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AIR-LAYERING SIMPLIFIED

by Tom Del Hotal

The following outline will contain details for the application of 6" by 10" air-layering bags. This bag size has been useful in developing air-layers 3 to 6 feet tall with a branch caliper of 3/4" up to 2" in girth. Since a shoot-to-root ratio must be maintained, larger or smaller bags may be used when air-layering larger or smaller branches.

PREPARATION OF THE AIR-LAYERING BAGS

MATERIALS

1. Plastic bags, 4-6 mil. thick (Available from: Bradley's Plastic Bag Co., 9130 Firestone Blvd., Downey, CA. 90241, (213) 923-5566, (213) 773-1478, (714) 994-2242)

We found that 4 mil bags, 6 inches wide by 10 inches long was an excellent size.

2. Rooting medium. We used 100% pre-moistened peat moss or a mixture of 80% peat moss and 20% perlite.

3. Twine, 6' to 8' in length for each bag

PROCEDURE

1. Add water to the rooting medium so that it is moist but not soggy.

2. Fill the bags 3/4 full. Place the medium into the bag so that it is firm but not overly packed.

3. Tie the bags closed using the twine. Leave a 6" "tail" at the short end of the twine. Coil the twine around each bag.

The air-layering bags are now ready for application and may be stored for several weeks or months. It is best to store these bags in a cool, dark location to prevent the growth of algae or mold and the deterioration of the plastic by sunlight.

APPLICATION OF THE AIR-LAYERING BAGS

MATERIALS

1. Hand pruners
2. Girdling scissors (optional)
3. A knife (A linoleum "hook" knife is preferred, but any knife will work.)
4. Pliers, Channel locks, or Vise grips
5. Rooting hormone. (A liquid solution is preferred to dry powders. We found that an 8,000 p.p.m. I.B.A. solution achieved excellent root formation when rooting hard-wood branches.)
(One source for I.B.A. is: Hortus USA Corp., 245 West 24th St., New York, New York 10113-1956 (212) 929-1626)
An alternate rooting hormone that I have had good results with is liquid Dip N Grow.
6. An applicator for the rooting hormone
7. Prepared air-layering bags
8. Heavy duty aluminum foil
9. Permanent marking pen

PROCEDURE

1. Select the branch to be air-layered. An upward growing branch in good sunlight will have the best chance of developing good root formation. For the application of a 6" by 10" air-layering bag, select a branch which is 3' to 6' in length and is 3/4" to 2" in caliper.
2. Prepare the region of the branch where the air-layer bag is to be applied by removing all leaves and side branches for a length of approximately one foot.
3. Girdle the branch twice using the girdling scissors or knife. Girdling cuts should be approximately 1 1/2" to 2" apart
4. Remove the bark from the branch in the area between the two girdling cuts by using the pliers and stripping away the bark with a twisting motion.
5. Using the knife, scrape the branch lightly in the area where the bark has been removed.
6. Wound the branch twice, on opposite sides of the branch, for a length of approximately 3"-5" above the girdled area.
7. Apply the rooting hormone. The branch should be completely coated for a length of 4" to 6" above the girdled area.
8. Cut open a prepared air-layering bag by slicing lengthwise into the bag. Cut into the rooting medium 1/2 the depth of the bag.
9. Remove a small amount of rooting medium from the air-layering bag along the length of the cut.
10. Wrap the prepared air-layering bag around the girdled branch. The bottom of the bag should begin at the bottom of the girdled area and extend completely over the area of the branch where the rooting hormone was applied.
11. Close the air-layering bag by overlapping the cut sides of the plastic bag and wrapping the twine tightly around the bag in a spiral fashion. Tie the bag closed using the end of the twine and the "tail" of twine at the top of the bag.
12. Rotate the air-layering bag so that the cut side faces downward toward the ground.
13. Cover the air layering bag completely with aluminum foil. The shiny side of the foil should be facing outwards during seasons of high temperatures and the dull side should be facing outwards during seasons of cool temperatures.
14. Place the date on the air-layered branch.

REMOVAL OF THE AIR-LAYERS AND ESTABLISHMENT INTO CONTAINERS

Air layers are ready to be removed from the parent plant when the air-layering bags have been permeated by developing roots. Normally this will take 6 to 12 weeks. Roots will be most visible on the downward side of the bag. The air-layer should be removed when sufficient roots are present to hold the root ball intact but before excessive rooting has caused the root ball to become root-bound.

MATERIALS

1. 2-3 Gallon nursery containers
2. Potting soil
3. A bulb planter or hand trowel
4. Plant stakes
5. Plant ties
6. Hand pruners
7. A knife
8. A water filled container-5 gallons or larger
9. Labels
10. Antitranspirant (such as Wilt-Proof or Cloud Cover) and sprayer
11. A mist or shade house

PROCEDURE

1. Remove the air-layered branch from the parent plant by cutting the branch 3" to 4" below the bottom of the bag.
2. Cut perforation holes into the plastic bag which will allow water to enter into the root ball.
3. Rehydrate the root ball by soaking it in the container of water for a period of 1 to 8 hours.
4. Fill the nursery containers with pre-moistened potting soil and prepare a planting hole of the appropriate size for the air-layer's root ball.
5. Cut the twine away from the air-layer bag and carefully remove the plastic bag. Be certain not to disturb or break apart the root ball which may be very fragile.
6. Place the air-layer into the soil filled container. The top of the air-layer's root ball should be just below the surface of the potting soil. The bottom of the root ball should be at least 3" to 4" above the bottom of the container.
7. Pack the soil around the air-layer's root ball by carefully packing soil at the bottom of the root ball and working up.
8. Stake the air-layer by using 2 or 3 stakes. Place the stakes at the outer parameter of the container so that the root ball is not disturbed. Place the stakes in opposing directions to stabilize the air-layer.
9. Water in the newly transplanted air-layer.
10. Spray the foliage of the air-layer with an anti-transpirant. (Wilt-Proof and Cloud Cover are two trade names for anti-transpirants that are available in California.)
11. Place the air-layer in a mist house or shade house until it is rooted into the container. Normally this will take 3 to 6 weeks. Acclimatize into normal growing conditions.

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