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In Cooperation With The
U. S. Department of Agriculture
Butler County Extension Service
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THE POTTING BENCH

STABY - OSU

THIS ISSUE INCLUDES:

Lesser Known Crops - Stock and Primula
Agitate Fungicidal Drenches
Geranium School

STOCK

I. SEED GERMINATION

- A. Media mix - Loose, well-drained, sterilized mix, try 1 soil, 1 sphagnum peat, and 1 Horticultural Grade Perlite. Add Dolomitic Limestone to raise pH to 6.0 - 6.5.
- B. Sowing and Germination - Treat seed with hot water and 129 degrees F for 10 minutes (then dry seed) to reduce bacterial blight. Sow dry seed and cover (germination enhanced under dark conditions), germinate at 65 - 75 degrees F. Move seedlings to cooler location after germination.
- C. Fertilization - Use a dilute complete fertilizer.
- D. Holding seedlings - Transplant or thin in place as soon as possible, do not allow seedlings to harden.

II. SOIL MIX AND STERILIZATION -

- A. Amend bench soil to a 2 part soil, 1 part sphagnum peat moss, 1 part Horticultural Grade Perlite by volume and soil test. If soil is of heavy clay or silt type, add more perlite to improve aeration.
- B. Steam sterilize media for 30 minutes at 180 degrees F in the coldest spot.

III. PLANTING AND SPACING -

Either sow 3-4 seeds directly in bench and thin to the most vigorous seedling, or transplant the most vigorous seedling from the flat and space at 3 x 6 inch minimum or 4 x 6 inch or 3 x 8 inch for darker months. Always select the most vigorous seedling to insure the largest percentage of doubles.

IV. TIMING -

- A. Use only Column non-branching varieties. See your favorite seedsman for varieties.

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SUGGESTED SOWING SCHEDULE -

<u>SOW</u>	<u>FLOWER</u>
August 1	January
September 1	February
October 1	March
November 1	April
December 1	May
January 1	Mothers Day
February 1	June
February 15	June 15

B. Grow Stock at 45-50 degrees F. Temperatures over 60 degrees F.N.T. prevent flower bud initiation.

C. Light applied 4 hours per night, with a mum set-up after plants budded and continued until buds show color, will reduce flowering time approximately two weeks.

V. SUPPORTS -

One layer of wire, or strings should be adequate to keep the stems straight.

VI. FERTILIZER AND FEEDING PRACTICES -

Feed with a balanced fertilizer such as 15-15-15 at the following rates: $\frac{1}{2}$ - $\frac{3}{4}$ lb./100 gals./week Fall & Winter
 $\frac{1}{4}$ - $\frac{1}{2}$ lb./100 gals./week Winter

Once a month substitute Potassium nitrate at the same rates as 15-15-15.

VII. INSECT AND DISEASE PESTS -

Thrips, aphids, and leaf roller are the most troublesome for stock. (see May newsletter for control).

Stem rot and root rot diseases are most troublesome to stock. Soil sterilization, sanitation, plus a soil drench of Terraclor 75% WP - 1 teas. plus Captan 50% WP 1 teas./gal. of water applied at the rate of 1 gallon per 8 sq.ft. of bench surface will reduce this problem.

VIII. HARVESTING -

Cut spikes which have about one-half to two-thirds of the florets open. Keep spikes in a flower preservative to insure opening of additional florets.

IX. PROBLEMS -

High soluble salts, yellowing of margins and tips of lower leaves caused by potassium deficiency. Blind plants result from too high a growing temperature.

Soil moisture must be maintained at fairly high and uniform level stocks, but care must be exercised to reduce excessive high humidity and "wet-feet."

PRIMULA (Primrose)

At the outset let me state that the following suggestions of culture are for *Primula malacoides*, which does not cause skin irritation, as does *Primula obconica* on some people.

I. SEED GERMINATION -

- A. Media mix-same as stock.
- B. Sowing and Germination - Sow seed June - October 15 on surface of media, do not cover seed other than gently "watering-in" (light is essential for germination). Germinate seed at 65-75 degrees F, after germination move to a cooler location.
- C. Fertilization - same as stock.
- D. Holding Seedlings - shade seedlings to prevent sunscald and transplant as soon as possible, do not allow seedlings to harden.

