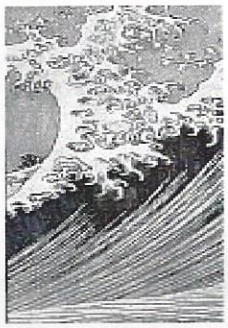
Vision Brewing
The Sake Homebrew Kit

日本酒



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Sake overview

Rice that has the correct mould growing on it will act like malt and convert further rice (starch) to sugar. This is the principle of Sake making. We refer to this rice as **MALT-RICE (correct terminology is Kome-Koji)**.
Your Sake Kit contains 10 grams of **Koji- Kin**: this material contains the mould seeds that will grow on rice to make malt-rice (Kome-Koji) and create complex and interesting flavors, similar to mould used in cheese making.
Step one: Making your malt-rice.
Step two: Combining your malt-rice with regular steam cooked rice and yeast to make Sake.

Instructions for Homebrew Sake: Basic Recipe

Step One: Making malt-rice (Kome-Koji)

Materials:

400 grams(0.9lb) of rice (short or medium grain)
1.5 grams of Koji-kin seeds (0.5 teaspoon)

Equipment:

One colander, sieve or bamboo steamer to contain rice
Cotton cloth to absorb water condensation from the saucepan lid (see additional notes)
One large saucepan to contain sieve/colander/bamboo steamer

Procedure: Making Malt Rice (kome-koji)

1.Wash 400g(0.9lb) of rice (short or medium grain) until the water clears, soak the rice for about one and half hours and then put the rice in a basket or sieve for at least 20 mins to drain off any excess water.
2.Steam cook the rice. Steam cooked rice looks slightly transparent, not white. (N.B. make sure that the rice is not in direct contact with the boiling water, see Additional Notes.)
3.Cool the cooked rice to 30°centigrade(86° F). Put the rice into an enamel, stainless steel or plastic food container and add 1.5 grams of mould-seeds (Koji-Kin), this can be mixed with a tea spoon of plain flour to help distribution. A very fine metal sieve /tea strainer is very useful for the distribution. Cover the container with a **moistened** cheese or cotton cloth to prevent drying. It is **imperative** that the rice remain moist. Refer to **Traditional Simple Method of making malt-rice.** The seed packet (Koji-Kin) contents are unaffected by repeated openings.
4. Keep the inoculated rice in a warm place at 30 °centigrade (86° F). Mix up the grains every 12 hours to distribute the mould evenly. Notice the rice becomes white after 15 hours accompanied by a strong cheese-like aroma. After 40 hours, your rice will become covered in fine white fibers and should be firm, slightly sweet and ready for use or storage in a freezer.

Step two: Combining malt-rice with regular steam cooked rice

Materials: (beginners are encouraged to use half these amounts for an easy start)

4 liters, chlorine, iron free water
1500grams(3.3lb) rice (short or medium grain)
400grams(0.9lb)malt-rice (Kome-Koji),
5grams(0.18oz)citric acid (one teaspoon)
5grams (0.18oz) Yeast : Use wine/champagne yeasts, bakers yeast. Lager yeasts produces a very pleasant flavour indeed. As starch is converted to sugar then alcohol in one instantaneous process, unusually high alcohol levels (18% alc/vol) can be created from low alcohol yeasts.

Equipment:

Sieve to drain excess water.
10 litre(2.6gal) deep brewing container with a lid. This should be made from either glass, stainless steel, glazed ceramic material or food grade plastic. Containers should be sterilised by swilling boiling water around the interior (caution needed).

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Procedure:

1.Wash 1500grams(3.3lb) rice until water clears and soak the rice for about one and a half hours.
2.Steam cook the rice (see additional notes for details)
3.After steaming, cool the rice to 25° centigrade (86° F).
4.Dissolve the citric acid with 4 liters(0.9gal) of water in the brewing container. Citric acid will prevent the contamination of bacteria and add a slight sour taste to your Sake. Hops can be used to preserve the brew. Refer to brewing tips for details.
5.Add 400 grams(0.9lb) malt-rice (Kome-Koji) and mix well.
6.Add the cooled steam cooked rice and mix well.
7.Pitch in the yeast and place the lid on the container. Around 18°C (68°F) is an ideal brewing temperature. At first the rice will absorb all the water however within 2 days the rice will break down to a white fermenting slurry.
8.Stir the mixture at least once a day. In two or three days you will notice a very pleasant Sake aroma.
9.In two weeks fermentation will end. See section on Brewing Tips for more information on **when to Halt the Brew**.
10.Filter the brew using a sterilized basket, fine sieve or cheese cloth. This may take up to 24 hours.
11.This style of Sake is best served chilled. If you require crystal clear Sake separate the residue by decanting. (see additional notes for preservation details).

