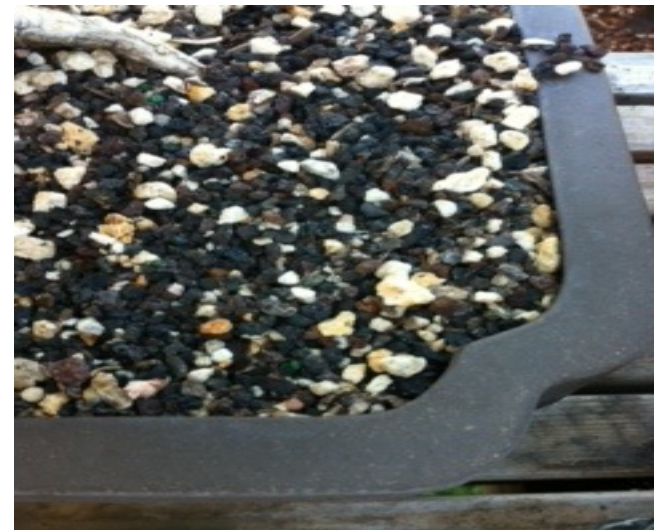


# Fertilizer: The other thing that goes in the pot (besides soil)

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A proper fertilizing scheme is essential for bonsai success

- Bonsai containers have very little space available from which the roots can obtain nutrients
- Bonsai mixes are typically primarily made up of drainage materials (scoria, pumice, etc.) and do not contain large amounts of organic materials to hold onto nutrients or decompose and release nutrients into the soil



# The facts of life

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We are all busy people juggling jobs, family, and other responsibilities and cannot always keep up with all of our bonsai maintenance

- If you find yourself in such a position, remember one thing:
- **KEEP FERTILIZING YOUR TREES**
- Once you find time to relax with your bonsai you will have healthy trees to enjoy
- There is nothing worse than finally having time for your trees only to find that they are in such poor shape that there isn't enough foliage or branches to wire
- If you keep them healthy they will be waiting for you

Developing a fertilizing scheme to match your lifestyle is essential to successfully growing bonsai

# What do you feed your trees?

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The answer is not quite as simple as “everything”

- Bonsai purists insist on only organic fertilizers
- Cottonseed meal, bone meal, blood meal, fish emulsion, sea weed mixes, etc.
- All of these products are great for your trees, but they do take a little longer to breakdown. That means the nitrogen, potassium, and phosphate are not available to your trees immediately
- The greatest argument for their use is the trace elements they provide (calcium, copper, iron, manganese, molybdenum, zinc, etc.)
- “Feed the soil that feeds the plants” – organic fertilizer are digested by soil microorganisms, which then release nutrients in a form available to plants
- “Slow, steady feeding as the plants require it” – nutrients are not in a readily available form until they are digested by microorganisms in the soil
- “The safest choice for your plants” – unlike synthetic fertilizer, organic fertilizer has an extreme low salt index, no risk of burning

# Applying Organic Fertilizer

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Applying an organic fertilizer can be tricky

- You can mix your own and make fertilizer cakes that are easily placed on the surface
- Boon's fertilizer cake mix
  - 4 cups Cottonseed Meal
  - 4 cups Bone Meal
  - 3 cups Fish Emulsion (I used fish meal, less smell)
  - 1 cup baking flour
  - Mix with minimal water and dry in the sun turning over to dry backside (the faster the better)
  - Cut into 1.5 inch squares
  - Resulting cake is about a 9-8-1 nitrogen, phosphorus, potassium



# Applying Organic Fertilizer

Another option is to buy Rapeseed cakes (easy!)

- There are no animal ingredients (bone meal, fish meal, etc,) so less chance of critters taking your fertilizer
- Rapeseed cake is 5-2-1 nitrogen, phosphorus, potassium
- However these are relatively expensive
  - 1.1 lbs for \$13 to \$17 which is approximately \$12 per lb
  - Home made fertilizer cake mix approximately \$2 per lb



# Applying Organic Fertilizer

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Fertilizer cakes will work, however the fertilizer will break down and can clog your soil, preventing good drainage

The best remedy for the application of organic fertilizers is to use tea bags

- Buy a package of empty tea bags, fill them with your favorite fertilizer, and just lay them on the surface of your soil



# Applying Organic Fertilizer

Fertilizers for tea bags

Plant-tone available at Lowes and has been seen at Home Depot

- 5-3-3 nitrogen, phosphorus, potassium
- \$17 for 8 lbs (\$2 per lb)

Dr. Earth Premium Gold Organic available at Walter Andersons

- 4-4-4 nitrogen, phosphorus, potassium
- \$34 for 25 lbs (\$1.30 per lb)



# Applying Chemical Fertilizer

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The major advantage to using chemical fertilizer is the instant availability of the nutrients

However there are potential downsides to using chemical fertilizer

- Chemical fertilizer can be concentrated and can harm your plants
  - It is possible to over fertilize which can cause leggy growth or destroy microscopic root hairs that feed you trees
  - They are the horticultural equivalent of fast-food for your plants
  - All simple nutrients for putting on vegetation quickly
  - Think giant corn producing mega-farm product
  - Bonsai are grown for the long haul so we need a bit of nutrition
  - A snack of chemical fertilizer may be okay, but try not to rely on it
  - So says Bonsai Society of San Francisco
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- However chemical fertilizers do have their practical uses – read on



# Applying Chemical Fertilizer

What do you do when your trees are on display such as the Safari Park or Lake Merritt or the Huntington?

- Fertilize cakes or tea bags are unsightly
- All three gardens use controlled release fertilizer and may supplement with other fertilizers throughout the year
- This may be the fertilizing scheme that matches your lifestyle



California Juniper at the Safari Park

# Applying Chemical Fertilizer

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Osmocote is a recommended time release fertilizer

- 10-10-10 nitrogen, phosphorus, potassium
- Available everywhere
- Home Depot 2 lbs for \$10.48 or 8 lbs for \$24.98
- Release rate related to temperature
  - Cool temperatures, minimal plant growth, minimal fertilizer release
  - Warm temperatures, plant growth increases, fertilizer release rate increases
- Our “strange” weather can result in the tree and time release fertilizer not being in perfect sync



# Applying Liquid Fertilizer

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- Liquid fertilizers are fast acting and quickly absorbed
- However, liquid fertilizers require more applications (does this fertilizing scheme that match your lifestyle?)
- Every time you are watering your bonsai you are washing away the fertilizer you previously applied – short lived
- Liquid fertilizers come in organic and chemical form
- Some bonsai artists supplement with liquid fish fertilizer (2-4-5)
  - Fish emulsion contains vitamins, amino acids, and growth hormones
  - Nitrogen and other nutrients are readily available
- Other bonsai artists use Miracle-Gro (12-4-8) every two weeks during the growing season



# Bonsai Fertilizing Tips

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- Never over fertilize your bonsai, as this can burn or damage the roots. If in doubt better to under fertilize.
- Do not fertilize a plant during its dormant season.
- Do not fertilize a sick plant. Dormant or sick plants will not consume enough nutrients, and the nitrogen will remain in the soil, causing salt levels to increase.
- Check the fertilizing needs of your species.
- Do not fertilize re-potted plants for at least one month.
- Young trees will need more frequent fertilizing, while trees no longer in training will require less, since you want to maintain growth rather than encourage new development
- Always water before fertilizing. Never apply fertilizer to dry soil.