

I. GRAINS

Throughout much of man's history he has worshipped grain as the sacred source of his life. The Corn Mother is still revered today by the Hopi and the Japanese place rice on the altar as offerings to the Shinto gods or to the Buddha. Jesus taught his disciples to partake daily of the living grains, especially wheat and barley. Still today in much of the world, particularly in Asia and the Middle East, rice and wheat are man's principal foods.

Grains are the most efficient way to utilize agricultural land to produce energy from food. It takes about twenty times as much farmland to provide a given number of calories from raising beef than from growing wheat. Eight pounds of wheat are needed to produce one pound of beef. In a time of impending large scale starvation this fact must be considered by anyone wishing to act with ecological responsibility.

Grains are a complete, balanced, whole food. They often thrive even in very poor soil, are inexpensive to buy, and can be stored indefinitely without refrigeration, and easily transported.

Grains contain life and the life-energy or electromagnetic energy called "prana" in Sanskrit. A grain of wheat found in the pyramids sprouted six thousand years after it was harvested. Only the whole grain contains this life or prana. Once it is milled this energy is lost and wasted along with the chemical nutrition in the refuse from milling.

Grains are a unique way of combining the seed and the fruit, the beginning and the end of the growth process, into one compact unity. They are neither alkaline nor acidic, but rather at the very center of this food spectrum ranging from salt and meat at the alkaline extreme to sugar and alcohol at the other. They have very nearly the same acid-to-base ratio as the blood in our body.

They are very easy to digest when properly chewed, passing through the body like sunlight through water, and resting lightly in the digestive tract. When eaten as a part of a vegetarian diet it is very difficult to gain weight or experience indigestion from eating too much grain.

Each grain consists of three main parts; the bran layers, the endosperm, and the embryo or "germ".

The bran layers: Each kernel of grain is enclosed by a number of bran layers. Brown rice, for example has seven layers or "seals." The outermost layer is called the hull or "chaff". It is highly resistant to chemical penetration but not to physical pounding. Most whole grains for sale have the hull removed. The bran layers contain large amounts of vitamins, especially the B vitamins, minerals, especially phosphorous, potassium and iron, and proteins of very good quality. Rice bran (nuka in Japanese) is a byproduct of polishing natural (brown) rice into white rice. Rice polish is the inner bran layers from polished brown rice. Polishing a grain is the process of removing the bran layers from the whole natural kernel. Hulling is the process of removing only the outermost bran layer or hull. Milling is the process of grinding a whole grain or a refined grain into flour or meal.

The Endosperm: This is the main inner part of the whole kernel consisting mostly of starch, almost no vitamins or minerals, and a small amount of protein. White flour is made from this part of the kernel.

The Embryo or "Germ". This is the life-giving part from which the grain sprouts. It is one of the richest sources of vitamins B and E. It also contains valuable proteins and fat. The germ of each grain of wheat occupies only 2% of the volume. Yet all the oil, from which the flavor of the grain is derived, comes from the germ section. If a flour is "de-germed" the flavor as well as much of the nutritional value is lost. If the germ is left in the flour the flour is perishable; therefore with many flours sold today the germ is removed in order to preserve the "shelf-life" of the flour. Sometimes preservatives are added to give flour longer keeping qualities. By milling the flour with stone buhr wheels the germs can be left in and rubbed evenly throughout the flour leaving no concentration of oily flakes to oxidize and become rancid as is the case with high speed milling.

The eight grains are rice, wheat, corn, buckwheat, oats, barley, rye, and millet. To learn how to prepare these tastefully and to make grains the primary food in the diet is essential. In the civilized western world grains, and especially natural whole grains and their flours have virtually disappeared from the daily diet. Simultaneously the proportions of meat and sugar (including alcohol) have greatly increased. Meat, which is very alkaline, and sugar and alcohol, which are very acidic, tend to create a need for each other in order to maintain balance in the organism. Thus in the last four generations in the West a major change has taken place in our eating habits which is not widely recognized.

