



Growing Fibrous Begonias for Profit

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I. INTRODUCTION

- A. The Latin name for fibrous begonias is *Begonia semperflorens-cultorum*.
- B. Fibrous begonias are excellent bedding plants for shady areas.
- C. The new F₁ hybrids perform well in sun or partial shade.
- D. The rapid increase in the popularity of fibrous begonias is due to their versatility and attractiveness in beds, hanging baskets, window boxes or pots.
- E. Fibrous begonias are low-maintenance plants which do well in warm summer weather and provide the customer with continuous blooms.

II. CULTIVARS

- A. Fibrous begonias are grown primarily from seed and occasionally from cuttings.
- B. They are available in dwarf, intermediate and tall heights.
- C. The foliage is dark green, light green or bronze.
- D. The flowers are available in colors ranging from white to pink to deep red.
- E. Cultivars with green foliage and single flowers include:

1. Dwarf (3-5" in pack) (6-8" outside)
 - a. Bicola (red and white)
 - b. Derby (salmon pink and white)
 - c. King of the Reds (red)
 - d. Linda (rose tinged with salmon)
 - e. Matador (scarlet)
 - f. Olympia (white, red)
 - g. Pearl (pink, white, red)
 - h. Rose Perfection (rose)
 - i. Sleeping Beauty (carmine)
 - j. Tausendschon or Thousand Wonders (white, pink, red)
 - k. Verdo (white, light pink, bright pink, light scarlet, scarlet)
 - l. Viva (white)
 - m. White Planet (white)

2. Intermediate (6" in pack) (8-10" outside)
 - a. Cinderella (rose, white)
 - b. Foremost (red, pink)
 - c. Gladiator (red)
 - d. Hot Tip (red)
 - e. Mars (red)
 - f. Mizar (red)
 - g. Muse (rose)
 - h. Organdy (pink, white, red, rose, red mix)
 - i. Orient (pink, scarlet)
 - j. Party Girl (pink)
 - k. Party Boy (red)
 - l. Scarlanda (red)
 - m. Scarletta (red)
 - n. Venus (rose)
3. Tall (6" in pack) (10-12" outside)
 - a. Frilly (red, pink)
 - b. Glamour (red)
 - c. Hybris (red, rose)
 - d. Sensation (pink, rose, scarlet)
4. Hanging baskets
 - a. Avalanche (pink)

F. Cultivars with double flowers

1. Blushing Baby (light pink)
2. Christmas Candle (deep rose)
3. Jewelite (scarlet, pink with bronze foliage)
4. Ruffles (white, pink, red)
5. White Christmas (white)

G. Cultivars with bronze foliage

1. Dwarf (3-5" in pack) (6-8" outside)
 - a. Ambra (pink, rose, salmon, scarlet, white, salmon/red margin)
 - b. Brandy (pink)
 - c. Coco (ducolor, scarlet, salmon pink, bright pink)
 - d. Comet (rose, red, white)
 - e. Galaxy mix (pink, red, white)
 - f. Gin (rose)
 - g. Jet (pink, rose salmon, red, white)
 - h. Vodka (scarlet)
 - i. Whiskey (white)
2. Intermediate (6" in pack) (8-10" outside)
 - a. Othello (scarlet orange)
3. Tall (6" in pack) (10-12" outside)
 - a. Danica (scarlet, rose)

III. PROPAGATION

- A. Begonias are grown primarily from seed.
 - 1. Only use seed from reliable sources and order new seed each year for best results.
 - 2. Store the seed in a cool, dry place that is safe from rodents and insects.
 - 3. There are approximately 2 million seeds per ounce.
- B. Good germination requires:
 - 1. High humidity (90-95%)
 - 2. Air temperature of 70-80°F
 - 3. Soil temperature of at least 70°F
 - 4. Light — do not cover seed
 - 5. Fine, porous media mix — such as peat-lite mix or fine sphagnum are recommended.
- C. Sowing seeds properly is important since the seeds are so small.
 - 1. Moisten the media thoroughly before sowing. Watering immediately after sowing may bury seed or wash seed away.
 - 2. Sow the seed in rows about 1" apart and ¼" deep.
 - 3. A standard sized flat (11½ × 22¼") will require about 1,000 seeds.
 - 4. The seed is very fine and must be sown carefully to prevent clumps.
 - 5. Do not cover the seed.
 - a. Light induces higher and more uniform germination.
 - b. High aeration is required for germination.
 - 6. Use a fungicide drench treatment to prevent damping off.
- D. Keep the surface of the media uniformly moist.
 - 1. Water carefully so that seed is not washed away or buried by soil. Use a fine water fog nozzle or an automatic mist system which mists for 6 seconds every 10 minutes.
 - 2. Use warm water (70°F). Cool water (below 60°F) will delay germination.
 - 3. Seed is so small that any moisture fluctuation will result in seedling death.
- E. Air temperature, humidity and light are all important during germination.
 - 1. The best air temperature is between 70° and 75°F.
 - 2. Keep the soil temperature above 70°F by applying bottom heat. Use a soil thermometer to check.
 - 3. To keep humidity high, cover the flats with clear polyethylene or glass.
 - a. This will also raise the temperature under the polyethylene.
 - b. Remove the polyethylene on very warm or sunny days to prevent excessively high temperatures.
 - c. Covering the flats may eliminate the need for additional watering.
 - d. Remove the covering after germination when seedlings are first visible.
- 4. Place flats in a sunny greenhouse or under lights.
 - a. High amounts of red light hasten germination. Seeds will germinate in 3-5 days under 24 hours of red light.
 - b. Seeds germinate in approximately 14-21 days under natural sunlight.
 - c. Remove the seedlings from under warm white or red light immediately after germination or the seedlings will etiolate and stretch. The seedlings can then be placed under cool white fluorescent light for uniform growth.
- F. Fertilization
 - 1. Proper nutrition is essential to producing high quality bedding plants.
 - 2. Apply a light liquid feed of 100 ppm of 20-20-20 about 3 weeks after sowing.

