

Korean Rice Wine



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1. What is Makgeolli (막걸리)?

According to Wikipedia <http://en.wikipedia.org/wiki/Makgeolli>:

Makgeolli, also known as *makkoli* or *makuly (takju)* (and referred to in English as "Korean [rice wine](#)"), is an [alcoholic beverage](#) native to [Korea](#). It is made from a mixture of wheat and rice, which gives it a milky, off-white color, and sweetness.^[1] It is made by fermenting a mixture of boiled [rice](#), wheat and water, and is about 6–8% [alcohol by volume](#). Most makgeolli contains rice; however, a few brands contain wheat instead of rice.

It was originally quite popular among farmers, earning it the name *nongju* (농주 / 農酒), which means farmer liquor. However, it has recently started to become more popular in cities, especially with the younger generations. *Dongdongju* (동동주) is a drink very similar to makgeolli, and both are commonly imbibed alongside Korean pancakes called [pajeon](#) (파전) or [bindaetteok](#) (빈대떡).

The most useful, working definition of makgeolli is Korean Rice Wine, but in reality makgeolli is not wine, nor is it beer. It is... makgeolli.

It is not new: Koreans have been drinking makgeolli for centuries-- possibly more than 2000 years. According to *The Poetic Records of Emperors and Kings (Jewangun-gi)*, written during the [Goryeo Dynasty](#), the first mention of the drink was in the founding story of the [Goguryeo](#) during the reign of [King Dongmyeong](#). Also known as Jumong, King Dongmyeong lived from 58 BC – 19 BC.

2. What is Dongdongju (동동주)?

Dongdongju [or dong dong ju] is a yellowish drink that is about 2-2 ½ times as strong as makgeolli, and gets its name because rice is usually floating in it ["dong" = floating, in Korean]. Makgeolli is strained or filtered, and therefore no rice is transferred from the fermenter into the final product. By contrast, Dongdongju is siphoned or poured out of the fermenter, and in so doing, a number of grains of rice may come along for the ride.

Here is a blog that includes comments on Dongdongju, written by an American living in Korea:

"Dong Dong Ju. I have recently become hooked on this shit. We usually hit it at least once a week. Dong Dong Ju is a rustic rice wine. It's milky white and a little bit sweet, but not too sweet. They usually serve it up in big bowls, which you then ladle into smaller bowls for drinking. It's not that strong, really, but if you drink a lot of it, which we invariably do, it gives you a warm and happy buzz with just a little bit of CRAZY thrown in." <http://koreanwine.tistory.com/2>

If you want to try authentic Dongdongju while enjoying good Korean food, I can recommend *Oegadgib*, a Korean restaurant in Annandale, VA. *Oegadgib* is located at 7331 Little River Turnpike, Annandale, VA 22003, 703-941-3400.

Dongdongju, to the best of my knowledge, is essentially makgeolli that is not diluted before bottling, and which has been allowed to settle for a while. There is not much dongdongju information in English on the Internet, so I can't really address it in depth. I will have to continue my research.

3. What are the ingredients in Makgeolli?

- RICE: Sweet rice or Japanese sushi rice will work. You may have to go to an Oriental grocery store to find this type of rice.
- YEAST: This is optional, but using bread yeast or a wine yeast will reduce the fermentation time by about 50 per cent. *Red Star* bread yeast will work, but I use Lalvin Wine Yeast EC-1118, as it has a high alcohol tolerance and neutral flavor.
- WATER: Pre-boiled.
- POWDERED ENZYME AMYLASE [NURUK]: Nuruk [also Nurook] is a fermentation starter, consisting of wheat flour that's been wetted then pressed into a cake, then allowed to incubate at around 30-40C. Numerous types of microorganisms, molds, bacteria and yeasts are present in nuruk. A comparison of koji [a yeast used in Japanese Sake], and Nuruk:

Table 3. Main enzyme activities in *koji* and *nuruk*
<http://www.fao.org/docrep/x2184e/x2184e09.htm>

