

# NORTH FLORIDA BONSAI CLUB

## April 2017

### NFBC Officers

Josh Brown	President
Open	VicePresident
Bruce Washington	Treasurer
Ron Price	Secretary

### April News

- **Our meeting on Monday, April 10 is at the Mandarin Garden Club 7:00 PM.**
- We have soil! If you need soil contact Mike [bettsmike@hotmail.com](mailto:bettsmike@hotmail.com), and please return your empty buckets.
- 2016 / 2017 membership dues now due. Cost is \$36 for the year. This includes membership in BSF and the BSF electronic magazine. We made 40 buckets of soil. We have about 7 left. So, we have to make more soil. Stay tuned for details.

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## *BSF / ABS Convention*

### *May 25 – 29, 2017*

*Moving American Bonsai Forward  
The Florida Hotel, Orlando Florida  
Presented by the American Bonsai Society  
And the Bonsai Societies of Florida*

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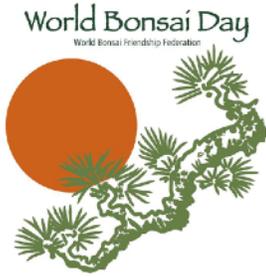
•Apr TBD

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### Azalea at National Arboretum



Note our new website: <http://www.northfloridabonsai.com/>



## WORLD BONSAI DAY

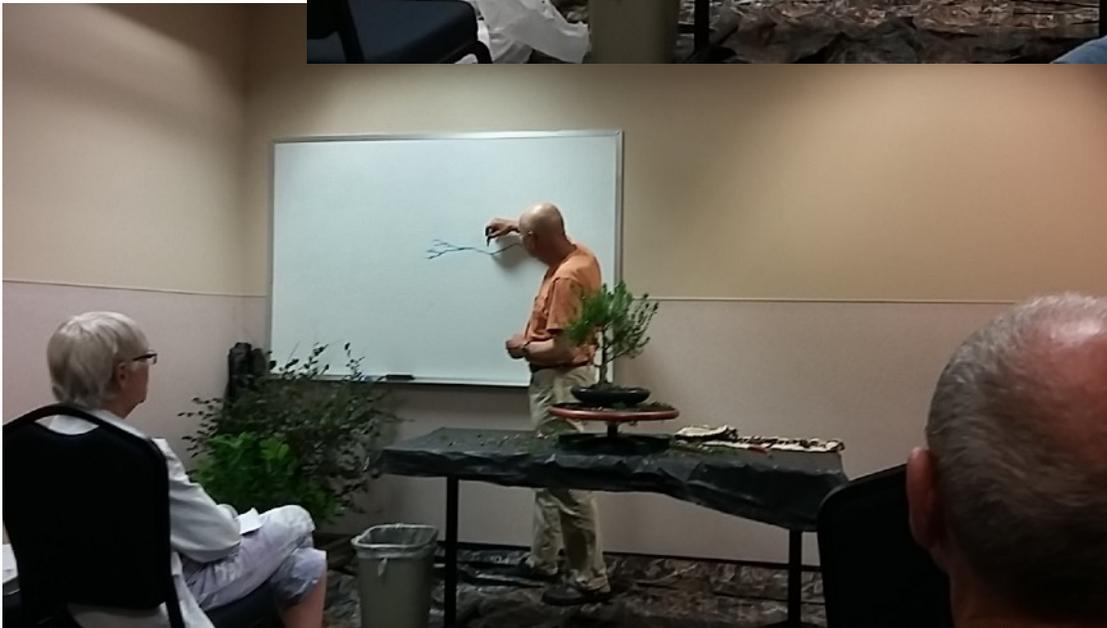
May 13, 2017

Each year, on the second Saturday in May, the WBFF along with the NABF sponsor a "World Bonsai Day" celebration. On this very special day, clubs, organizations and individuals throughout the world are encouraged to reach out into their respective communities and share the joy and brotherhood we all feel because of our involvement with bonsai.

Not much to report. By now, we should wrap up repotting Pines, Podocarpus and deciduous trees. You can still repot boxwood. Elms are a case by case. You will want to finish repotting Junipers before the hot weather hits. Which as we have experienced is highly unpredictable.

