RE-POTTING GUIDELINES

Notes from Peter Tea
Bonsai Study Group,
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Presentation prepared by

Renee Seely

INTRODUCTION

- There are many techniques and methods taught; just pick up any bonsai book or look on the internet.
- I will share what I have learned from my study group with teacher Peter Tea.
- Spend a few minutes to ask yourself why you are re-potting – this will guide decisions about soil composition, container, etc.

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- The reason we re-pot is to manipulate how the Bonsai grows.
- All techniques in Bonsai are developed to direct the growth of the tree so we can then turn them into Bonsai.
- Here are some reasons why to re-pot a tree.
  - 1. The tree is in a mix that is too wet
  - 2. The tree is in a mix that is too dry
  - 3. The tree is so root bound that the health of the tree starts to decline
  - 4. To slow the growth of a tree (trees that are too strong)
  - 5. To accelerate the growth of a tree (trees that are weak)
  - 6. To develop the root spread and root system
  - 7. To get the tree into a mix that is manageable by the owner
  - 8. To change the planting angle of the tree
  - 9. To place in larger pot for tree health
- Just like the other techniques we apply to our Bonsai, always consider the species and health of the tree and vary your degree of root pruning.

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- **As you're re-potting, you should also ask yourself these questions:**
  1. *Are we continuing the development of roots?*
  2. *Is the tree in the ideal position?*
  3. *Is the tree firmly tied to the pot?*
  4. *Is the soil mix we're using going to cause the tree to grow too fast or too slow?*
  5. *Is there enough or too much room in the pot for the roots to grow?*
  6. *Is this an appropriate pot for the tree?*

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- **When to Re-pot**
- The best time to re-pot is December through February. Start with deciduous trees first then conifers.
- **Re-potting Interval**
  - **Deciduous**
    - Developing: 2-3 years
    - Refinement: 1-2 years
  - **Conifer**
    - Developing: 2-3 years
    - Refinement: 3-5 years
  - **Broadleaf Evergreen**
    - Developing: 2-3 years
    - Refinement: 1-2 years

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- **Re-potting Early vs. Later**
  - Due to our mild Winters, it can make a difference re-potting in December vs. February. It all comes down to how fast you want the Bonsai to grow.
  - Re-potting in December generally yields a strong Spring push whereas re-potting in February slows down the Spring push.
  - The difference is not huge but can be enough to affect how refined trees continue to develop.

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- **Soil Mixtures**
  - **Most Conifers:**
    - Fast growth mix: 33% Akadama, 33% Pumice, 33% Lava
    - Average growth mix: 40% Akadama, 30% Pumice, 30% Lava
    - Slow growth mix: 50% Akadama, 25% Pumice, 25% Lava
  - **Most Deciduous:**
    - Fast growth mix: 33% Akadama, 33% Pumice, 33% Lava
    - Average growth mix: 50% Akadama, 25% Pumice, 25% Lava
    - Slow growth mix: 75 % Akadama, 12.5% Pumice, 12.5% Lava
  - **Most Broadleaf Evergreens:**
    - Can use either Conifer mix or Deciduous mix. Dependent on species of plant material.

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- **Soil Sizes and Container Sizes**
  - Soil component size can change how much water the soil mixture holds. Smaller soil size has more surface area in a given container so surface tension of water plays a larger roll and the soil will hold more water than larger soil mix.
  - Generally small trees use smaller soil size and larger trees use larger soil size.
  - When creating your soil mix, keep the size of the individual components as consistent as possible. In a heterogeneous mix, large particles work their way up to the top and small particles work their way down to the bottom of the pot..
  - Use a soil sifter to sift the soil components to size before mixing them together.
  - The size of the container also plays a role in how much water is retained. Large containers have larger surface areas and tend to hold water longer.
  - Very small containers don't hold much water at all.
  - Think about the size of the container, the soil mixture you plan on using, then make the adjustments as needed to get just the right amount of water retention.

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- **Pros and Cons of Level vs. Mounded Soil to Finish the Re-Pot**
  - **Level Soil Surface**
    - **Pros:** Ideal for maximum root health and easier to water.
    - **Cons:** One element of showing age is not utilized
  - **Mounded Soil Surface**
    - **Pros**: Makes the Bonsai look like it has been growing in the container for a long time. This helps add age to the Bonsai.
    - **Cons:** Soil tends to wash away when watering. Maintaining a healthy root spread is more difficult.

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- **Tools and Materials for Re-potting**
  - Bonsai Container
  - Soil
  - Screen
  - Root scissors
  - Root hook
  - Root rake
  - Root cutter
  - Root sickle
  - Chopsticks
  - Wire pliers
  - Wire cutter
  - Small brush

- **A Few Other Things from Renee's List**
  - #2 Aluminum Wire
  - Spray bottle with H2O
  - Spray bottle with 70% alcohol for cleaning tools between trees

SOIL COMPONENTS

Akadama – naturally occurring clay-like mineral from Japan

Lava – solidified molten igneous rock from volcanoes

Pumice – blasted into air from volcanoes, light weight, soft texture

Hyuga – a type of pumice, used for drainage layer

GET ORGANIZED

- Prepare soil: Sift and mix soil components
- Organize tools
- Prepare new pot: Clean, cover holes with mesh, insert tie down wire

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- **Re-potting Steps:**
- **Raw trees:**

1. Cut tie downs wires
2. Use a root sickle to cut along the inside wall of the container
3. Remove tree from container
4. Find the root spread by raking the top of the soil
5. Lay the tree on its side and rake the bottom of the soil ball
6. Bring the tree upright and lightly rake the sides
7. Raw trees may be coming from nursery potting soil which needs to be replaced with bonsai soil

   Bare root if the tree allows. If not, bare root a small section and repeat over the next few repots.
8. Prepare the container with screen and tie down wire
9. Add drainage layer if needed

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- **Re-potting Steps Continued:**

  10. Add small amount of Bonsai soil to cover the bottom of the container; create a small mound of soil where the center of the tree will be placed

  11. Place tree on top of the soil mound and slightly work the tree down into the soil

  12. Make required adjustments - side to side lean, front to back lean, offset and soil level.

  13. Add a small amount of Bonsai soil and gently work into roots with a chopstick.

  14. Tie root mass down with tie down wires

  15. Add more soil and gently work into roots. Keep filling soil to the desired level, usually level with the top of the container.

  16. Water the tree till the water runs out the bottom of the container. Keep watering untill the water runs out clear.

- **Refined Bonsai:**
  - Same as above except reverse **steps 4 and steps 5**

GET THE TREE READY

- Remove from current pot
- Prepare roots (this is one of the most important things you will do for developing your tree)
- Follow steps #4 - #16 in the previous 2 slides.

POST RE-POT CARE

- Protect tree from freezing temperatures, strong sun and wind. Place in protected area for several weeks.
- Do not fertilize for several weeks.
- Return tree to normal growing conditions.