Most of the basic whole grains and their flours can no longer be purchased in most food stores. The fluffy white bread is made from grain with the bran layers and the germ removed, the remaining flour bleached, and chemical nutrients and preservatives added. While it will last a long time in the breadbox, is "pure" white and requires little chewing, it has almost no flavor and little nutritional value or life energy, not to mention the effects of the preservatives on the body.

That 9.5% of our diet which is grains (the largest item being wheat flour) is most in highly processed and refined form such as dried cereals like Corn Flakes or Sugar Snacks, in white breads, pastries (cakes, cupcakes, cookies), or in quick cooking form such as minute rice, converted rice, instant oats, or ready-made pancake mix.

Many Westerners do not recognize the taste of barley, rye, buckwheat or millet, or the taste of the flours of these whole grains. Even brown rice, cornmeal and rolled oats are uncommon. Our ancestors three and four generations ago were familiar with all of these and could use them creatively. We have become consumers of processed foods rather than creators of good meals from the basic natural foods. Thus cooking has lost its significance as a creative art of transformation and alchemy. And eating has lost its significance as sacrament and ceremony and the process of transforming the body.

It is very helpful to have a good pressure cooker which will maintain 15 pounds pressure for cooking grains, and especially brown rice. Use cast iron, stainless steel or clay -which heightens the taste- for pots. Avoid aluminum. Try to use wooden utensils for stirring and serving. Start a small granary in the kitchen.

I. BROWN RICE: The King of Grains

Rice is the main food of the majority of the world's population. It is the most balanced, least expensive, and most easily prepared and digested whole grain. During the past hundred years white rice, which is milled brown rice (natural rice with the bran layers removed), has been widely substituted where brown rice was formerly eaten. White rice is easier to chew and to digest and many prefer its flavor. Before the milling of rice made white rice popular in Japan (around 1900) brown rice was eaten in Zen monasteries whereas today only white rice is eaten. The following table shows the percentages of nutrients lost during the milling of brown rice:

Protein	15%	Riboflavin (B2)	70%
B Vitamins	70%	Pantothenic acid	62%
Calcium	90%	Pyridoxine	56%
Niacin	68%	Fat	85%
Thiamine (B1)	80%		

Brown rice is alive and contains "prana" or life energy. Each grain is sealed in seven bran layers and contains the life-giving germ. With thorough chewing this life energy is released to the human body. In eating the whole grain we waste neither chemical nutrients nor prana. However we must eat slowly, chew well, breathe deeply.

The earliest known records of rice cultivation date back five thousand years to ancient China. To these people rice was more than the basic food, and played an important part in their religious ceremonies. To the Emperor alone was given the privilege of sowing the rice. "Wa", the Japanese word for "peace" is made of the words for "mouth" and "rice". The Sanskrit word for rice is "dhanga" which means "supporter or nourisher of mankind." The Japanese deified rice in the form of the rice-god Toyo-Uke No Okami. Among certain Hindus it was customary to make an offering of rice on the birth of a male child. Rice spread to Persia in about 400 B.C. where the tradition of throwing rice at newlyweds originated. It was believed that this act assured happiness and prosperity. The Moorish invasion brought rice to Europe through Spain, and it reached the American colonies at Virginia by 1694. Rice was first planted in California in 1912 and has since become a major crop of that state.

At Tassajara brown rice is served as the main dish every night (except on the day off) for dinner with gomasio (sesame salt), and every other morning mixed with other leftover grains and vegetable soup as "gruel." It is truly a perfect food of which we do not seem to tire. The Japanese say that a meal without rice is no meal.

By varying the amount of water, salt, pressure, and cooking time, rice can be prepared in different ways. Less water produces a lighter, fluffier rice; more water makes a creamy, soft dish

with a sweet taste and pudding texture often served for breakfast in Japan. The scorched rice on the bottom of the pot is delicious when it is golden brown. Rich in minerals, it is used in Japan as a medicine.

