



Kimchi for the Homebrewer

Roxanne Westendorf – Bloatarian Brewing League, AHA Governing Committee

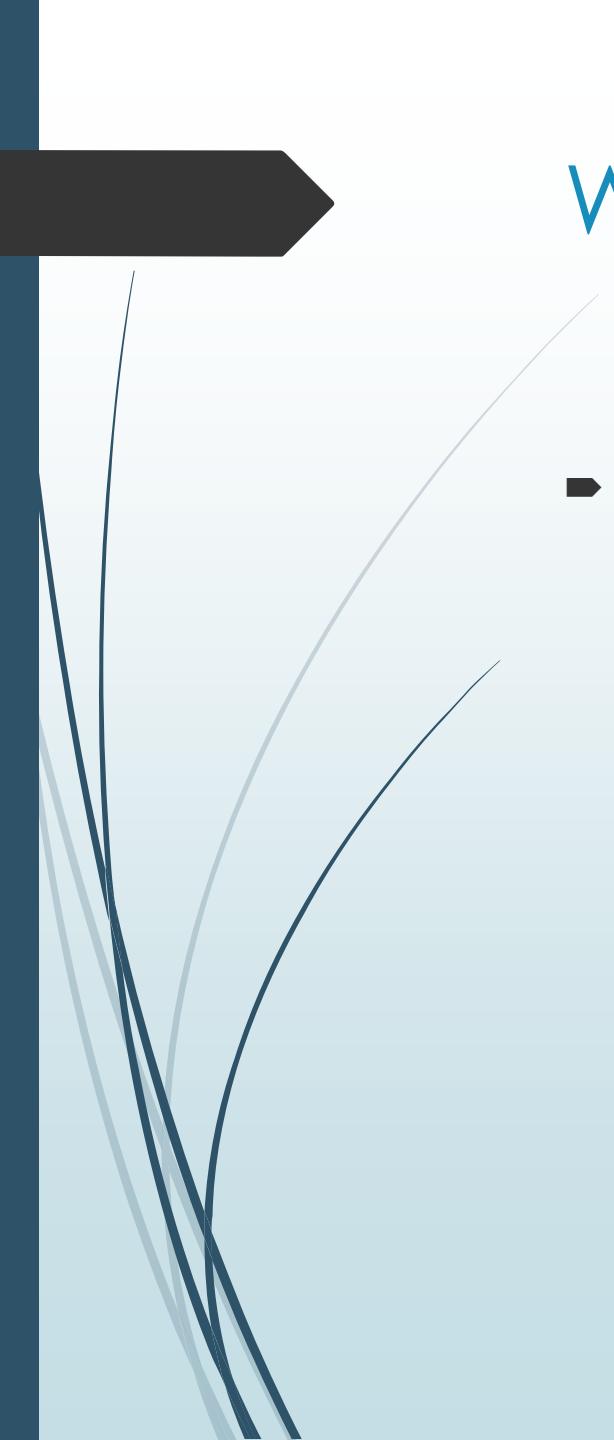
Chef Miguel Richards – Moerlein Lager House Sous Chef



Objectives – what we will and won't be covering!

- ▶ A quick, simple start to making kimchi at home. Ingredients and instructions, tips & equipment.
- ▶ Tasting homemade kimchi (fermented & quick marinade types)
- ▶ Beer tasting with kimchi
- ▶ Recipes & ideas for using kimchi in your kitchen beyond being a condiment

- ▶ We will NOT be covering.
 - ▶ A lot of history – it's just too long!
 - ▶ The technical aspects of kimchi. The presentation at 9 am covered that!



Who Are We and Why do We Kimchi?

- ▶ Roxanne

- ▶ Homebrewer – 24 years!
 - ▶ With some wine, cider & mead mixed in
- ▶ Cheesemaker – 15 years!
- ▶ Foodie
- ▶ Kimchi & fermented foods – 3 years
- ▶ Because I can.

