



*B. silletensis* subsp. *silletensis* leaf cuttings rooted on paper by Rekha Morris

# The American Begonia Society Save Our Species Newsletter

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Editor: Rekha Morris

## Propagating on paper Bill Claybaugh

In two recent issues of **The Begonian** (Sept-Oct, 07 and May-June, 08) I have described a propagation technique for rhizomatous begonias, called "Propagating on Paper". The method can be briefly described as follows: A rhizomatous begonia leaf is cut into numerous pieces, each containing a vein, then cleaned in a dilute clorox solution, and rinsed in distilled water. These leaf pieces are then placed on a wet paper mat in a terrarium environment. Moderate temperature and light are maintained while the leaf pieces develop roots, then plantlets. When plantlets are established, they are transferred to small pots in regular potting medium. See the referenced articles for more details.

One of my early observations using this technique was the significant variation in response between different begonia varieties. This was re-emphasized recently when I tried to propagate three African species namely *B. microsperma*, *B. staudtii*,

and *B. quadrialata* var. *quadrialata* all at the same time using the same method. *B. staudtii* formed roots then plantlets within three months. *B. quadrialata* formed reasonable root systems at four months but no plantlets at six months. *B. microsperma* had only a very few roots at six months. The one thing common among the three varieties, however, was that all three formed roots and plantlets after three months on leaf stem cuttings. When preparing a leaf for the paper propagation technique, I always leave some of the leaf blade on the leaf stem (petiole). This leaf stem piece always goes into the propagation box too, and it develops roots and plantlets faster than any of the blade pieces.

One final comment: the Papua New Guinea species *B. brevirimosa*, which is usually very difficult to work with, will root and develop plantlets fairly easily using this technique. I recently started over 20 new plants from leaf cuttings, all in a three month period.

## Propagating begonias from leaf & stem cuttings

### Butch McDole

These notes on propagation of begonias from leaf and stem cuttings were used for discussion by the Atlanta chapter of the ABS. They elicited so much response and discussion from the group that the notes were circulated to all members of the chapter, and are presented here to encourage others to propagate begonias especially species begonias.

#### Propagation medium:

##### [1] **Water:**

Easy method for canes & other forms including some rhizomatous.  
Move to soil after roots appear.  
Keep covered until roots are large.  
Watch for rot, & trim or remove.

##### [2] **Potting Mix:** Sand Perlite, other mixtures.

Fairly easy if not too wet or too dry.  
Keep covered until new leaves appear.  
Vent daily & extend venting time daily.  
Provide drainage to maintain moisture at optimum levels.

##### [3] **Light:**

Fluorescent light perfect for starting cuttings.  
Place plants as close to light as possible for at least 12 hrs. daily

##### [4] **Other factors:**

Rooting hormones – doesn't matter  
Bottom heat—speeds up rot!

#### Cutting types

##### [1] **Stem cuttings**

All canes and some rhizomatous  
Cut at least 3 nodes for best results

Rhizomatous cuttings may be placed horizontally or vertically in the rooting medium

##### [2] **Leaf Cuttings:**

Remove outer perimeter on large leaves to minimize surface area  
Prop leaf vertically to avoid contact with rooting medium –soil, perlite, etc.  
Leave an inch or two of petiole and insert into water or potting medium  
Petioles may be removed when placing leaf on surface of medium  
Large leaves may be cut in sections with one vein per section  
Cut across major veins and lay entire leaf on damp medium. New Plants develop along each cut.

#### Key Observations

##### [1] **Keep covered:**

Humidity prevents transpiration loss & is crucial for plants without roots  
Keeps germs out at a delicate stage

##### [2] **Use clean pots and potting medium:**

Buy new pots or sterilize old pots  
Sterilize soil in oven or microwave  
Keep cutting tools sterilized

##### [3] **Provide drainage:**

Helps prevent overwatering  
Helps pull oxygen into rooting medium

##### [4] **Give as much light as possible:**

Fluorescents work well, are energy efficient, and do not get hot.  
Place as close as possible as in the case of Seedlings.  
Leave on for several hours a day.

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### Input from members of Atlanta Chapter of ABS

**Janet Harris** does most of her leaf cuttings in water. Selecting a leaf of medium age in good condition she trims the petiole to an inch or two, and places it in a vial or cup of water that has been allowed to sit for at least 24 hours. She places these vials of cuttings in her terrariums until roots appear. The most important requirement for this method of propagation is to provide a clear cover for these cuttings such as a clear dome, inverted cup, baggie or a terrarium. Even though roots may develop in a few days when kept covered they may be left for several months without having to pot them up.