Rice is either long grain or short grain. At Tassajara we prefer a California-grown rice, short grain, called Koda Brother's "Kokuho". It is almost always prepared by pressure cooking.

#1. PRESSURE COOKED BROWN RICE

Here are the basic steps for the pressure cooking of brown rice and of any other grain as well. Fill the pressure cooker no more than one half full of grain and pour in water to cover. Stir the grains gently clockwise with your hand until the water becomes cloudy and then pour it off. Add more water and stir again repeating this three or four times.

Leave the desired amount of water in the pot. From one and one half to two times the depth (or amount) of water as grain are good beginning proportions. It is important not to fill the pressure cooker more than 70% full. For best results use the pressure cooker with neither too little nor too much volume of grain and water.

Put on the lid making sure that the rubber ring is clean and the escape valve unblocked. Secure the weight and put the pressure cooker on the fire. When the pressure comes up, turn the fire down low and check the clock. Cook at 15 lbs. pressure for approximately 25 minutes, then remove the cooker from the stove and allow the pressure to come down naturally. Remove the lid, stir the grain with a wooden rice paddle dipped in cold water, and serve with gomasio. If the grain is stored in a covered wooden rice bowl or refrigerated it will keep sweet and fresh for several days.

For large groups of people, three-fifths of a cup of dry brown rice per person will usually suffice. Thus for five:

3 c. brown rice
4½ c. water

#2. GOMASIO (Sesame Salt)

Gomasio: This mixture of sesame seeds and salt, roasted and ground is the basic seasoning used with grains at Tassajara. It is served evering morning and evening in a separate dish in the zendo. Only gomasio, no milk, sugar, honey or fruit is served used on hot breakfast cereals such as oatmeal, cornmeal, or rice cream.

Sea salt: Common salt made by the evaporation of sea water with nothing added. Most commercial table salt contains chemical additives such as sodium silicoaluminate or magnesium carbonate for free flowing, and potassium iodide and dextrose for flavor and "iodizing". Make your own sea salt at the beach with a big pot and a driftwood fire.

Suribachi: A Japanese serrated earthenware mortar with wooden pestle used for grinding sesame seeds and sea salt into gomasio. An American indian stone mortar and pestle (matate) is a good substitute. Available at most Japanese hardwares or groceries.

¼ c. sea salt
1¼-2½ c. sesame seeds.

#5. SWEET BROWN RICE AND AZUKI BEANS (Also spelled aduki)

Azuki beans: These dark red, small dry beans are regarded as the "king of beans" by the Japanese. They are not considered a legume in the Orient, but one of the five grains. They are excellent with brown rice, sweet brown rice, or sweet white rice, in soups, and as desserts. A rich source of calcium, phosphorous, iron, protein and B vitamins, they contain more minerals and protein than most of the eggs or meat sold today. Although fairly expensive, they are worth the extra cost. Available at Japanese groceries.

Sweet brown rice: This is a glutinous rice used on special occasions and usually served with azuki beans. Available at Japanese groceries. Different from sweet white rice which is usually called simply "sweet rice" and also from ordinary brown rice.

4 c. sweet brown rice gomasio
1 c. dry aduki beans

Pressure cook azuki beans in $2\frac{1}{2}$ c. water at 15 lbs. for 40 min. Cool pressure cooker. Add 4 c. sweet brown rice and 6 c. water to the beans. Pressure cook 25 more minutes, allow pressure to come down naturally and serve with gomasio. This same dish may also be prepared with ordinary brown rice in place of sweet brown rice although it is not as delicious. Prepare in the same manner with the same amounts of brown rice and water. This dish is served on special occasions in Japan and at Tassajara. Sweet white rice is not served with azuki beans.

#6. SAKURA RICE (Rice with tamari)

Prepare as in #1 adding 1 T. of tamari per cup of dry rice before pressure cooking.