- ▶ Chef Miguel

- ▶ Professional Chef for 17 years
 - ▶ Cooking professionally for 23 years
- ▶ Musician – guitar & vocals
- ▶ Love making spicy food
 - ▶ At home & work!
- ▶ Develop beer dinners at the Moerlein Lager House



What is Kimchi?

- ▶ It is a lactobacillus fermentation of vegetables – a way of preserving food with good bacteria.
- ▶ There is no single “kimchi” – hundreds of variations!
 - ▶ Does NOT have to include cabbage! MANY vegetables are possible
 - ▶ Usually uses (but can vary...):
 - ▶ Light salt/brine
 - ▶ Garlic
 - ▶ Korean Red Chile
 - ▶ Ginger
 - ▶ Scallions or leeks
 - ▶ Fish Sauce (optional)
 - ▶ Sugar (optional)



Super Quick Kimchi History

- ▶ Korean in origin – at least 4000 years of history!
- ▶ Burying kimchi jars is not magic – it's a way of keeping it through the winter when fresh vegetable sources weren't available to make it weekly!
 - ▶ Traditionally, there were “summer” and “winter” kimchis - based on availability of fresh produce and type of produce that would store longer after fermentation.
- ▶ There is no single “kimchi” – hundreds of variations!
- ▶ It is consumed on its own – AND can be used in cooking other dishes.
- ▶ Garlic, ginger, chilis, and salt all have antimicrobial and preservative powers. They keep the bad guys in check – but allow lactobacillus to work.

*See Appendix for Reference about the origins of Kimchi.



First Tasting

- ▶ My base fermented Kimchi
- ▶ Allagash White
 - ▶ Our interpretation of a Belgian-style wheat beer is brewed with oats, malted wheat, and unmalted raw wheat for a hazy, “white” appearance. Spiced with our own special blend of coriander and Curaçao orange peel, Allagash White is both complex and refreshing.
 - ▶ Though it’s brewed in Maine, the recipe sticks to its Belgian roots. We’ve worked hard to make sure that the Allagash White in your hand tastes the same as it did back in 1995, when Rob Tod brewed the first batch.
 - ▶ 5% ABV, 13 IBU
- ▶ Pairing Goal – Contrast of flavors

Kimchi – My Base Recipe

Paste

- ▶ ~1/3 cup grated ginger
- ▶ 6-8 garlic cloves, pressed
- ▶ 1 bunch green onions, chopped
- ▶ ~1/4 - 1/2 cup Korean red pepper flakes (or to taste)
- ▶ Optional (not in the sample)
 - ▶ ½ - 2 TBS Fish Sauce
 - ▶ ½ - 2 TBS Sugar

Veggies

- ▶ 1 medium head napa cabbage (~3 lb)
- ▶ 6-8 baby bok choi
- ▶ ~3 carrots
- ▶ ~6-8 inch segment of daikon radish
- ▶ Handful of snow peas.

Brine

- ▶ About 2 quarts (1 TBS salt/Cup filtered water)
 - ▶ Kosher, Pickling or Sea Salt

Equipment



- ▶ Fermenting jar or crock
 - ▶ Glass, ceramic or plastic.
 - ▶ Plastic will ALWAYS smell like kimchi.... (as will unglazed ceramic weights)
 - ▶ Need weights to hold the veggies down
 - ▶ Don't have weights? A sanitized zipper food bag with water can work!
 - ▶ Lid & airlock
 - ▶ Don't use these for beer again!

Vegetables



- ▶ Napa Cabbage
- ▶ Baby BokChoi
- ▶ Daikon Radish
- ▶ Carrots
- ▶ Snow Peas

Spices/Paste & Brine



- ▶ Korean Red Pepper
 - (coarse – for Kimchi)
- ▶ Ginger Root
- ▶ Green Onions
- ▶ Garlic
- ▶ Kosher Salt
- ▶ Use Kosher, sea, or pickling salt – NOT iodized.



Prep



- ▶ Cabbage & bok choi - Core & cut into chunks.
 - ▶ Radish - Peel & Julienne
 - ▶ Carrots - Peel & Julienne
 - ▶ Snow Peas
-
- ▶ Rinse/Peel to get the surface dirt off.