**********Additional information**********

Important:

When you are making your malt-rice (Kome-Koji), you are growing a fungus on rice. Providing you grow this fungus and no other there are no health concerns. It is possible for the beginner to grow a strange exotic fungus or bacteria in error and if used to make a brew, could be toxic and unpleasant to drink. Please use your common sense, if something is unpleasant smelling or tasting, don't consume it!. Below are a few tips to help you recognize and grow malt-rice (Kome-Koji).
1. Malt-rice (Kome-Koji), is always white or slightly tan colored.
2. The smell of malt-rice (Kome-Koji) is a cheesy strong smell (not a moldy smell), perhaps not a lovely smell but not an unpleasant "off" smell.
3.Small white fibers are seen to be growing from the rice in the later stages. If you grow fibers that are not white in color, do not use this batch as you are growing another fungus as well as Koji.
4.To grow a mono culture of only Koji, distribute your Koji-Kin (seeds) very evenly and liberally using a fine metal sieve (tea strainer), making sure you thoroughly mix the rice and seeds. It is essential to steam the rice correctly for a good growth of koji.

Making malt-rice (Kome-Koji) :

An electric frying pan with a high lid can be used to help keep the rice warm when making malt-rice (Kome-Koji). Care must be taken not to overheat the rice. Note that the growth of the mould (koji) will generate temperatures above 30°C(86°F), however as long as the environment around the rice is around 30°C(86°F) your growth will be healthy. Overheated rice will kill your fungus growth. Any warm dark spot, that will keep your rice away from light and around 30° centigrade (86°F) is perfect for making malt-rice(Kome-Koji).
Massage and mix up the rice 3-4 times during the 40 hour malt-rice (Kome- Koji) process to help distribute the mould growth. Don't let the malt-rice (Kome-Koji) get over ripe so it smells overpowering. This Kome- Koji will determine to a large extent the flavor of your Sake, if it tastes firm and sweet and looks white or slightly tan, then it is time to stop the process and move to the brewing stage.
The malt-rice may be stored in a freezer, or dried on an tray in an open light dry environment, for later use.

Steaming Rice:

Making good, enzyme rich, malt-rice (Kome-Koji) depends firstly on the quality of the steamed rice.
When steaming rice, make sure the rice has been soaked for one and a half hours and has been drained for 20 minutes of excessive water. Place the rice into a colander and then into a saucepan with an adequate amount of water and make sure the rice is not in contact with the boiling water. Place a thick cloth over the rice to prevent water (condensation) dripping from the lid of the saucepan onto the rice. Steam with the lid on for one hour (checking the water level occasionally).When cooked, the rice should be **very slightly sticky, easy to separate and rubbery when tested between the front teeth**. Great care must be taken to get the correct texture. It is best to use short or medium grain rice.

Bamboo Steamers:

A Bamboo Steamer is very suitable for steaming rice. Place the soaked rice in a container or woven bamboo basket and then into the steamer. Place the steamer in a wok with water in the bottom and steam for one hour. Make sure the lid is on the steamer. There is no condensation problem as the lid is made from bamboo.

Warm spots:

Devices used for creating warm spots for malt-rice production include, electric frying pans, hot water bottles in a polystyrene box, electric blankets, electric bulbs in boxes (shield rice from the light) etc. Any object that radiates some heat can be used with a cardboard or polystyrene box. A thermometer is indeed very useful.

Traditional Simple Method of making malt-rice (Kome-Koji):

If you are having trouble finding or creating a warm spot a 2 litre plastic bottle/container of warm water (55 ° C 130° F) will act as a heater and remain warm for 12 hours when wrapped in a thick blanket together with your container. Keep the lid on the container to prevent the rice becoming dry. The rice needs to be mixed with your fingers every 12 hours to distribute the mould growth: this is a good time to refill the bottle with warm water. Plastic food take away containers can be very useful. Although the temperature fluctuates, very good results can be obtained. After about 28 hours, the inoculated rice will become **exothermic** and require no outside heat source. At this point in the 40 hour cycle, you can keep your Kome-koji container well wrapped in the blanket without the bottle.