I would have said to begin to repot Ficus, but with the temps in the 40s this weekend, I would wait. I like to have temps., consistently in the high 50s to 60s before potting tropicals. Patience is the key in avoiding a catastrophe.

## Ted Matson Workshop in March



# Full Disclosure, I create and sell Sumo Cakes [www.sumocakes.com](http://www.sumocakes.com)

## Bonsai Fertilizer Basics

Where does one start when talking about fertilizers for bonsai? The one thing I do know is that there is no such thing as “bonsai fertilizer.” Fertilizers come in all

sorts of varieties, you can see that when you walk into your local garden center. You have fertilizers for absolutely everything. I bet when you walk into the garden center and walk over to the fertilizer section, you will see 10 or more kinds of fertilizers. What kind do you buy? What do you look for? Do you buy inorganic or do you look for something

organic? What are these three numbers on the front of the package mean?

At the end of this article I will compare three different fertilizers that people use on their bonsai collections.

Let's break it down and answer some of these basic questions. Let's start with what you should be looking for. When I am looking for a fertilizer for bonsai, I am looking for something that is balanced. Balanced just means that the Nitrogen (N), Phosphorus (P), and Potassium (K) content are all equal. You will see this listed on the package label as three numbers usually appearing as 10-10-10 or 12-4-8 or something similar. That is the NPK rating of the fertilizer. The higher the number the more concentrated that nutrient is. Nitrogen helps plant foliage to grow strong. Phosphorous helps root and flowers grow and develop. Potassium (Potash) is important for overall plant health.

If you were to stop reading now, you could walk into the garden center, find a fertilizer for under \$10, follow the directions on the package and your bonsai would be fertilized and it would grow. However, just as with anything, there is more.

The NPK tells us the concentration of the three main Macro Nutrients, but here is the more I mentioned above. Plants are complex organisms with many different types of cells that require different nutrients to maintain their functions and to keep the plant strong, just like us as humans. If we lack nutrients in our bodies we can live, but we won't be as strong and healthy as we could be. The different types of nutrients that plants require are the main



Macro Nutrients, NPK, the three Secondary Nutrients, the Micro Nutrients followed by Vitamins and Minerals.

## Secondary Nutrients

Calcium is essential for the development of strong cell walls and is also used in cellular signaling, a biological process critical to a plant's health. Magnesium plays a big role in the photosynthesis process because it is a building block of Chlorophyll, which gives leaves their green color. Sulfur in plants helps form important enzymes and assists in the formation of plant proteins.

## Micro Nutrients

Micro Nutrients are only required in small (micro) amounts but are still very valuable to the health of our bonsai. There are seven Micro Nutrients that we always see listed as important, but there are others. The seven important ones are Boron, Chloride, Copper, Iron, Manganese, Molybdenum and Zinc. As important as Micro Nutrients are, you still won't find them in most fertilizers.



Boron plays a role in cell wall formation along with moving sugars (energy) throughout the bonsai. Chloride plays a role in photosynthesis, internal water balance by allowing proper stomatal openings and the suppression of plant diseases. Copper is required in the process of photosynthesis, it is essential for plant respiration and assists in plant metabolism of carbohydrates and proteins. Iron is essential in the formation of chlorophyll and it helps carry oxygen throughout the bonsai.

Manganese is a major contributor to photosynthesis and respiration. Also, aids in root cell elongation and resistance to root pathogens. Molybdenum is used by plants to convert inorganic phosphorus into organic forms in the plant. It is also used to convert nitrate into nitrite (a toxic form of nitrogen) and

then into ammonia before it is used to create amino acids within the plant. Last, we have Zinc. Zinc activates enzymes that are needed for the creation of certain proteins. It is used to

help form chlorophyll and some carbohydrates, conversion of starches to sugars and its presence in plant tissue helps the plant to withstand cold temperatures. Zinc is essential in the formation of auxin, which help with growth regulation and stem elongation.

## Inorganic vs. Organic

There are a couple of notable differences between organic fertilizers and inorganic fertilizers. Organic fertilizers contain only plant- or animal- based materials that are either a byproduct or the result of naturally occurring processes, such as manures, leaves, and compost. On the other

hand, inorganic fertilizers are manufactured artificially and contain minerals or synthetic chemicals.

