

THE MAKING OF MAGIC

**A simple DIY guide for preparing your own Bokashi
Bran**



INTRODUCTION

If you have knowledge, let others light their candles in it- Margaret Fuller

Bokashi bran, the star ingredient of Bokashi Composting process. All through the phase when I began Bokashi composting, I tried various combinations and had several questions. I gradually found answers for most of my questions. For those few questions that remained unanswered, nature showed a way out. I realized the need to pay it forward so people don't have to struggle like I did.

I know of several people who are into Bokashi composting, but are jittery to get started with making Bokashi bran at home. To burst all myths and to show how easy it is to make your own Bokashi bran at home, here we are.

There are various different ingredients and methods that are used to prepare the bran. I would like to present you with my method, which I have been following since a decade.

As you read the document, you might find it boring and tedious. But let me assure you, it is all worth it at the end of the day.

Come, let's create magic!

COMPONENTS OF BOKASHI

Bokashi is a pleasant smelling product made using a combination of molasses and bran that has been infused with Effective Micro-organisms (EM). Bokashi has traditionally been used to increase the microbial diversity and activity in soils and to supply nutrients to plants.

The most important component of Bokashi is *lactobacillus* bacteria, which can be cultured in the bucket when conditions are favorable.

More Information about bacteria's

The three main bacteria's are:

- **Lactic Acid Bacteria** - This family of bacteria makes yogurt and cheese. They convert sugars into lactic acid. In doing so they lower the pH making conditions that inhibit growth of pathogenic microbes as well as making it impossible for methane producing microorganisms to survive.

- **Yeasts** - Yeasts are single celled fungi such as those used in making bread and alcohol. They are fermentation starters.
- **Photosynthetic Bacteria** - These bacteria are the ones that allow the other microbes in the mix to coexist. They use light to metabolize organic and inorganic substances, say the photosynthetic bacteria perform an incomplete photosynthesis anaerobically. They are especially beneficial as they can transform substances like hydrogen sulfide into useful substrates. As well, in the process water molecules are split yielding oxygen in the root zone.

Ensure to keep the following materials ready.

- Ingredients
- Large bucket or airtight container(s)
- Something to mix the materials in or on
- A syringe

Making of *Lactobacillus* Serum

I culture my own *lactobacillus* serum, starting with rice wash water solution. Making the serum is amazingly simple.

Ingredients

- Rice
- Lukewarm water
- Muslin cloth

Procedure (Part 1)

1. Mix one part rice (an kind of rice) thoroughly with two parts lukewarm water (1/2 a cup to one cup)
2. Mix thoroughly and vigorously.
3. Drain. The resulting water should be cloudy.

The water is now a rich source of carbohydrates. In this step, you can substitute rice with another carbohydrate source if you don't have rice, as long as it is complex (don't use simple carbohydrates like sugar, honey, syrup, molasses, etc). You can use wheat, barley, quinoa, and other carbohydrates as the base to make your carbohydrate wash. This wash will attract microbes from the air, among them *lactobacilli*.

4. Place the rice water in a container with 50-75% head space allowing plenty of air to circulate.
5. Cover lightly, preferably with the muslin cloth so that air moves in and out of the container.
6. Place in a cool dark spot for 5-8 days
Now, wait until the mixture smells mildly sour.

Tip

You will know its done when you see a light film on top (molds) and it smells a little sour and forms 3 layers. This is indicating that the rice wash is infected with various microbes. This happens more quickly in warm temperatures because microbes are more active.

After 5-8 days, the layers are distinct.

- **Top layer:** Floating carbohydrates leftover from fermentation and possibly molds
- **Middle layer:** Lactic acid and other bacteria. We will use this layer
- **Bottom layer:** Starch, byproduct of fermentation

Extract the middle layer using a syringe. This layer contains the highest concentration of lactic acid bacteria and lowest concentration of the unneeded byproducts. You can strain out any other layer particles.

Procedure (Part 2)

1. Transfer the extracted serum from the previous procedure in a new container, larger than the first.
2. Mix with 10 parts milk (unboiled desi cow milk). For example, if you have one cup of the serum, mix it with 10 cups of milk.

Tip

*The best milk to use in unpasteurized natural milk. However, any milk will do, even powdered milk. In our experience, the best is unpasteurized natural but just use what is available. We just want to saturate with lactose to promote *L. bacilli* bacteria. By saturating with milk (lactose), we dissuade other microbes from proliferating, leaving *L. bacilli*.*

3. Close the container with the lid just loose enough that gas can escape.
4. Allow 14 days for a complete ferment. Depending on the temperature, you'll see curds (made of carbohydrate, protein, and fat) on top of the

milk. The water below will be yellow colored - this is whey, enriched with lactic acid bacteria from the fermentation of the milk.

Note:

Microbes like L. bacilli are more active in warmer temperatures. The curds you see are a byproduct of the fermentation process. Fermentation is generally associated with microbial processes under anaerobic (no oxygen) conditions. Now, L. bacilli is a facultative anaerobe, that is it can live and work with or without oxygen, but less competition in anaerobic conditions.

5. The water below (whey+lacto) is the good stuff. You can extract this. You can either skim the curds off the top or pour through a strainer.

Note:

Remember the curds, or byproduct of milk fermentation by L. bacilli, are great food. They are full of beneficial microbes like L. bacilli. Feed the curds to the soil, compost pile, plants, animals, humans - whoever wants them! They are full of good nutrients/microbes. No waste in natural farming.

You now have purified *Lactobacillus* serum.

6. To preserve at room temperature, add an equal part of palm sugar/Jaggery (which acts as food) to the serum. So, if you have 1L of serum, add 1 kilo of palm sugar or jaggery. Otherwise, refrigerate it.

Making of Bokashi Bran

The Bokashi bran is moderately easy and cheap to make and here is a simple way to make it. Typically made from rice bran, wheat husks or wheat bran, people also use anything from saw dust, oats, barley, wood chips and even unsalted peanut husks.

You must ensure to keep the following materials ready.

- Ingredients
- Large bucket or airtight container(s)
- Something to mix the materials in or on

Ingredients

- Bran (any of the above) - 10 parts
- Lactobacillus serum - 4 tbsp
- Jaggery/Molasses - 4 tbsp
- Non-chlorinated water - 10-12 cups

Procedure

1. Add Jaggery/molasses to water and mix well.
2. Add *Lactobacillus* serum.
3. Shift the bran to a container, so that it's easier to mix.
4. Add the prepared liquid slowly and mix vigorously until the liquid is added and all the bran material is dampened. Bokashi mix should be equally damp and should slightly stick to itself (similar to how we knead chapati/roti dough).
5. Now that the mixture is mixed thoroughly, ensure you start adding the mixed dough into the container identified without leaving any air gap. You must squeeze all the air out of the bran mix and compact it.

Note:

Air gap creates the wrong bacterial culture. If you notice white mold (which is yeast), it indicates success. In case you notice black, green or gray mold, throw your mix away.

6. Close the lid tightly.
7. Store for about 15 days in cool dark area for fermenting.
8. Open the fermented mix, which should smell like apple cider sweet. Shade dry it in partial sun (not direct harsh sun), on a clean dry surface.
9. Transfer the Bokashi bran to an air tight container and use it for your Bokashi composting needs.

References

1. Carandang, Gil and Gentry, Patrick. *Lactobacillus* Serum. <http://theunconventionalfarmer.com/recipes/>.