Enzyme	<i>Koji</i>	<i>Nuruk</i>
a-Glucosidase (Wohlgemuth value D ⁴⁰ _{30/g})	1225	256
Glucoamylase (mg glucose produced/hr/g)	201	260
Acid Protease (mg tyrosine produced/hr/g)	3674	181

4. How is Makgeolli Made?

Step 1: Yeast Starter

- Either the night before or first thing in the morning, put 1 – 2 tablespoons of sugar in a small saucepan along with a few cups of water. Bring to a boil, and turn the heat off when the sugar is dissolved completely.
- When cool, add the dry yeast and nuruk. Use about half of a 16 oz. package of Nuruk for a batch containing 2 – 2.5 kgs [4.4 – 5.5 lbs.] of rice.

- Some people grind the nuruk with a coffee grinder before hydrating it, while others put it in a plastic bag and crush it with a rolling pin or other object. Since hydration seems to soften the relatively hard pieces of nuruk, I skip this step.

Step 2: Boil water.

- Either the night before, or first thing in the morning, boil the water that, when cooled, will be added to the fermentation vessel along with the steamed rice. I am still learning recipe formulation, but I recommend boiling 2 – 3 liters of water for each kilogram of rice. Be sure to have enough.

Step 3: Rinse, Soak, and Drain Rice.

- Put your rice in a large bowl, and then with water rinse by hand. You have to rinse the rice repeatedly, until the cloudy water becomes clear. To see how this is done, I recommend viewing the Zedomax video on YouTube.
<http://www.youtube.com/watch?v=E2qXRGih1E8>
- Zedomax washes his rice 30 times, but if you rinse the rice a *long* time before pouring out the water, this number can be reduced. The water doesn't have to be as clear as tap water, but the cloudiness must be nearly absent.
- Once the water is clear, add water to cover the rice by about 1" and then let it soak for at least 3 hours. This is a step that can be done the night before, as a 10-12 hour soak does no harm.
- After you have soaked the rice, allow it to drain for at least one hour. My method is to put the rice in a paint strainer bag, and then place in a steamer. Other methods may be used.

Step 4: Steam the rice.

- Most sources advise against using a rice cooker, so plan on using a steamer. The bamboo steamers that WalMart and other places sell are fine. On the WalMart web site, search for "bamboo steamer" to see what they look like.
- Put the rice in a paint strainer bag, transfer the bag into the steamer, and then put the steamer on top of kettle that is about half full of water. Steam the rice for 30-60 minutes, or until it is medium hard and slightly yellow in appearance.
- Once every 15-20 minutes, turn the rice so that it is all given equal exposure to the rising steam.

Step 5: Cool the rice.

- Lay the rice out in a long, thin, row to cool. A long, clean serving tray works well for this.

Step 6: Add Rice, water, and Yeast Starter to the Fermentation Vessel.

- Once the rice has cooled, add it to the fermentation vessel.
- Add pre-boiled water to the fermentation vessel. If this water is cold enough, you can shorten the above cooling step a little.
- Using your sanitized hand, gently mix up the rice and water in your fermentation vessel. Break up clumps of rice, but do not get too carried away and squeeze the rice grains to the point of damaging them.
- When you are certain that the rice/water mix in your fermentation vessel is cool enough, add your yeast starter and mix by hand.
- Add a clean cloth over the top the fermenter.
- Keep the fermenter away from direct sunlight and don't let it get hot or too cold.
- Using either a sanitized hand or long spoon, stir the contents of the fermentation vessel once or twice a day for the first 4-5 days.
- After 7-8 days at room temperature, the makgeolli should be ready for bottling.

Step 7: Bottling

- Add sweetener if desired: Splenda, Equal, or a natural Korean sweetener: <http://korean-products.com/2012/01/11/natural-sweeteners-maggeolli-kooksun/> Experiment to see how much sweetener you like.
- To obtain makgeolli of approximately 6-7% alc, dilute by adding water in a ratio of *approximately* 3 parts raw makgeolli to 2 parts water.
- Pour into a plastic bottle with a twist top. Leave the cap slightly loose for the first few days to avoid over-carbonation. It will continue to ferment for up to three weeks.
- Alternatively, you could pour into all into a large vessel, dilute as required, and then ladle it out when serving. This might result in reduced levels of carbonation, but it should still be drinkable.
- Drink within 30 days.

