issue but was inadvertently omitted. You can add the number on the upper left-hand corner opposite the date. The number should be: Volume 1, No. 1.

Viruses and Floriculture
B.E.L. Lockhart and F.L. Pfleger
Department of Plant Pathology

The floriculture industry has increased in growth nationwide for the past 20 years. In Minnesota, the industry has had sustained increases since the 1950's with accelerated growth occurring in the 1970's. The estimated value of the floriculture industry in Minnesota is approximately $110 million.

Disease control of floricultural crops is a necessity if the industry is to continue to grow and flourish in the state. Fungi, bacteria viruses and nematodes are pathogens which can cause plant death or loss of plant quality. Of the aforementioned pathogens, viruses are among the most economically important, especially on vegetatively propagated plant material. There are many viruses that have been identified and are commonly associated with various floral crops. Such viruses are widespread throughout the world, and in some cases it is difficult to find virus-free plants of a given cultivar. Among these universally-occurring viruses are rose mosaic, lily symptomless, tulip breaking, carnation ringspot and cymbidium mosaic in orchids, and iris mosaic viruses. Gladiolus is very commonly infected with either or both bean yellow mosaic and cucumber mosaic viruses, and many geraniums are infected by tobacco ringspot or tomato ringspot viruses.

Recently, in the Department of Plant Pathology at the University of Minnesota, we have started a program to investigate all the virus-like disorders of floricultural crops in Minnesota. The object of this program is to determine which of these disorders are in fact caused by viruses, to identify the virus responsible and to determine the means of spread, frequency of occurrence, and the range of floricultural species susceptible to infection. Finally, and most importantly, it will be possible to devise control measures based on the information gathered. This project, which will be a long-term one, will identify:

a) New viruses in floricultural crops in Minnesota.
b) Previously described viruses occurring in new floricultural crops.
c) Viruses entering Minnesota in greenhouse stock from other states.