Brine



- ▶ Make a brine:
 - ▶ 1 TBS salt/1 cup water
 - ▶ Use filtered water – no chlorine!
- ▶ Brine ~8-12 hours or overnight
 - ▶ Make sure veggies are covered in the brine.
 - ▶ Leave a little room – the brine level will increase in the first 30-45 minutes as the salt pulls out water/softens the veggies.

Make the Paste



- ▶ Grate Ginger
- ▶ Press Garlic (or crush & finely mince)
- ▶ Cut up green onions
- ▶ Add pepper flakes
- ▶ Add sugar & fish oil if using
- ▶ Mix together to form a paste.



Putting It All Together



- ▶ Drain brine from veggies.
 - ▶ SAVE THE BRINE
- ▶ Mix the paste with the veggies.
- ▶ Some recipes recommend rinsing veggies, and then adding 1-2 TBS salt to the paste.

Putting It All Together



- ▶ Add the veggie/paste mixture to your fermenting jar or container
- ▶ Press the veggies down to pack.
- ▶ If needed, add enough of the reserved brine to cover the veggies completely.
- ▶ Add the weights to keep the veggies submerged.
- ▶ Put on the lid & airlock.

Fermentation & Storage

- ▶ 1-1.5 week fermentation at room temperature.
 - ▶ OK to taste to check. Wait at least a few days before tasting!
- ▶ After fermentation – transfer to other jars and store in the refrigerator.
 - ▶ Mason jars work well. Do NOT process!
 - ▶ Kimchi will last several months in the refrigerator. It will continue to ferment very slowly.
 - ▶ Why transfer? You may want to make a batch of something else.



Fermentation Tips



Start



Day 2



Day 3



Day 5



Day 7



Finished

Leave AT LEAST 2-3 inches of airspace when starting fermentation! The CO₂ from fermentation will get trapped in the veggies and push the liquid level up!

Room temperature & use of sugar will affect fermentation time.





Do the
Twist....



Palate Cleanser

- ▶ Maine Beer Company Peeper Pale Ale
 - ▶ After a few years of home brewing in our garage, my brother and I decided we should open a brewery so that we could share our beer. In 2009 we started with a one barrel system and worked on a single recipe, over and over, until Peeper was born. And now we have enough to share. Cheers!
 - ▶ LEMON, GRAPEFRUIT AND FRESH CUT GRASS. DELICATE NOTES OF RASPBERRY, STRAWBERRY, PINE, FLORAL AND FAINT BREAD
 - ▶ 5.5% ABV, 50 IBU
- ▶ Note: While IPA's generally go well with spicy food – with fermented kimchi, the high hop bitterness of an IPA was too harsh. The more balanced hop/malt balance of a Pale Ale works better.

Quick Kimchi Pickle

Vietnamese Nuoc Cham marinade

- ▶ $\frac{1}{2}$ cup warm water
- ▶ $\frac{1}{2}$ cup white sugar
- ▶ $\frac{1}{2}$ cup freshly squeezed lime juice
- ▶ $\frac{1}{3}$ cup Vietnamese fish sauce
- ▶ 2 medium cloves garlic, minced

- ▶ Dissolve sugar in water
- ▶ Add lime juice, fish sauce, garlic, and chili and stir to combine.

Vegetable Medley

- ▶ 2 English cucumber, thinly sliced
- ▶ $\frac{1}{2}$ red onion, peeled and thinly sliced
- ▶ 2 Serrano or Thai chilies thinly sliced
- ▶ $\frac{1}{4}$ cup cilantro, minced

- ▶ Add Marinade
- ▶ Refrigerate for 2 hours or overnight.
3 day shelf life.

Vegetables

- English Cucumber
- Red Onion
- Cilantro
- Serrano or Thai chilis

Slice cucumbers & onion thinly with a mandoline if possible.