Step 8 – Serving.

- If at all possible, ladle out of larger bowl into smaller serving bowls:



- If the bottle is rock-hard, be alert for the dreaded “makgeolli shower” when you open it. Make sure the bottle is very cold, use a towel to reduce spray, and have a large bowl immediately available to pour into. Over-carbonated makgeolli can be so frothy that it appears to be boiling. But no worries, it will settle down and be drinkable within a few minutes.
- Feel free to mix old, new, homemade, and commercial makgeolli together to salvage a batch. After a couple of weeks, the taste of makgeolli will change and you might not like it as much as before. No problem, mix with a fresher bottle and it will be fine.
- Always strain homebrew makgeolli before serving, to filter out as much nuruk and trub as possible. There is no need to filter commercial makgeolli.
- As an alternative to a large bowl, Koreans often serve makgeolli out of a teakettle, but to my knowledge it is always poured into individual serving bowls.

5. Challenges.

There is a lot of confusing, conflicting, and erroneous information on the Internet. Some of it may be due to poor translations, while another factor seems to be that the majority of modern-day modern Koreans, just like “Joe Six Pack” in the U.S. on the subject of beer, are ignorant about the various types of makgeolli and Dongdongju. I’ve seen recipes for “makgeolli” and “soju” [Korean Vodka] that were actually recipes for makgeolli and dongdongju. Don’t take the first makgeolli recipe you find at face value; read as much as you can, and after a while you will find recurring themes that you can believe.

I have the advantage of a bi-lingual Korean wife as well as relatives living in Korea who can send us stuff. But for others, the information contained here combined with a little self-study, will enable the production of drinkable makgeolli.

It must be stirred frequently. Makgeolli separates quickly, with yeast, rice particles, and whatnot settling to the bottom of the vessel. This is why it is served in a bowl, so it can be agitated enough to keep everything suspension.

It ferments a long time. Makgeolli will continue to ferment for up to three weeks, and if you tighten the bottle caps right away after bottling, you may get a makgeolli shower when you open the bottles. The recommendation is to use plastic bottles with twist-tops, and don't tighten them fully until 2-3 days have passed. Alternatively, you can leave *all* of the caps slightly loose, and then tighten each bottle 24-48 hours before you intend to drink it. Even in an un-insulated garage in the winter, makgeolli will continue to ferment. In my experience, adding priming sugar or honey at bottling is not needed, and would in fact be a mistake.

How strong is it? Since the initial mixture of water and rice is almost as thick as porridge, I don't know how to get a true reading of alv%. If you replicate a known recipe, then you should be able to match the alv% that is given. Both makgeolli and dongdongju are a little "sneaky." Don't assume that they don't contain much alcohol—they do.

Back Sweetening. With most makgeolli being slightly sour after fermentation, "back-sweetening" is usually used to impart sweetness. This is a fairly common technique in wine-making, and it involves adding a sweetener either at bottling, or just before drinking. Unless you want to re-start fermentation for some reason, your best choice is to add a non-fermentable sweetener to bottled makgeolli.

Most commercial makgeolli is sweetened with Aspartame, which was the primary ingredient for Nutra-Sweet. The FDA approved aspartame in 1974, but this approval was highly controversial, with aspartame being viewed as a risk to human health. There are a few places in Korea that teach traditional methods of making makgeolli, and the instructors advise against using aspartame.

We found a Korean sweetener that blends in very well with the makgeolli, imparting a little sweetness but yet not adding its own distinctive flavor, as *Equal* or *Splenda* will do. Regardless of sweetener, after a couple of days it will blend with the makgeolli and not impart such a "separate" flavor.

It doesn't keep long. Most sources say that makgeolli will keep for about 30 days. However, batches are not large, usually from two to six 1-liter bottles, so this is not a problem. Dongdongju, being stronger, will keep for a few months if refrigerated and is supposed to get better as it ages.