II. SOIL MIX AND STERILIZATION -

- A. Use 2 part soil, 1 part Sphagnum peat moss, and 1 part Horticultural Grade Perlite mix, if potting in plastic containers use a 1-1-1 mix. Soil test and add dolomitic limestone to pH 6.0 - 6.5 and 20% superphosphate as directed.
- B. Steam or chemically sterilize media and tools.

III. PLANTING AND SPACING -

- A. "Prick off" seedlings into a flat as soon as possible and space $2\frac{1}{2}$ x $2\frac{1}{2}$ inches apart. (Do not plant the crown of the seedlings any deeper than it was in the seed flat.) It may be possible to use a cell-pak, such as used with bedding plants. This may reduce root injury at transplanting time. Avoid overwatering at this stage, but keep the soil uniformly moist. Shade transplants lightly from intense heat and light.

B. Shift or transfer to 2½ to 3 inch pot when well rooted. Make final shift to 4 inch pot or into 5 or 6 inch pots with 3 or 4 plants per pot. During each successive shift, keep the crown of the plant at the same level. Deep planting encourages crown rot and high planting causes plants to topple.

IV. TIMING -

A. Seed sown June - October 15th will flower December-May, when grown at 45 - 50 degrees F.N.T. Sowings made after October 15 result in blind plants.

B. When grown at the above temperature, flowering occurs in 6 to 8 months during the winter. *Primula malacoides* may be forced into flower earlier by raising the temperature to 60 degrees F, but quality is reduced.

V. FERTILIZERS AND FEEDING PRACTICES -

Feed with a balanced fertilizer such as 15-15-15 to maintain good foliage color. Possible suggested rates:

1 - 1½ lbs./100 gals/week	Summer
3/4 - 1 lb./100 gals/week	Fall & Spring
1/2 - 3/4 lb./100 gals/week	Winter

Do not check growth for lack of water or fertilizer.

VI. INSECT AND DISEASE PESTS -

Primula malacoides is troubled by mealybug, red spider, aphid, and white fly (see May Newsletter for control).

Crown rot is the major disease problem. Proper planting depth, sterilized media, and careful watering to avoid soaking the crown of the plant will minimize this problem.

VII. PROBLEMS -

Low fertility, low pH, poor drainage, and high soluble salts.

AGITATE FUNGICIDAL DRENCHES

Frequently your Area Agent encounters growers who have disease problems on crops drenched with the recommended fungicide.

An explanation for this problem is that the grower is expecting too much from the fungicide. To be most effective, the growing media must be sterilized and good sanitation practices must be followed throughout the crop.

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FUNGICIDAL DRENCHES - Continued

In other instances these sterilization, sanitation, and drenching practices were followed and the plants still became infected with disease. Normally the main problem in this case is not uniformly applying the fungicidal drench.

Mr. Lester Nichols, Extension Plant Pathologist, recommends that any fungicidal drench should be applied in an agitated state. Most drenching materials will readily "settle-out" unless kept agitated. I suggest that fungicidal drench materials be applied with an agitator pump sprayer at low pressure. If no agitator pump is available, a hoison or similar proporting device may be used, but the bucket of concentrate must be constantly stirred.

Other procedures which must be followed when using fungicidal drenches include:

1. Weigh the proper amount of material to treat a given area.
 - a. Apply proper amount material per pot or square foot of bench area.
3. Mix only as much material as will be used in one day (many of the fungicides "break-down" and lose their effectiveness, if not applied shortly after mixing).

GERANIUM SCHOOL

A Geranium School is scheduled for Wednesday, November 3, 1971 at the Holiday Inn of Warrendale.

A similar school will be held in eastern Pennsylvania at the Holiday Inn, King of Prussia, on Thursday, November 11th.

More complete details of these meetings will follow in the next newsletter.

Where trade names are used no discrimination is intended and no endorsement by The Pennsylvania Agricultural Extension Service is implied.

Yours truly,

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Area Floriculture and
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