

Poo Poo Ball Fertilizer Compendium

Introduction

The following “compendium” provides information on the tools, recipes, and techniques used for making organic bonsai fertilizer. There is a reason this article refers to this fertilizer as “**poo poo balls**” rather than their more polite and neutral name of “**fertilizer cakes**”: It is to emphasize that, until they dry, **poo poo balls stink**. They have a lingering olfactory quality that smells like a bad cross between a fish processing plant and a ripe Port-A-Potty on a hot, windless, summer day. While drying, poo poo balls, should be located in an area away from people that have a sense of smell and neighbors you like.

Poo poo balls should be made on-site. *Warning:* Unless you want to drive around with your car windows down for an indeterminate time, do not transport wet poo poo balls *inside* a motor vehicle. They are best transported in the back of an uncovered pickup.

Even when dried, poo poo balls have a faint odor. Dogs, cats, some birds and assorted wildlife sometimes confuse them with food and will eat them. While poo poo balls are drying, they will draw flies and, if not screened off, may become maggot nurseries.

That being said, they are a great safe non-burning fertilizer that will properly nourish a bonsai with each watering for a complete grow season. Given poo poo balls slow nutrient release, they have a distinct advantage over liquid fertilizers, which have to be carefully measured, mixed and applied in a weekly fashion. Even then, with liquid fertilizers, there is the risk of under fertilizing or alternately, burning your bonsai.

Tools & Equipment

- Masonry mixing tub
- Rubber gloves
- Quart measuring cup
- Cookie dough scoop
- Flexible putty knife or other flexible scraper
- Shallow card board boxes (or drying racks)
- Plastic liner for boxes
- Fly screen for top of boxes (optional)

Recipe #1 – From Scratch

Batch Quantity

Makes about 350 balls using a 1½ inch cookie dough scoop
Approx. N-P-K by volume is 5.2-4.6-1.0

Dry Ingredients

(Contains micronutrients)

- 9 cups Cottonseed Meal 6-2-1

(Sometimes used in place of grape seed meal in Japan)

- 4 cups Bone Meal 3-15-0
- 2 cups Fish Meal 10-4-0
- ¾ cup Kelp Meal 1-01-2

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Wet Ingredients

- 4 cups Fish Emulsion 5-1-1
- 1/2 cup Vita Start 3-8-4
- 1/2 cup liquid 0-10-10

Directions

Mix dry ingredients thoroughly before adding wet ingredients.

Next, add the wet ingredients and mix into dry. Start adding the wet ingredients until you reach a thick oatmeal like texture. It should be just wet enough for you to be able to make a ball in your hand without it falling apart, yet not too wet to become sticky. If you have time, wait a few minutes to see if you need to add more fluid due to the dry ingredients soaking up the liquid.

Ball Method: Using a cookie dough scoop, packed the scoop full of the mixture. Use the putty knife or other flexible tool to compress the poo poo ball into the scoop. Place each ball on plastic sheet inside the container you are using. Cardboard coke and beer six pack cartons lined with plastic work best. Do not put your fertilizer balls directly on paper or cardboard. Dry for several days until the balls are completely dry.

Alternate Cake Method: Fill the plastic lined carton with about one inch of mixture. Compress the mixture and then make 1 inches slices horizontally and vertically. To allow for air flow and speed up drying, scrape these pieces up and place them into another plastic lined container. The cake method is less desirable because the cakes are not likely to have a uniform size.

Make enough for one season. Extra can be stored in air tight bags in your freezer or you can feed them to the pets of neighbors you don't like (*just joking*).

Recipe #2 - Instant Poo Poo Balls

Batch Quantity

Given there are only three ingredients, the batch quantity is easier to adjust. The following proportion will make a batch of 50 to 60 poo poo balls.

Dry Ingredient

2 pounds (5 cups) of Whitney Farms All-Purpose Plant Food 5-5-5

Unsolicited Sales Pitch: This is a completely organic plant food. It is made from dried poultry manure, bone meal, blood meal, sulfate of potash, alfalfa meal, kelp meal and feather meal. In addition to these ingredients, it contains many varieties of ecto mycorrhizal organisms. The product comes in 4, 15 and 40 pound sizes.

Wet Ingredients

2 cups (1 pint) Alaskan Fish Emulsion 5-1-1
1 cup of water and/or Alaskan Morbloom 0-10-10

Directions

Use the exact same directions as above except skip mixing the dry ingredients. Given there are only three ingredients, there is a lot of flexibility on batch proportions. The ratio is 2 lbs (about 5 cups) of Whitney Farms, to 2 cups of fish emulsion and 1 water and/or Morbloom.

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Regardless of the batch size, dump the Whitney into a tub and “pour” the Fish Emulsion over it. I use the word “pour” advisedly. Fish Emulsion is barely a liquid. Add water and/or Morbloom and knead the mixture together with your hands.