IV. TRANSPLANTING

- A. Grow seedlings for the first 2 weeks after germination at 70°F, then lower the night temperature to 60°F.
- B. Since the seed is so fine, seedlings often are bunched together in the germination flat, resulting in a mass of seedlings.
 - 1. Break up the mass carefully into small clumps and replant into another flat.
 - 2. Skilled transplanters are necessary to avoid damaging the seedlings.
- C. Seedlings can be transplanted about 7-9 weeks after sowing.
 - 1. Transplant by size, since begonias do not germinate evenly.
 - 2. Transplant when the first true leaves are present, or when seedlings can easily be handled.
 - 3. Don't delay transplanting; older seedlings experience a greater transplant shock.
- D. Transplant into thoroughly moistened medium.
 - 1. Protect from direct sunlight with a shading material that blocks out 50-80% of sunlight.
 - 2. Do not allow the flats to dry out.

V. GROWING

- A. Temperature
 - 1. Five weeks after sowing, drop the night temperature to 60°F.

Crop Calendar for May Sales of Impatiens

JANUARY				FEBRUARY				MARCH				APRIL				MAY				
WEEK: 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
							X	<i>Sow</i>				X	<i>Transplant</i>				X	<i>Flower</i>		

See Fig. 1 (page 4) Weekly Stages in Development of Impatiens.

E. Growth regulators

1. Impatiens do respond to B-Nine.
2. Apply 6-7 weeks after sowing at spray 0.5%.

VI. TIMING

- A. Total time for Impatiens crop is 8-10 weeks for pack sales and 12-14 weeks for individual pots and hanging baskets.
- B. Schedule (pack sales):
 - Week 8: Sow seed (70-75% night temperature)
 - Week 11: Seeds germinated (60-65° night temperature)
 - Week 13: Transplant seedlings
 - Week 18: Flowering plants for sale

VII. PROBLEMS

A. Insects

1. Aphids
 - a. Aphids are tiny, crawling plant lice that suck plant juices and cause plants to be stunted.
 - b. They are often found on the growing tips or under leaves.
2. Thrips
 - a. Thrips are extremely small insects that can be found on the growing tips of plants.
 - b. Thrips cause distorted leaves.

3. Spider mites

- a. Spider mites are found primarily on the underside of leaves.
- b. They reproduce faster in warmer temperatures.
- c. Spider mites suck plant juices and can cause plants to be chlorotic or necrotic.

B. Diseases

1. Botrytis
 - a. Botrytis is a foliar disease which appears under cool, moist conditions.
 - b. Prevent botrytis by providing good air circulation and practicing good sanitation.
 - c. Avoid placing flats right on the ground in early spring.
 - d. Avoid free moisture on foliage and flowers.
2. Rhizoctonia and Phythium damping off diseases
 - a. Damping off occurs primarily in seed flats and causes the death of seedlings.
 - b. Steam or chemical treatment of the soil will help prevent this problem.

C. White top leaves

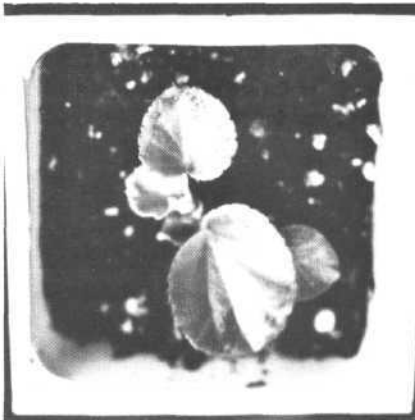
1. Usually plants are being grown under too cool conditions.
2. This could also be caused by a high pH.

D. Excess foliage and too few flowers

1. This could be caused by too much fertilizer, especially nitrogen.
2. Another cause could be too much water.

Production Schedule (by week) For Sale of Begonias May 1

January				February				March				April				May	
Jan. 16				Feb. 5				Mar. 13								May 1	
WEEK: 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SOW SEED				GERMINATE				TRANSPLANT								FLOWER	



WEEK 11

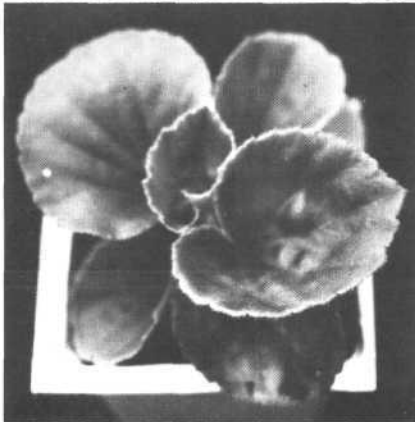
TRANSPLANT (seed sown week 3);



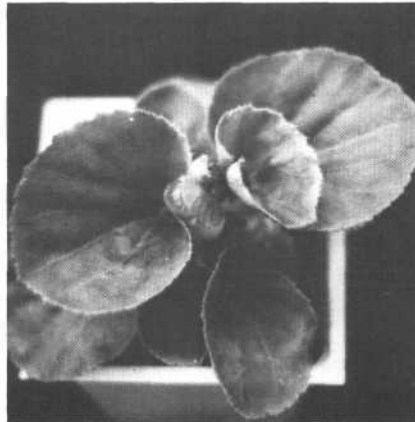
WEEK 12



WEEK 13



WEEK 14



WEEK 15



WEEK 16



WEEK 17



WEEK 18 (total crop time 15 weeks)

Fig. 1 — Weekly Stages in Development of Begonia

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