6. Sources of Supplies.

- NURUK http://www.hmart.com/shopnow/shopnow_news.asp?p=846034006119

Powdered Enzyme Amylase [“Nuruk” in Korean] comes in a 1 lb. bag. For Abingdon Zip Code [21009], shipping costs are \$8.95 for **one** bag of Nuruk, and \$8.95 for **five** bags of Nuruk. [Five appears to be the maximum quantity that one can order.] Depending on batch size, one bag of Nuruk should be enough for 2-3 batches. You can find Nuruk at either of these two local stores:

- H-Mart, 800 N Rolling Rd, Catonsville, MD 21228, 443-612-9020, store hours: 8 am – 10 pm, 7 days. [\$4.99 for a bag of nuruk]
 - Lotte-Assi Plaza, 8801 Baltimore Pike, Ellicott City, MD 21043, 410-750-9656, 9 am – 9:30 pm, 7 days. [\$4.49 for a bag of nuruk]
- RICE: You can buy sweet rice at either of the above two local stores. Expect to pay no more than about \$1.00 per pound.
 - YEAST: You can order dry wine yeast from almost any mail-order homebrew supply store, for \$1.00 [or less] per packet.
 - SUMMARY: My total cost is approximately \$1.00 – 1.50 per bottle of makgeolli.

7. Additional Resources

NAME: Makgeolli's Moment of Glory [Arirang Today]

URL: <http://www.youtube.com/watch?v=Gyuni51ulAw>

DESCRIPTION: A good overview of the many different types of makgeolli, the claimed health benefits of makgeolli, how to make makgeolli, and how makgeolli is staging a resurgence in Korea. It is in English, or Korean with English subtitles.

NAME: How to Make Korean Rice Wine Makkoli at Home! [막걸리]

URL: <http://www.youtube.com/watch?v=E2qXRGih1E8>

DESCRIPTION: This is a 43:59 video by “Zedomax”, a Korean who is fluent in English. He’s kind of a Charlie Papazian for makgeolli, in that many Westerners got their start by watching his video.

NAME: Making Makgeolli, Korean Rice Wine (Recipe 1)

URL: http://www.youtube.com/watch?v=KIFTrL_orQY

DESCRIPTION: An informative video by a guy who calls himself Mister Makgeolli. He has devoted many years to figuring out how to make makgeolli, and you can learn a lot from his videos.

NAME: Makkoli Forum [Northern Brewer]

URL: <http://forum.northernbrewer.com/viewtopic.php?f=21&t=102035&start=15#p909014>

DESCRIPTION: Homebrew forum on making Korean rice wine.

NAME: A Home-brewer's Guide to Makgeolli (막걸리)

URL: <http://www.harmsboone.org/homebrewers-guide-makgeolli>

DESCRIPTION: This is from a brewing class conducted in Korea by "fifth generation professionals." It contains some good information. [Note: I do not agree with the advice to add 1 tablespoon of sugar to each bottle; in my view this will result in over-carbonation.]

NAME: Nungil Village: An Unsung Hero to Makgeolli Drinkers Everywhere

URL: <http://happybeareats.blogspot.com/2011/11/nungil-village-unsung-hero-to-makeoli.html>

DESCRIPTION: The "Happy Bears" is a group of English-speaking people living in Korea, whose focus is on traditional methods of cooking and growing organic food. The Happy Bears visited Nungil Village, a school that teaches how to make makgeolli and grow food. It contains some useful information on how to make makgeolli. Note: the instructor does *not* approve of using the sweetener aspartame.

NAME: Makgeolli Mamas & Papas

URL: <http://mmpkorea.wordpress.com/mama-papa-reviews/home/>

DESCRIPTION: This useful web site is maintained by English-speaking people living in Korea, in order to "encourage a community and provide opportunities for the exploration and education of Korean makgeolli culture." There is a section entitled Makgeolli Homebrew Resources that contains links to how-to guides and recipes, forums, and blogs.

Many thanks to my "additional resource" and her faithful assistant:

