



- Harvesting seeds
 - Cleaning seeds
 - Storing seeds
- Seed starting media
 - Planting seeds
 - Care of seedlings





Dry seeds such as *Bidens hillebraniana*



Into your hand, or . . .



directly into an envelope.



Some fruit don't look ripe until it is too late. *Brighamia insignis* fruit stay green until they pop open and drop all their seeds.



Place the green, but full-size fruit on a piece of paper until they pop open and drop their seeds.



Gardenia brighamii takes several months to form and ripen fruit.

Some plants take what seems like forever to form fruit.





Wait for *Gardenia*brighamii fruit to get
brown, soft, and drop
their blossom end
before harvesting.

- Harvesting seeds
 - Cleaning seeds
 - Storing seeds
- Seed starting media
 - Planting seeds
 - Care of seedlings













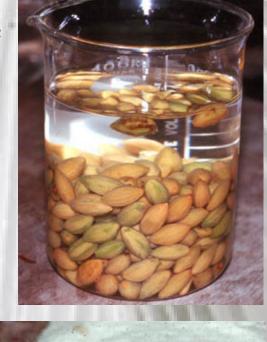
- Fleshy seeds
 - Place in water
 - Crush fruit to remove seeds
 - Pick out large pieces
 - Swirl and dump to removed junk



Cleaning seeds



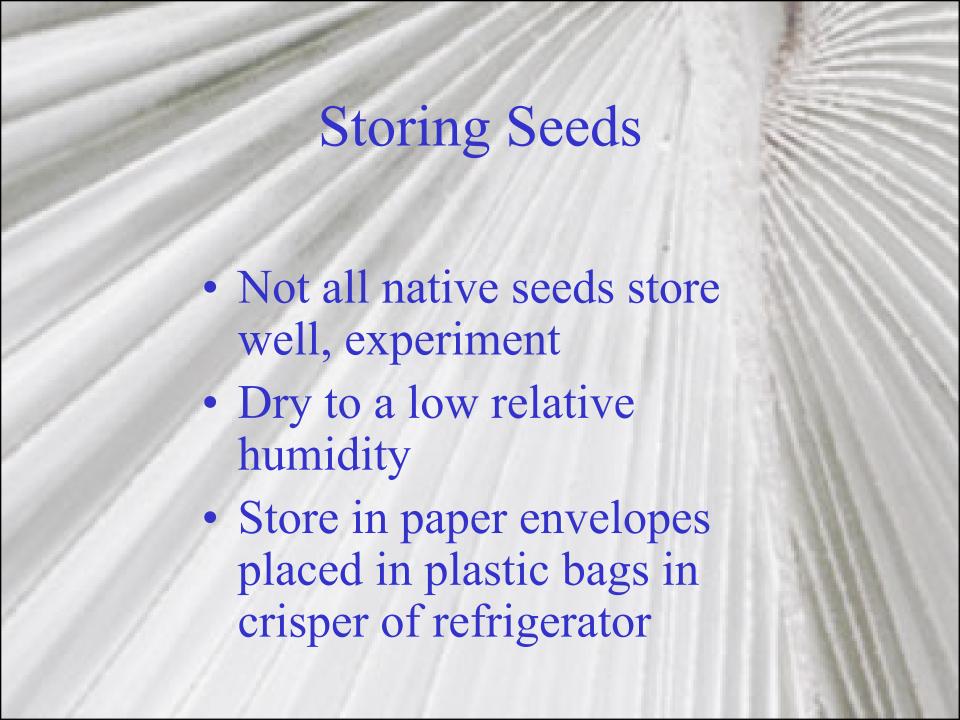
• Use a knife to remove flesh







- Harvesting seeds
 - Cleaning seeds
 - Storing seeds
- Seed starting media
 - Planting seeds
 - Care of seedlings



- Harvesting seeds
 - Cleaning seeds
 - Storing seeds
- Seed starting media
 - Planting seeds
 - Care of seedlings

Seeds Starting Media



- Vermiculite
- Perlite
- Sterile potting mix





- Harvesting seeds
 - Cleaning seeds
 - Storing seeds
- Seed starting media
 - Planting seeds
 - Care of seedlings







- Remove seeds from water
- Evenly spread seeds on surface of medium
- Water
 - top water for big seeds
 - Bottom water for small seeds
- Keep moist, but not wet

Planting Seeds



- Remove seeds from water
- Evenly spread seeds on surface of medium
- Water
 - top water for big seeds
 - Bottom water for small seeds
- Keep moist, but not wet
- No need to cover most native seeds with medium

- Harvesting seeds
 - Cleaning seeds
 - Storing seeds
- Seed starting media
 - Planting seeds
 - Care of seedlings





 Transplant at cotyledon stage or first true leaf stage





- Transplant at cotyledon stage or first true leaf stage
- Prick out with pencil or chopstick



- Transplant at cotyledon stage or first true leaf stage
- Prick out with pencil or chopstick
- Grab by cotyledon or leaf, not stem
- Transplant to individual pots



- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility

Harvesting Cuttings



- Choose healthy growth
- Non-flowering, nonseeding growth is best
- When taking cuttings from woody plants, use proper pruning methods



- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility





- Remove lower leaves
- Use sharp pruners or knife to make a clean cut
- Dip in rooting hormone, if needed

- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility





- Liquid
- Powdered
- Not necessary for all cuttings

- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility





- Perlite
- Vermiculite
- Potting mix



Cuttings

- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility









- None
- Plastic bag
- Humidity chamber



Humidity Control



- None
- Plastic bag
- Humidity chamber
- Mist



Cuttings

- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility

Care of Cuttings



- Remove any dead or dying leaves while roots are forming
- Transplant to potting mix when roots emerge from cutting pot or new growth starts

Cuttings

- Harvesting cuttings
 - Preparing cuttings
 - Rooting hormones
 - Rooting media
 - Humidity control
 - Care of cuttings
 - Juvenility

Juvenility



- Seedlings/plants that have not yet started to flower
- Hard-to-propagate
 plants may sometimes
 propagate from
 cuttings if juvenile
 growth is used

Juvenility



- Examples
 - Kauila
 - Alahe`e





Air Layering

- Choosing a branch
 - Procedures
- Maintenance of air layer
- Care of air layered plant

Choosing a Branch



Rauvolfia sandwicensis

- Pick a healthy, nonflowering branch that is the size and shape of the plant you want to produce.
- Choose a spot on the branch that will result in a proper prune when the air layer is removed

Air Layering

- Choosing a branch
 - Procedures
- Maintenance of air layer



 Make two incisions in the bark around the diameter of the branch one inch apart and connect with another incision



Remove the bark
 between the incisions
 using the connecting
 incision as a starting
 point



- Apply rooting hormone.
- Place damp, not wet, sphagnum moss around the wound.



• Compress and shape sphagnum moss to cover the wound and about one to two inches in either side of the wound.



• Cover with plastic (and foil if desired) and tie off ends with twist ties.

Air Layering

- Choosing a branch
 - Procedures
- Maintenance of air layer

Maintenance of Air Layer



- Leave it alone for a few months.
- Check occasionally for roots by gently squeezing the sphagnum moss.
- Remoisten moss if it dries out.



Division Use on many clumping, rosette-type plants Machaerina angustifolia