**Russ Richardson** says that canes may be rooted easily in clean, damp sand. The sand may be reused as some of the rooting hormone from previous use may remain in the sand, and will help with the rooting. The sand should be 3-4 inches deep and free of salt. He has also had good results rooting hybrids of *B. rex* and rhizomatous begonias in damp sphagnum moss in clear, covered plastic shoe boxes. For Russ the success rate is the same whether he uses rooting hormone or not.

**Chris Parker** reports that she has had good success with cuttings from leggy branches of her cane begonias such as 'Cracklin Rosie,' 'Sierra Mountain King,' and others. She sticks these cuttings in a pot of good potting soil with a watering of 10-15-10 Schultz fertilizer. They usually root and send up new leaves in a few weeks.

**Rekha Morris's** input is described by her starting on p. 4 of this Newsletter.

**Happy Growing!**

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the moisture level and root rot. The success rate with such traumatized roots and rhizomes by this method of propagation has been phenomenal.

Two unidentified species which I was unable to keep alive despite all the care I took in cleaning and transporting them back, are for the first time alive and sending up several healthy leaves per rhizome. Stem cuttings of several fibrous rooted species have likewise rooted for the first time since I began recording the begonias of the eastern Himalayas in 2005.

The Mexican species whose roots, rhizomes and stem cuttings I brought back at the end of this March are rooting so rapidly by this method of propagation that I can hardly keep up with them! Instead of the single fish tank with which I started last fall I now have 15, all packed with plants in various stages of growth and maturity.

Thanks to Bill's initiative the intense level of failure and frustration I have suffered watching dozens of roots and rhizomes either dry out or rot has now been almost totally dispelled. The lesson to be learned is "rush in where angels fear to tread"! Caution is a virtue but success despite risks is indubitably sweeter and far, far more satisfying!

**RM**



## Editor's Notes On Propagating on Paper

A day after I read Bill Claybaugh's first note on propagating on paper in *The Begonian* [Sep. / Oct. 2007] I took stem cuttings of two species from south India, which as far as I am aware, are no longer in cultivation in the USA, *B. albo-coccinea* and *B. subpeltata*, and placed them on moist paper towels in a clear plastic container in which we had bought croissants. Being both in a hurry and inclined to take short cuts whenever possible, I did not follow Bill's meticulous procedure. Instead I moistened the paper towel with water to which I had mixed powdered Neem leaves, about 1/4 teaspoon to a gallon of water, and left this to stand for several days in an open bucket to allow the chlorine to evaporate. I generally have several buckets of this mixture available for watering my begonias. The powdered Neem leaves turn the water a light green, and using this on a weekly basis has kept my plants free of spider mites, mealy bugs, powdery mildew, and other such destructive pests.

Despite Bill's warning that using any plant food at this stage would create fungal infestation, I used the same neem water with a few drops of kelp plant food to spray the paper towel and the stem cuttings every other day to prevent their drying out. The result was beyond my expectations as all the stem cuttings soon sent out fibrous roots, and the use of Neem prevented fungal infestation.

With this set of cuttings I did not wait for plantlets to form, but potted them up in small pots 3/4 filled with potting medium topped by an inch or so of perlite. Before setting the fibrous roots in this perlite layer I drenched the potting medium and the perlite with Neem water, as past experience with sowing seeds has indicated that since Neem also prevents fungal infection there is no damping off of tiny seedlings. I set the pots in a 10 gallon fish tank on a 1/2" layer of pea gravel, and covered the tank with a piece of clear acrylic which I had cut to size at Lowes. Every other day I would spray the leaves with the neem water to which I would add a drop of Super Thrive, & leave the tank open for about 1/2 an hour or so. Whatever liquid dripped out of the pots remained at the bottom of the tank to create ambient moisture, & the layer of pea gravel kept the pots above this moisture so that the roots did not remain overly wet. I now have several small plants of both *B. albo-coccinea* and *B. subpeltata* to share.

It was fortuitous that Bill's article appeared when it did, and I was able to experiment with this method of propagation just before I left for India to document begonias in the eastern Himalayas. On my return in late Dec. 2007 I decided to set all the roots and rhizomes I brought back on moist paper towels where I could see them, and at the first sign of any rot slice off these sections and save the rhizomes. Placing them in a potting medium as I had done previously resulted in a fairly high rate of loss as it is extremely difficult to monitor the moisture and prevent the rhizomes from rotting. The rigorous cleaning I have to subject these roots and rhizomes to in order to pass USDA inspection is so traumatic that they either go dormant for long periods or die altogether. In this dormant stage it is essential that the roots and rhizomes are kept just barely moist, and it is this delicate level of maintenance which is extremely difficult when they are placed in a potting medium. By placing them on moist paper towels in large foil lasagna pans with clear covers allowed me to monitor both

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