#7. GOMUKU RICE

Prepare rice as in #1. Nituke onion, mushroom, carrot, leek, parsley, and garlic in that order, add to cooked rice and serve. The rice may also then be fried.

#8. FRIED RICE

Prepare rice as in #1, #3, #6, or #7 and fry in hot corn oil or a mixture of 1 part corn oil and 1 part sesame oil. For special flavor add raisins, nuts, diced apples, or sunflower seeds roasted.

#9. RICE BALLS

This is an excellent way to prepare rice for picnics or for traveling. The umeboshi acts as a preservative. The samurai would take a bag of rice balls to last for several weeks travel.

cooked brown or white rice	umeboshi salt plums
nori or ajitsuke nori	misozuki pickles
toasted sesame seeds	carrot slivers
diced apple	daikon slivers

Dip hands in 5% solution of cold salt water. Form rice into a disk in the hand and fold in plum, fruit and/or vegetables above, sealing them inside. Toast the nori by waving three times above an open flame and wrap around the outside. Roll in toasted sesame seeds or gomasio. Cooked azuki beans can also be added to the rice balls.

#18. CRACKED WHEAT WITH ONIONS

Cracked Wheat: Whole wheat cracked into 4 to 6 separate pieces free from flour

2 c. cracked wheat	3 t. oil
2 chopped onions	6 c. boiling water

Brown cracked wheat slowly in a frying pan until slightly colored and fragrant. Add oil, chopped onions, and boiling water. Cover and let simmer for one hour stirring occasionally. Add more water if necessary. A pinch of thyme, basil, or garlic can be added to enhance the flavor.

#19. WHEATBERRIES AND WHOLEWHEAT FLOUR

2 c. wheatberries	3 c. water
1 c. wholewheat flour	1 t. oil

Soak the wheatberries (whole wheat, wheat groats) overnight. Roast the flour in oil. Pressure cook together at 15 lbs. for 40 min, allow the pressure to come down naturally, and serve with gomasio. Adding the wholewheat flour makes the berries easier to chew. An alternative preparation is to soak 3 c. of berries overnight, grind up 1 c. of these and pressure cook both as above.

#20. WHEATBERRY CHOWDER

Sweet rice: Also called sweet white rice, this is a glutinous white rice usually covered with tale and glucose. It is different from sweet brown rice and from ordinary white rice. It is very sticky when boiled and, used whole, makes an excellent thickener in soups such as squash and pumpkin soups. It is also a good sweetener in treats. For the greatest sweetness and thickening qualities it should be roasted first, then added whole or ground.

Wheatberry chowder was served almost every day for two months at lunch during the long winter of 1969 when the road was closed with snow and we had eaten up all of our grains except rice and wheatberries. Large quantities of undigested wheatberries were later found in a stopped-up septic tank. Chew well!

2½ c. wheatberries
2 c. sweet rice
5 c. water

Pressure cook as in #1.

IV. BUCKWHEAT

Buckwheat is not, strictly speaking, a grain or cereal. It is botanically related to rhubarb and dock. It requires little cultivation and thrives on poor soil, with few pests or diseases. It is so hardy and grows so densely that it is often planted to kill the weeds in a field by shading and smothering them.

In about 1860 the U.S. produced 23 million bushels, but this year it produced about 15.

It is the most alkaline of all the grains. The Saracens ate it as their basic food and it made them hearty and energetic. It thrives in cold countries as well as warm ones and is known as a warming food in the Winter. It is a heavy food. Buckwheat is the grain richest in magnesium, calcium and amino acids. Its protein is very high quality.

The story is told of how the Russian handball team came to Paris with the firm intention of winning the title. As soon as they arrived they went to a restaurant and asked for buckwheat. The restaurant had no buckwheat. So they went to other restaurants and at each they were told that there was no buckwheat. Their coach did not hesitate; he simply decided that he and his comrades should fly back to Moscow. How could a Russian sportsman possibly play without his precious kasha?

In Tokyo there are hundreds of restaurants specializing in the preparation of buckwheat.