Marinade



- ▶ Vietnamese Fish Oil
- ▶ Sugar
- ▶ Water
- ▶ Lime Juice
- ▶ Garlic

- ▶ Mix together with sliced vegetables.
- ▶ Marinate 2 hours or overnight
- ▶ Use within 3 days

Putting it together





Taste

- ▶ Chef Miguel's Quick Kimchi Pickle
- ▶ Christian Moerlein Barbarossa
 - ▶ Moerlein Barbarossa is a slow-aged with a deep reddish-brown color and a malt aroma derived from Munich dark malt. The balanced finish invites a toast to the return of a legend.
 - ▶ 5% ABV, 28 IBU
- ▶ Pairing Target – Complement. Dark malty base to complement the fish sauce.



Cooking with Kimchi – It's more than just a condiment!

- ▶ Soups
- ▶ Stir Fries
- ▶ Rice & Risotto
- ▶ Egg rolls
- ▶ Dumplings
- ▶ Stuffing
- ▶ Toppings
- ▶ Grilled Cheese
- ▶ Salads
- ▶ Stews
- ▶ Pancakes/potato cakes
- ▶ Martinis
- ▶ More!!???



A Few Recipes...

Kimchi Soup

- ▶ ½ lb Pork Tenderloin – very thinly sliced or sliced into matchsticks
- ▶ 1 pkg Tofu, cut into cubes
- ▶ 2 cups kimchi (with liquid)
- ▶ 6 cups water
- ▶ 3 green onions
- ▶ 1 T sesame oil
- ▶ Saute meat in oil, add kimchi & saute to warm
- ▶ Add water, simmer 10 minutes
- ▶ Add tofu & onions. Simmer 10 minutes
- ▶ Serve with Rice

Kimchi Rice (Kimchi Bap)

- ▶ 2 ½ cups short grain rice
- ▶ 2 cups shredded kimchi
- ▶ 2 T sugar
- ▶ 2T sesame oil
- ▶ 4T leek – finely chopped
- ▶ 2 ½ cups water
- ▶ Cooking oil

Soy sauce

- ▶ 2T Korean or Japanese soy sauce
- ▶ 1t sesame oil
- ▶ 1T sliced spring onion

- ▶ Fry kimchi, sugar, sesame oil and leek over medium heat. Let cool slightly.
- ▶ Place rice in rice cooker, add kimchi mixture on top.
- ▶ Carefully add water.
- ▶ Let sit for a few minutes after rice cooker is finished.
- ▶ If cooking on the stove:
 - ▶ Cover with lid & bring to boil.
 - ▶ Lower heat to half and boil 6 minutes. Lower heat to lowest setting an simmer 6-10 minutes.
 - ▶ Turn off heat and rest 5 minutes with lid on.
 - ▶ Stir to mix rice. Serve with soy sauce on the side.

From: Kimchi – Essential Recipes of the Korean Kitchen

Kimchi Egg Rolls

Bulgogi marinade

- ▶ 1 pound ribeye, sliced into 1/4' strips
- ▶ 1 pear, peeled
- ▶ 1/2 onion, peeled
- ▶ 4 cloves of garlic
- ▶ 1 tablespoon sesame oil
- ▶ 4 tablespoons soy sauce
- ▶ 2 tablespoons mirin
- ▶ 1 tablespoon sugar
- ▶ 1/2 cup scallions, chopped
- ▶ 1 tablespoon sesame seeds
- ▶ Blend the pear, onion and garlic in a food processor as smooth as possible. Pour into a large mixing bowl and add sesame oil, soy sauce, mirin, sugar, chopped scallions and sesame seeds. Toss in thinly sliced ribeye. Marinate for at least 1 hour.
- ▶ Heat a heavy pan over high heat and sauté the marinated meat until cooked, 6-8 minutes. Remove from heat and set aside to cool to room temp.