If the day is cool and you work fast, you might not need to add more water. The ideal mixture should be just wet enough to hold a ball shape, but not so wet that it easily falls apart. In the process of scooping out and working the poo poo balls, you will probably have to add more liquid to compensate for evaporation. Just be cautious when adding more fluid.

Estimates on Poo Poo Ball Utilization

The table below assumes that the poo poo balls were made using a 1½” cookie dough scoop. However, these values must be adjusted for each individual plant rather than a simple height measurement.

While it is difficult to burn a bonsai with poo poo ball fertilization, it can be done. If heavily fertilized, be aware that leaves and needles may become disproportionately large. This might not be a bad thing if your priority is rapid growth rather than fine tuned styling. Also factor in the density of foliage and trunk size in making the final determination for the poo poo ball distribution quantities.

Bonsai Size Class	Rough height	Poo poo balls
Tiny	1 ”	1/2-1
	1-3”	1
Small	5-8”	1-2
	7 ”	2-3
	6-10”	3
Medium	16 ”	3-4
Medium to Large	16-24”	5
Large	39 ”	5-6
	47 ”	6-8

Reusable Poo Poo Ball Drying Racks

Because I have more than a few bonsai, I make poo poo balls every year. And since I have a lot of scrap wood and wood working tools, I have made reusable poo poo ball drying trays. If you have a table saw, a finishing gun, a staple fastener, construction tape, and some odds and ends of building materials, you might do the same. This is especially true if you don’t like flies and their offspring.

The drying tray consists of a bottom tray with an overlapping top piece (see pictures below). Each piece is covered with a fly impenetrable screen. With a table saw, I started by ripping some 2 by stock down into 1½x1½” slices. Regardless of the 2by stock you use, avoid knots and warped wood which will lead to weak and difficult fits.

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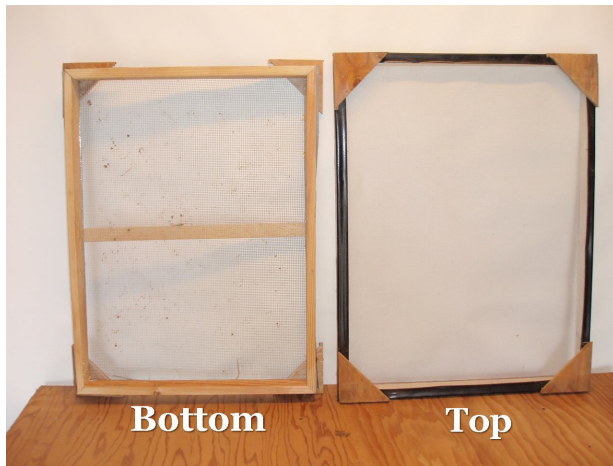
For the bottom assembly, I made a 24"x18" *outside measurement* frame. For the top, I made a 24¹/₄x18¹/₄" *inside measurement* frame. This configuration will hold about seven dozen (82) balls. In retrospect, a 16"x16" configuration would be easier to make and to store.

Before proceeding, I made sure both frames were square and the top frame easily slid over the bottom. Once I was comfortable with the fit, I covered the bottom frame with 1/8" hardware cloth and the top frame with window and door screen. Normal door screen will also work for the bottom but you will have to strengthen the bottom with wooden slats. Using 3/8" staples, I pulled the screens taut and tacked away.

Once the screen was in place, I trimmed off the edges and covered them with construction tape. The tape protects against any sharp wire points and further frustrates persistent flies.

To both strengthen the frames and provide additional airflow, I nailed 1/2" plywood triangle wedges into all the corners. These wedges are diagonal cuts made out of 4"x4" plywood squares. The wedges allows for stacking multiple trays on top of one another.

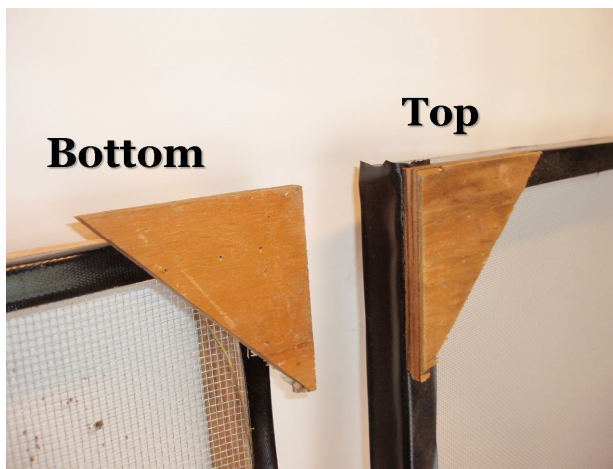
Individual Frames



Partially Opened Tray



Close up of Tray Corners



Tray Stack



Courtesy of Rocky Lawton and the Sunset Bonsai Club