Kasha: It is usually used to mean roasted buckwheat groats, but it may be used to mean any buckwheat groats, or coarse, cracked buckwheat, millet, or barley. The roasted groats are delicious for traveling.

Buckwheat cooks very fast. It has such a strong flavor that it is often mixed with other grains.

#21. BUCKWHEAT GROATS AND ONIONS

1 c. buckwheat groats	1 onion
2 c. boiling water	1 t. oil

Saute groats in oil 5 min. stirring constantly. Add boiling water, cover, and simmer for 10 min. Slice onions lengthwise, saute in oil until barely brown and serve with groats. For flavor, add a little tamari.

#22. BUCKWHEAT CREAM AND APPLES

1 c. buckwheat flour	2 apples
2 c. boiling water	1 t. oil

Roast buckwheat flour in a little oil. Cut the apples lengthwise into eighths and boil in 2 c. water until soft. Add the roasted buckwheat flour to the pot and cook 5-10 min. (May add raisins and ground cinnamon.) A good way to serve cold apples on a cold morning.

#23. YOGI'S KASHA BREAKFAST FANTASTIC

This recipe has never been tried at Tassajara. A yogi named Shyam Batnagar wrote detailed instructions of how it was to be served at a weekend program he was giving with Esalen. It was too good to omit.

2 c. browned kasha	$\frac{1}{2}$ c. sesame seeds, roasted
2 T. soy oil	1 sliced banana
2 chopped carrots	1 apple chopped fine
$\frac{1}{2}$ c. cracked almonds	1 pear diced
$\frac{1}{2}$ c. hazlenuts	2 cardamom seeds crushed
$\frac{1}{2}$ c. sunflower seeds	dust of cinnamon.

Dry roast buckwheat groats until brown. Saute all ingredients together for 15 min.

V. CORN

Along with wheat, corn has been the most widely used grain

in the Americas. To many of the Indians of North and South America it was a source of life and a sacred food. In the Popul Vuh, the sacred book of the Quiche Maya, it is told how "...of yellow corn and of white corn they made their flesh; of corn-meal dough they made the arms and legs of man. Only dough of corn-meal went into the flesh of our first fathers." The belief that man was originally made of corn was also held by the Aztecs and Zapotecs.

More acres of land are planted in corn than in any other crop in America. It is the most valuable crop grown economically. There are six kinds of corn. We eat fresh sweet corn; pop popcorn but 90% of the corn grown is called dent corn. (Each kernel has a small dent on the top caused by shrinking of the starch inside the kernel when the corn is dried.) Corn is both yellow and white. When roughly ground it is cornmeal, when finely ground, corn flour. Hominy grits are cracked white corn.

Since cornmeal and corn flour turn rancid quite easily it is preferable to use them freshly ground if possible.

#24. CORNMEAL AND CORN

1 c. cornmeal	fresh sweet corn
3½ c. boiling water	¼ t. oil

Saute cornmeal in oil, add boiling water and cook 30-35 min. Steam fresh corn, add to cooked cornmeal and serve with gomasio.

#25. CORNMEAL - ROLLED OATS - RICE CREAM

2 c. cornmeal	10 c. water
1 c. rolled oats	
½ c. rice cream	

Boil cornmeal alone for 30 min. Add oats and rice cream and boil another 30 min. Serve with gomasio.

#26. POPCORN and POPPED RICE

This is a good way to travel with a grain.(or prepare it for picnics.)

¼ c. popcorn
2-3 T. corn oil

Heat oil in a heavy, deep pan with a top until a kernel of popcorn dropped in the hot oil pops. Pour in about ¼ c. popcorn, or just enough to cover the bottom of the pan no more than one kernel deep. Reduce heat to medium and shake until all corn is popped.