Dipping sauce

- ▶ 3 tablespoons soy sauce
- ▶ 1 tablespoon gochujang
- ▶ 1 tablespoon sugar
- ▶ 1 tablespoon sesame oil
- ▶ 1 scallion, chopped
- ▶ 1 tablespoon sesame seeds
- ▶ In a small bowl, combine all dipping sauce ingredients. Mix well until sugar is dissolved.

Egg rolls

- ▶ Egg roll wrappers
- ▶ Chopped kimchi
- ▶ Shredded cheddar cheese
- ▶ Water to seal egg rolls
- ▶ Vegetable oil for frying
- ▶ Place a heaping spoonful of bulgogi in the lower middle of each egg roll wrapper, add chopped kimchi and sprinkle on shredded cheese. Fold up the bottom and sides of the egg roll and roll up. Seal with water.
- ▶ Fry egg rolls until golden brown; drain excess oil on paper towels. Serve with dipping sauce.

Kimchi Dumplings (Kimchi Mandu)

Dough

- ▶ 350 g plain flour
- ▶ 200-240 ml water

Filling

- ▶ 7 oz coarse ground pork
- ▶ 1¼ oz lard
- ▶ ¼ c chopped leek
- ▶ 1½ T grated ginger
- ▶ 1 C finely chopped onion
- ▶ ¼ C parboiled & finely chopped white cabbage
- ▶ ½ C kimchi – liquid squeezed out
- ▶ 1 T sesame oil
- ▶ Salt & black pepper

Dipping Sauce

- ▶ 3T Korean or Japanese soy sauce
- ▶ ½ T sesame oil
- ▶ 1 dash distilled vinegar

- ▶ Mix together all filling ingredients
- ▶ Mix the ingredients for the dipping sauce.
- ▶ Combine flour & water to make a firm dough
 - ▶ Roll out to ¾ inch thick. Cut into ¾ inch wide strips
 - ▶ Cut strips into ¾ inch cubes
 - ▶ Form cubes into balls & roll out each cube to a disc about 3 inches in diameter
- ▶ Place 1 T filling in the middle of each disc. Stick edges together into a half moon shape – crimping the edges.
 - ▶ Don't use too much flour when preparing discs, or the edges won't stick together.
- ▶ Place dumplings in boiling water & simmer 6-7 minutes.
- ▶ Serve with dipping sauce.
- ▶ Uncooked dumplings freeze well

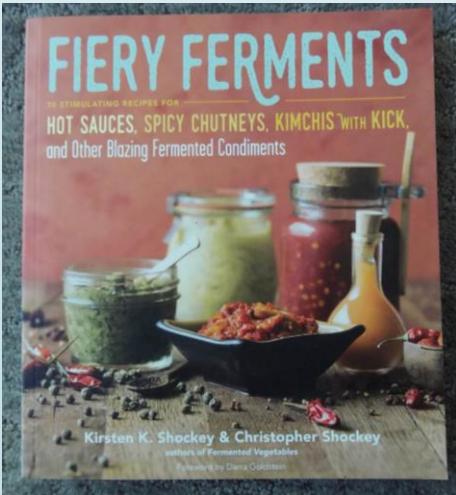
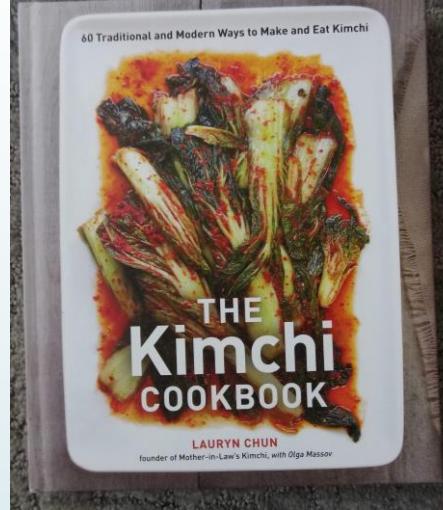
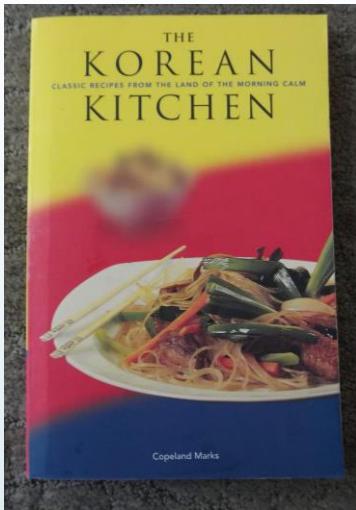
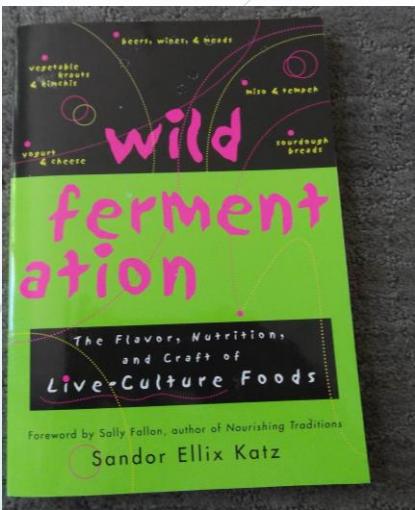
From: Kimchi – Essential Recipes of the Korean Kitchen



