

MISO is paste made by fermenting soybeans (could be other beans) with salt and **Koji**. Rich in protein, vitamins, antioxidants, enzymes and minerals. Can be made into soup, dressings, marinades and more.

WHAT IS KOJI?

Koji (*Aspergillus Oryzae*) is a key to Japanese traditional diet. This unique ancient microbe creates beneficial enzymes, amino acids and more. Koji is steamed rice/grain inoculated with Koji spores, filamentous fungus (mold) used in food production mainly in China and Japan.

MARVELOUS MUTANT

Koji didn't exist in natural world—it appeared as a mutant. DNA analysis proves that **there is no toxicity found** in Koji even though Koji is technically a mold. Brewers isolated Koji and kept in a safe environment, so it dropped the genetic information that produces toxins.

NATIONAL TREASURE

Food, drink and condiments made from Koji became an important foundation of Japanese food culture: Sake, Miso, Mirin, Soy Sauce, Amazake, Rice Vinegar etc. In 2006, the Brewing Society of Japan recognized Koji as Kokkin, National Culture and “the treasure”.

HOW KOJI IS MADE

Koji spores are inoculated with steamed grains and incubated under the certain environment that grows the mold rapidly. Each culture is unique and requires different temperature controls, timing of growth, humidity etc. Each batch must be made from spores. Using Koji to make another batch of Koji is considered to be a violation of integrity, and the quality degrades quickly.

DELICATE NATURE

Once Koji is made, it can be used into different products. Or it can be dried and stored as dried form, but heat needs to be applied to Koji during the dehydration process, so some enzymes might be lost since they will not survive if the temperature exceeds 140 degrees.

BENEFITS OF KOJI: DIGESTIVE AID AND MORE

Digestive enzymes break down our food into molecule level of nutrients. Koji is packed with digestive enzymes. By taking Koji along with other food, it helps us absorb nutrients into our body easily. Koji also has all the nine essential amino acids and is rich in Vitamin Bs and antioxidants.

Are Soy Beans Good to Our Body or Harmful?

Unfermented soybeans contain large quantities of natural toxins or “antinutrients.” First among them are potent enzyme inhibitors. By fermenting, those toxins will be deactivated and becomes easier to digest. Fermented soybeans are rich in probiotics, minerals, Vitamin B and K, antioxidants and known to lower cholesterol and reduce the risk of heart disease, cancer and osteoporosis.

- 1. Variety of Miso** Typical classification: White, Yellow, Red—for different uses
- Variety of Koji -- variety of Koji spores and grains: White Rice, Barley, Brown Rice etc.
 - Variety of Beans: Soy Beans, Chickpeas, Black Soy Beans etc.
 - More salt > saltier, longer shelf life. More Koji > sweeter miso, faster fermentation

2. High in Sodium?

- Miso contains 10 - 13% sodium.
- Studies show miso does not affect blood pressure like other high-sodium foods do
- Potassium-rich food and fiber-rich food help sodium pass through the body: spinach, sweet potato, seaweed, fish, beans root vegetables etc

3. Make great Condiments!

- a. **Miso Ginger Dressing:** Miso, Mirin, ACV, Roasted Sesame: 1 Tbsp each; Grated Ginger: 0.5 Tbsp; Oil, Water or Dashi: 2 Tbsp (you can add a drop of stevia or sweetener)
- b. **Miso Marinade:** Miso: 2 Tbsp, Mirin or Sake: 1 Tbsp (optional: ginger, garlic and/or sweetener)
- c. **Miso Dip:** Miso: 1 Tbsp, Mayo: 2 Tbsp (optional: sesame, cayenne, yogurt, honey etc)

HOW TO MAKE MISO

Using Rice Koji: almighty mild miso, 10.8% sodium, 1/2 gallon

- Soy Beans (dry): 350 gram > 770 gram when cooked
- Rice Koji: 680 g if fresh (OR 567 g dried Koji tossed with 113 g of 90° F water ahead of time)
- Salt: 210 g
- Soy bean cooking water: 170 g

1. Soak soy beans for 24 hours.

2. Cook soy beans for 4 - 5 hours in a large pot or pressure cook until very soft.

(Important Note: It starts foaming a lot. Keep scooping the foam for 5 - 10 minutes. If you are using a pressure cooker, wait until the foam is mostly gone, then close the lid and start adding pressure. Otherwise, it will shoot out and creates a big mess.)

3. Mix Koji and Salt well in a bowl.

4. Strain beans (save some cooking water). **Mash soy beans** well either using a sterilized masher, a food processor or a mincer. Let the beans and the cooking water cool to be under 100° F. (Important: if the temperature is over 104 degrees, enzymes in Koji will be gone.)

5. Mix the soy bean paste with salt/malt mixture. Add the cooking water as you go until you can form balls without cracking. Make 3-4" size tight balls, squeezing air out.

6. Pack balls into sterilized jar/crock (use vodka or Everclear etc). Wipe the sides well. Sprinkle salt (not included in the recipe) on top, seal with wax paper and add weight.

7. In a few months, open the jar/crock, turn miso. Remove mold if any. Let it sleep again.

8. Miso will be ready in about 6 months, depends on temperature and your patience.