For popped rice:

3 c. rice	water to cover
¼ c. salt	

Wash rice and soak it in water to cover for 48 hours. Rinse, add new water and the salt and soak for another 24 hours. Drain. In a hot pan roast the rice, stirring constantly. Remove the pan

from the flame from time to time until the rice pops and can be chewed easily. Do not roast all at once, but do about $\frac{1}{2}$ c. at a time. This will make it pop more easily and more uniformly.

II. NOODLES, PANCAKES, GRAINBURGERS AND GRUEL

#27. FRIED UDON AND SOBA

Udon: Japanese wheat noodle, vermicelli or macaroni. It can also be made of cornmeal.

Soba: Japanese buckwheat noodles. A very popular food in Japan. Often eaten in soups.

1 part udon (1 pkg.)	carrot
1 part soba (1 pkg.)	onion
2 t. corn oil	mushroom
$\frac{1}{2}$ t. sesame oil	salt
nori	

Soak nori 15 min. and saute with thinly sliced vegetables in oil. Bring 2 quarts of water to a boil. Add the noodles, and when the water boils again add 1 c. of cold water. Do this three times and then remove the noodles from the stove, cover, and let sit for 10 min. Drain, rinse with cold water, and dry. Saute together with vegetables in hot oil for 5 min. and serve.

#28. HOMEMADE BUCKWHEAT NOODLES (Teuti Soba)

2 c. buckwheat flour	1 egg.
1 c. wholewheat flour	1 t. sea salt

Mix all ingredients and knead over and over until smooth and shiny. Roll out to about $\frac{1}{10}$ inch thickness on a floured breadboard, then roll up like a carpet. Make vertical slices as thin as possible. Boil as in #27 and serve with Kake Sauce, #29 or Bechamel Sauce, #30.

#29. KAKE SAUCE

1 carrot	1 t. olive oil
2 onions	1 T. arrowroot or cornstarch
2 cabbage leaves	salt

Saute finely cut vegetables in hot oil. Add $\frac{1}{2}$ c. water and nituke. Dissolve arrowroot in a little cold water and add to pan with salt. Let cook 3 min. more and serve.

#30. BECHAMEL SAUCE

Bechamel sauces are combinations of flour, oil, and water or stock in different proportions. The "white sauce" is made from unbleached white flour; the "brown sauce" from wholewheat flour. Serve with noodles or vegetables like asparagus. For white sauce:

$\frac{1}{2}$ c. unbleached white flour	3 c. stock or water
$\frac{1}{2}$ c. corn oil or olive oil	salt

Heat the oil slightly. Add flour gently and roast, stirring constantly. Do not roast too long for white sauce, only until the lumps disappear. The color should remain unchanged and the flour powdery. Cool the pan by running cold water over the bottom and add cold liquid to the flour mixing very rapidly. It will lump easily if you are not careful when adding liquid. Boil for 20 min., stirring occasionally. Add salt to taste and keep simmering until serving time or the sauce will harden.

For brown sauce: Replace unbleached white flour with whole wheat flour above. Roast until browned but not burned, 15-20 min. It will have a nut-like fragrance. Finish as for a white sauce. Add 2 t. tahini with the salt.

#31. YAKI SOBA (Fried Buckwheat Noodles)

Fry cooked teuti soba #28 in 4 t. hot sesame oil for 10 min. Serve with kake sauce.

#32. FRIED EGG NOODLES

1 pkg. egg noodles	garlic, fresh
olive oil	pepper
salt	

Add egg noodles to boiling water for 3-4 min. Fry or wok in olive oil with garlic, salt and pepper. For best results, brown fresh garlic in olive oil before adding noodles.

#33. OKONOMIYAKI PANCAKES (feeds 10)

1 onion, diced	1-1½ c. whole wheat flour
2 carrots, grated	1 c. unbleached white flour
1/3 chinese cabbage	1 T. honey
2 c. cooked dried daikon #61	1 can evap. milk (3" tall)
1 pear, chopped	tamari
2 t. salt	

Shred chinese cabbage in thin slices 2" long. Add flours and other ingredients with liquid to make thick batter. Salt to taste with tamari. Fry in light oil leaving moist outside.