Variations & Imagination – Beyond Cabbage...

- ▶ For Fermentation & longer storage
 - ▶ Beans
 - ▶ Butternut squash
 - ▶ Turnips
 - ▶ Beets – can't wait to see the color!
 - ▶ Jicama
 - ▶ Daikon
 - ▶ Carrots
 - ▶ Other greens
 - ▶ Ginseng
 - ▶ Peppers
 - ▶ Other root veggies
- ▶ For marinades, short fermentation & quick eating
 - ▶ Eggplant
 - ▶ Mushrooms
 - ▶ Zucchini
 - ▶ Tomato
 - ▶ Any of the fermentation veggies
 - ▶ Fruit

Resources - Books



Wild Fermentation – Sandor Ellix Katz

The Korean Kitchen – Copeland Marks

The Kimchi Cookbook – Lauryn Chun

Kimchi – Byung-Hi & Byung-Soon Lim

Fiery Ferments – Kirsten & Christopher Shockey

Resources - Fermenters

- ▶ Lots of options available in-store & online.
 - ▶ Fermentation crocks & jars
 - ▶ Special Airlock lids that can fit in wide-mouth mason jars
 - ▶ Weights for wide-mouth mason jars
 - ▶ Full kits
- ▶ Get what suits your kitchen & batch size!