With inorganic fertilizers, the nutrients are provided in a plant-ready form immediately. However, the concentration of nutrients in this form

(usually liquid) increases the risk of “burning” the roots of the plant if provided in the wrong amounts as well as building up of toxic salts in the soil. The rapid release of nutrients may leach them deeply into the soil or completely out of the bonsai pot so the bonsai can’t access them. What happens when fertilizing with inorganic fertilizer is that we pour the fertilizer onto the soil and it runs through the soil and collects where the water collects (in pores of lava rock or pumice for example). The bonsai absorbs the nutrients now, but when we water again tomorrow we are washing away the fertilizer. When you fertilize with an inorganic fertilizer with a complete inorganic soil we want to fertilize every 7-10 days to replenish the nutrients.

Organic fertilizers release nutrients when the soil is warm and moist (when we water our bonsai or when it rains), which tends to correspond with your plants’ times of greatest need. Organic fertilizers rely on soil organisms (mycorrhizae) to break down organic matter into a form that the plant can utilize, so nutrients are released more slowly than they are from inorganic fertilizers. This slow-release reduces the risk of nutrient leaching, but it takes time to supply nutrients to plants. What happens when you use organic fertilizers, whether in cake form (Sumo Cakes) or loose in tea bags. You place them on top of the soil and when you water your bonsai or it rains the

fertilizer gets wet and the nutrients leach into the soil every time. You would want to replace the cakes or tea bags about every 4-6 weeks to maintain the nutrients going to the bonsai.



## Mycorrhizae

In the last paragraph, I introduced a term, Mycorrhizae. Mycorrhizae are helpful fungi and bacteria that colonize the root zone of plants and are very important in the overall health of our bonsai. Mycorrhizae help break down organic fertilizers into forms that the plant can absorb easily. Some mycorrhizae grow in the soil around the roots while others attach themselves to the roots. The mycorrhizae then can transport water and nutrients to the roots of the tree from places that the roots do not inhabit. In turn, by helping the tree grow

strong, the tree returns the favor and transports nutrients to the mycorrhizae. Having a healthy colonization of fungal and bacterial growth in the bonsai pot creates a network in the soil that expands the area of the roots to greater absorb water and nutrients. At the same time as helping the tree absorb water and nutrients, the mycorrhizae help fight harmful fungal and bacterial attacks and can strengthen the overall health of the tree.

## Product Comparison

One thing you hear when it comes to fertilizers is that you can just go to your local garden center and pick up the cheapest fertilizer you can find and you will be OK. Now, this may be true, but look at Miracle-Gro liquid fertilizer simply called “Liquid All Purpose Plant Food”. It is an inorganic fertilizer that you can pick up for as little as \$6 a jug. Its NPK rating is 12-4-8. It has the three main Macro Nutrients but it does not contain any of the Secondary Nutrients and it only has three Micro Nutrients. That is all that is guaranteed in the bottle. If you want to provide your bonsai with the rest of the nutrients, you are going to have to buy more products.

Let’s look at BioGold Original. It is an organic fertilizer caked into triangular pellets. It has an NPK rating of 5.5-6.5-3.5. Again, it has the three main Macro Nutrients, but no Secondary Nutrients and only four of the Micro Nutrients. That is all that they guarantee. Again, you may have to purchase other additives to provide the other nutrients. Sumo Cakes has a NPK

rating of 4.8-4.8-4.8 and contains the three main Macro Nutrients along with the three Secondary and 7+ Micro Nutrients along with 70+ naturally occurring Vitamins and Minerals. Sumo Cakes also contains 39 different Mycorrhizae species. Sumo Cakes can be purchased at [www.sumocakes.com](http://www.sumocakes.com).



## Conclusion

In conclusion, it is correct to say that any old fertilizer will do. However, in the long run you might run into issues of different nutrient deficiencies. This could lead to the death of the bonsai, the loss of limbs, poor flower production, less budding and the list goes on. When you recognize the deficiency, you do have the option of buying a product that contains the nutrient that you need to correct the issue.

When I created Sumo Cakes, I wanted to avoid the issues of different deficiencies and having to buy different products to fit the needs of my bonsai. I wanted a product that made feeding bonsai easy. I wanted a fertilizer that focused on the roots. I am happy to say that I now have one. I have always maintained that if you can't grow roots, you can't grow a bonsai.