Uncooked and cooked rice weights:

All weights indicated in these instructions are dry weights. If you want to pre-prepare large amounts of Kome–koji or steamed rice for the freezer, please remember rice when soaked and cooked will weigh 25% more. You will need to multiply you recipe amounts of dry weight by 1.25 to get the equivalent wet weight.

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Brewing Tips:

Particular attention should be paid to the amounts of water used at the brewing stage. Too much water will result in a very poor quality drink indeed. Good quality water is essential, use chlorine, iron free, commercial or boiled water.Brewing in temperatures above 18 ° centigrade (66° F) are not recommended. Stirring every day will keep your brew healthy.
Hops can be used instead of citric acid to prevent infection. To make a hops solution add 5 gms of hops pellets to a cup of boiling water and steep for 10 mins. Add small amounts of this solution to your water till it has a distinct noticeable bitter hops flavor (don't overdo it!) and a faint yellow color. The flavor of hops will disappear by the end of the brewing process. Hops works very well preventing contamination and allows you to brew at a temperature of around 21°C or 70°F.

When to Halt the Brew:

It is often a good idea to stop the process after about 8-10 days when the brew is tasting at it's best i.e. Sweet, slightly bitter and acidic. When the brew gets to the end of the process after two weeks it is often overly acidic and not so tasty. This is true for the beginners recipe only. This homebrew style of Sake is called "Doburoku" and is traditionally drunk fresh with the neighbours and has a cloudy milky colour. The most delicious flavours are found in the white residue.

Brewing containers:

Brewing containers and bottles should be **sterilized** by rinsing with boiling water or washing with Sodium Metabisulphate. Please use caution when using this product and be sure to read the manufacturers instructions carefully. Household bleach can also be used for sterilising, again follow manufactures instructions.

Pasteurising:

Sake that is stored with yeasts still alive in the bottle may be unstable and not preserve well. Sake can be stabilised by pasteurising, this process requires **GENTLY** heating the strained brew in a saucepan for 5 mins at 60 degrees centigrade(145° F), this will slightly change the character of the drink. Allow the sake to cool and aerate for one hour before bottling. When heating the Sake a smell of hydrogen sulphide can be detected due to the decaying yeasts, this however will naturally disappear within a few hours after pasteurising. This bottle will be now good for a maximum of 2 years while it remains unopened. Generally sake will improve for the first few months after bottling. Any sterile sealed bottle will work well for storing Sake. Store in a dark place as light does not agree with Sake. One can choose not to pasteurise, however be sure to keep the Sake refrigerated at all times to preserve it well.
An extremely pleasant tasting drink, approximately 14% to 18% alc/vol, can be produced by following the above instructions.This particular style of Sake is best served **chilled.** Fish and cheese are very suitable Sake companions.

New Additional Exciting Sake Recipes

Overview:

It is essential that the reader is familiar with the Basic Sake recipe and is familiar with making malt-rice (**Kome Koji**). These two sake recipes , intermediate and advanced, firstly require the same starter culture (**Moto**) that will create a rich lactic acid and yeast slurry that will start your brew with the desired micro-organisms. All your malt rice (**Kome Koji**) can be made in one session and stored in the freezer and used as required.
The Moto is created at a temperature of 5-10° centigrade (40°-50° F), at these temperatures lactic acid organisms becomes dominant and provide a very suitable medium to establish a thriving yeast culture. Lactic acid is very important as it provides the right flavour and prevent unwanted infections. It is wise to use a yeast that works well in lower temperatures such as lager yeast.

Making Moto: Materials:

187.5 grams rice (short or medium grain, steam cooked and cooled)
75 grams Kome Koji
270 ml water (chilled, soft, chlorine and iron free)
5 grams of yeast preferably, low temperature yeast i.e. lager yeast. As starch is converted to sugar then alcohol in one instantaneous process, unusually high alcohol levels (19% alc/vol) can be created from low alcohol yeasts.

Procedure For Tradition Moto Making:

Combine all ingredients and keep in the fridge for 10 to 14 days at a temperature of 5-10° centigrade (40°-50° F), stirring the mixture a couple of times a day. The texture will change gradually from swollen rice grains to a porridge texture as the days go by and will eventually become a creamy soup texture. The yeast becomes active after 3 days and the surface will appear to bubble.
The taste also changes from sweet to slightly acidic and finally acidic and bitter. By this stage 10 to 14 days should have elapsed and now the Moto is ready do its work.