#34. SWEDISH PANCAKES PAPER-THIN

Discovered from Marie Fehring in Carmel, these are almost a dessert. Not yet tried at Tassajara but too good to omit.

1 c. unbleached white flour	1 t. salt
4 eggs	1 T. honey
2 c. milk	½ cube butter
1 t. baking powder	lingenberries
powdered sugar, optional	

Grease pan with butter very lightly and only for the first pancake. Sloss batter around in the pan, cooking one at a time. The first few may not turn out too well but don't stop. Serve with lingenberries or lingenberry jam, butter, and powdered sugar

#35. BUCKWHEAT-AZUKI PANCAKES

1 c. buckwheat flour
 1-1½ c. water
 ½ t. salt

¼ c. azuki beans
 2/3 c. water for cooking beans
 ¼ t. salt.

Pressure cook azuki beans as in #5. Dry roast buckwheat flour in a pan, then mix flour, water and salt to form a thin batter. Add cooked beans and stir well. If the batter is too thick the pancakes will have a raw taste. Spoon onto hot greased frying pan. May serve with apple sauce.

#36. FRIED GRAINBURGERS

¾ c. toasted rolled oats
 1½ c. cooked rice cream
 1 c. cooked lentils
 1-2 c. wholewheat or white flour

¾ c. grated cheddar cheese
 tamari
 pepper
 sesame oil

Mix into a thick batter. Fry in pan with oil like hamburgers.

#37. GRUEL

Gruel is an ancient food invention designed to prevent waste and create continually new and always different combinations of foods. It is served every other morning at Tassajara and uses up all of the leftovers from the past two days.

All leftover grains, soups, and vegetables are mixed together in a large pot and heated. If more volume is desired, rolled oats may be added and simmered for 30 min. with the gruel. If all of the gruel is not eaten it may be made into gruel bread #40. Gruel is one of the most popular and delicious dishes at Tassajara.

III. BREADS, MUFFINS, CRACKERS

"How should we cook our daily bread without fire, Master?" asked some with great astonishment.

"Let the angels of God prepare your bread. Moisten your wheat that the angel of water may enter into it. Then set it in the air, that the angel of air also may embrace it. And leave it from morning to evening beneath the sun, that the angel of sunshine may descend upon it. And the blessing of the three angels will soon make the germ of life to sprout in your wheat. Then crush your grain and make thin wafers, as did your forefathers when they departed out of Egypt, the house of bondage. Put them back again beneath the sun from its appearing, and when it has risen to its highest in the heavens, turn them over on the other side that they may be embraced there also by the angel of sunshine, and leave them there until the sun be set. For the angels of water, of air, and of sunshine fed and ripened the wheat in the field, and they, likewise, must prepare also your bread. And the same sun which, with the fire of life, made the wheat to grow and ripen, must cook your bread with the same fire. For the fire of the sun gives life to the wheat, to the bread, and to the body."

from The Essene Gospel of John
 (preparation of original matzo)

"Whenever anyone asks me how to build up the health of a growing child, a convalescent, or an invalid, how to add more protein, calcium, iron or B vitamins to the diet, or simply how to have fun at cooking, my answer is: 'Make your own breads.'" from Let's Cook it Right; Adelle Davis

Breads are made by combining flour, water, and salt. Anything else is extra. Flour is made by milling whole grains. The most common flours are:

Wholewheat flour: Wheat is the only grain containing gluten which is a natural leavening agent. Bread made from wholewheat flour, if well kneaded and allowed to rise in a warm place before baking, will be quite light without the addition of yeast. This flour, therefore, is the basic foundation of most breads. Unlike white flours, it contains the nutritious bran layers and the germ in the flour. Stone ground wholewheat flour is best since it will not oxidize and become rancid nearly as fast as flour from high speed milling. (See "germ" p.9) It also contains the natural wheat flavor. Most breads include at least one half whole wheat flour. If it is possible to purchase the flour freshly milled or to mill it yourself shortly before making bread, you will notice a great difference in the flavor of the bread.