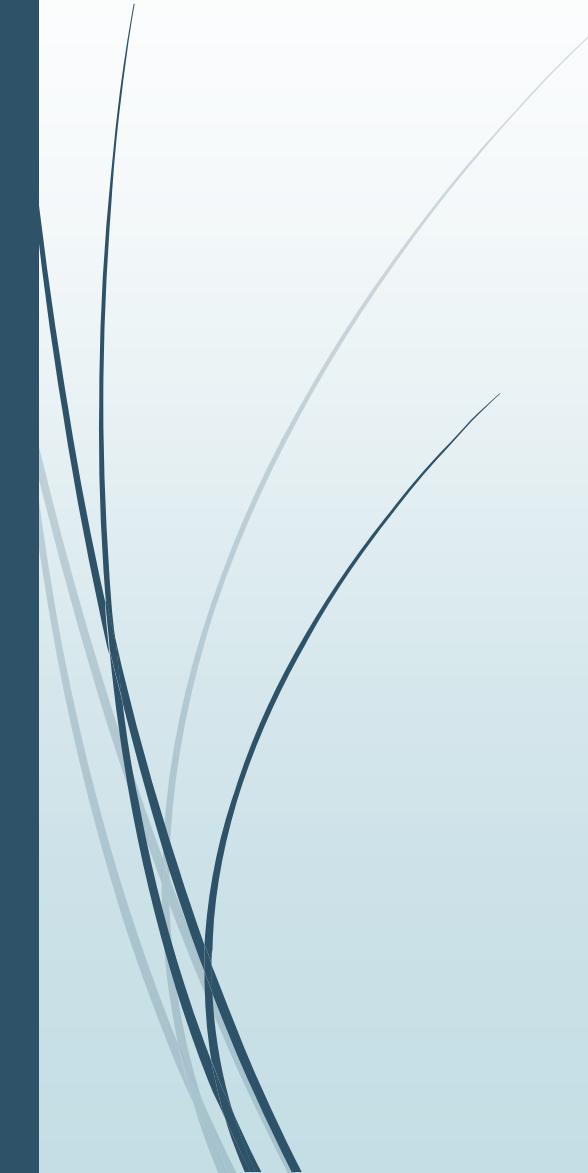


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- ▶ Rob Tod & Allagash Brewing for donating beer!
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- ▶ Kelly Montgomery & Brink Brewing for lots of limes & a kimchi/beer pairing test.
- ▶ Thanks to all those homebrewers who have given me resources and tips along the way!



Questions



Mushroom Broth

Vegan Alternative to Fish Sauce

- ▶ ¼ cup dried shiitake or porcini mushrooms
- ▶ 1 cup boiling water
- ▶ 1T kosher salt

- ▶ Pour boiling water over mushrooms, add salt
- ▶ Cover & rest 20 minutes
- ▶ Squeeze the water out of the mushrooms.
- ▶ Stores up to 2 weeks in the refrigerator.

Recipe from ***The Kimchi Cookbook***
Lauryn Chun



Thoughts, tips, etc.

- ▶ Fermented too sour to eat as is?
 - ▶ Use it in cooking – blending with other flavors & cooking will tone down the sour!
 - ▶ Refrigerated – the kimchi will keep at least several months – maybe longer.
 - ▶ Don't be bound by these recipes! Change them to suit your tastes.
-
- ▶ Why use an airlock?
 - ▶ To keep the oxygen out! The bad guys need oxygen!
 - ▶ To keep the pressure down. Or – you can burp your container several times a day...

Reference for Origins of Kimchi

kimchi article.pdf

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Contents lists available at [ScienceDirect](#)

Journal of Ethnic Foods

journal homepage: <http://journalofethnicfoods.net>

Original article

Discussion on the origin of *kimchi*, representative of Korean unique fermented vegetables

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ABSTRACT

Background: *Kimchi* is a unique and traditional fermented ethnic food of Korea, which consists of vegetables such as Chinese cabbage fermented with lactic acid bacteria. However, some argue that *kimchi* has only existed for 100 years, which is a false assertion.

Methods: We will discuss some papers that make statements on *kimchi*, and provide accurate historical facts on *kimchi* by analyzing ancient documents of Korea and by scientifically examining the introduction of red pepper into Korea.

Results: Belonging to the Ural-Altaic group of languages, Korean is completely different from Chinese; however, Korea did not have its own characters until 1433 when King Sejong invented Hangeul—the Korean characters. Koreans used Chinese characters in writing while using the Korean language when speaking. Therefore, although we wrote *jo* (菹) when indicating Korea's unique and traditional fermented food, *kimchi*, it is completely different food from *paochai* (泡菜). Thus, it is quite incorrect to attempt to find the origin of Korean *kimchi* in Chinese *paochai*. In addition, discussion that *kimchi* was originally white but changed into red following the Japanese invasion of Korea in 1592, and the assertion that there was no cabbage *kimchi* 100 years ago, but only *kimchi* made of white radish, are incorrect, and without any scientific evidence.

Conclusion: For thousands of years, Korea has had its own traditional fermented food, especially fermented food with red pepper, and *kimchi* is our unique and traditional ethnic food. Due to the false assertion that red pepper was introduced into Korea from Japan during the invasion of Korea, some argue that *kimchi* is only 100 years old. Such assertions are quite incorrect. Even in the *Samkukasaki* (三國史記), the *Chronicles of the Three Kingdoms of Korea*, we can see that people already ate cabbage *kimchi* in the

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