An Easier Moto Creation Method:

A moto can be made by mixing 185 gms of steamed rice with 185 gms of kome koji and 185 mls of water at 60°C (140°F). To this mix add one teaspoon of **natural yoghurt**. Allow to cool to 40°c(106°F) and maintain for 24hrs. At this stage the moto should be bubbling slowly, slightly sweet and acidic with the texture of porridge. There should be a strong cheesy sour smell. Now, cool to 25°C and add 5 gms of yeast. This is normal room temperature and makes the next stage very easy. After 6 hours the smell will disappear. Maintain at 25°C (76°F) and day 3 will produce a moto that is bitter and acidic with heavy yeast bubbling activity. By the end of day 4 the moto will be ready and can be used as described in the intermediate and advanced recipe.

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Intermediate Recipe:

This recipe will produce a sake with a naturally grown lactic acid base that is generally associated with the lovingly made, very expensive boutique sakes found only in Japan.
Step One: Create your Moto starter culture as described above.
Step Two: Mix your starter culture with more rice and malt-rice (Kome-Koji) to create a brew with the right micro-organisms.

Instructions for Intermediate recipe (producing 3 litres) :
Materials used in this recipe:
2250 grams rice (short or medium grain, steam cooked and cooled)
710 grams Kome Koji
3870 ml water (chilled, soft, chlorine and iron free)
All of the prepared Moto (as described above)

Procedure:
Combine all of the above materials in a suitable brewing container, stirring everyday for 20 days keeping the fermenting container at about 10°-15° centigrade (50°-60° F).
After 10 hours all the water will be absorbed and you will have a swollen rice grain texture.
After 2 days the mix will become like soup.
Day 3 The yeast will be active with visible bubbling and the texture becomes increasingly fluid..
Day 8 The texture is now fluid with a new complex bitter flavour in the taste.
Day 10 Alc/vol is now approx 10%
Day 12 Alc/vol is now approx 13%
Day 17 Alc/vol is now approx 16%
Day 20 Strain below 16°C through cheese cloth or a nylon straining bag for 24 hours, pasteurise and bottle.
Pasteurising and sterilising: Please refer to the basic recipe.

Advanced Recipe:

This recipe will create a really top quality Nigorizake style Sake with a level of 19% alc/vol. This is a sake with no effort spared, it even surpasses the intermediate recipe.
Step One: Create your Moto starter culture.
Step Two: Mix your starter culture (Moto) with **three additions of rice**, water and malt-rice (Kome Koji) to create a brew with the right micro-organisms.
Instructions for advanced recipe (producing 3 litres):
Materials: (total of three additions)
2250 grams rice (short or medium grain)
3870 ml water (chilled soft, iron and chlorine free)
710 grams Kome Koji
All of the prepared Moto (as described above)

Procedure:
Day 1: Steam cook the 375 grams of rice. Cool it and combine with 450 ml of water, all of the Moto and 150 grams of Kome Koji in a suitable sanitized brewing container (12 litre, stainless steel/ceramic/glass) and stir thoroughly, keeping the brewing container at about 10°-15° centigrade (50°-60° F). After 15 hours stir gently and stir again every few hours. The rice will absorb the water and you will have a swollen rice grain texture with no visible fluid.
Day 2: No additional materials required. Stir gently a couple times a day.
Day 3: Steam cook the 750 grams of rice, cool it, add together with 225 grams Kome Koji and 1170 ml of water to the brewing container and mix well. Wait for ten hours before stirring (this delay helps the yeast and alcohol production) and the preferably stir every few hours. Keep the brewing container at about 10°-15° centigrade (50°-60° F).
Day 4: Steam cook the 1125 grams of rice, cool it, add together with 335 grams Kome Koji and 2250 ml of water to the brewing container and mix well. Wait for ten hours before stirring (this delay helps the yeast and alcohol production) and then preferably stir every 8 hours. Keep the brewing container at about 10°-15° centigrade (50°-60° F)
Day 5-7: There should be a lot of yeast activity during this period with the surface of the brew being very frothy indeed.
Day 8: The yeast activity will be subsiding with a new complex bitterness and acidity in the taste. The texture should change from porridge to soup.
Day 10: Alc/vol is now approx 15% with some yeast activity.
Day 14: Alc/vol is now approx 17.5% with further reduction in yeast activity.
Day 16: Alc/vol is now approx 18.5% with further reduction in yeast activity.
Day 20: Alc/vol is now 19% with further reduction in yeast activity. The brew is ready to be strained through cheese cloth or nylon straining bag, pasteurised and bottled. Keep the brew below 16°C while straining.
Pasteurising and sterilising: Please refer to the basic recipe.

For further recipes visit www.visionbrewing.com/maltrice

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