Unbleached white flour: A refined flour from whole wheat. No bleaching nor preserving chemicals have been used. It is refined mechanically, without chemical treatment. It gives lightness to breads and makes them smooth and less sticky. Often used with pastries, unless white pastry flour, made from soft wheat, is desired. It is processed like unbleached hard wheat flour above.

Cornmeal: Makes a bread light and sweet; somewhat crunchy.

Corn flour: a finer grind of corn than cornmeal, it also makes breads light and sweet.

Buckwheat flour: It is dark and flavorful, but quite heavy. Especially good to warm you up in winter.

Rice flour: Adds sweetness and a smooth consistency

Barley flour: Sweet and somewhat crumbly. A bread made with this flour will need no other sweetening.

Rye meal: Pumpernickel. Chewy and somewhat sweet.

Breads are much more delicious when made from freshly ground or milled flour. Many people have never tasted a bread made in this way. The easiest way to do this is with a

Corona hand mill: An inexpensive (\$12) hand mill that looks like a meat grinder. For grinding grains into flour or meal, making vegetables puree, gomasio etc. Order from the Whole Earth Catalog, 558 Santa Cruz Ave., Menlo Park, Calif. 94025

Bread is served each day with lunch at Tassajara, usually with a spread. Equal amounts of un-yeasted, unsweetened and yeasted, sweetened breads are served.

I. UNYEASTED BREADS

For most of man's history he has made his bread without yeast, using only the natural leavening in the whole wheat flour. Unyeasted breads are heavy and chewy, rich in flavor, and usually require no sweetening other than that of the grains themselves. There are two main varieties: kneaded bread and batter bread. It is often best to start baking unyeasted breads in a cold oven to bake the inside more thoroughly.

#38. TIBETAN BARLEY BREAD (2 loaves)

This is perhaps the most popular of the many good breads at Tassajara.

4 c. barley flour	4 T. sesame oil
8 c. whole wheat flour	4 T. corn oil
3 t. salt	7 c. boiling water
$\frac{1}{4}$ c. roasted sunflower seeds	4 T. tahini
$\frac{3}{4}$ c. roasted sesame seeds	

Pan roast the barley flour in 2 T. oil (1 T. sesame and 1 T. corn) until darkened. In a large bowl add 8 c. whole wheat flour to 4 c. roasted barley flour. Add salt, sunflower seeds, sesame seeds and mix. Add 3 T. each sesame and corn oil. Thoroughly mix by patiently rubbing flour between palms of hands. Add 7 c. boiling water and mix. Add tahini, mixing in well. Knead well in bowl, keeping hands cool with cold water. Then knead well on breadboard. Shape into two loaves and press into oiled (sesame and corn) warm bread pans. Cut a $\frac{1}{2}$ inch deep slit lengthwise down the top. Let sit 3-6 hours or overnight. Put into a cold oven and bake at 450 deg. for 40-60 min. until a chopstick comes out dry. The sides should be dark brown and the bottom almost black.

#39. DUTCH RYE BRICKS (2 loaves)

A dark, heavy, moist, chewy bread. Delicious.

8 c. rye meal	3 t. salt
2 c. cracked wheat	7 c. boiling water
2 T. honey or molasses	$\frac{1}{2}$ c. wheatgerm or bran
4 T. corn oil	4 c. whole rye berries (opt.)

Pressure cook whole rye berries in 3 c. water at 15 lbs. for 30 min. Mix with all other ingredients in a mixing bowl, cover, and let stand overnight at room temperature. The following morning shape loaves and roll in wheatgerm. Bake in a covered pan for 4 hrs. at 200 deg. Place another pan of hot water in the oven to keep it moist. After cooling, eat immediately or wrap in a towel and refrigerate to keep from drying or moulding.

#40. GRUEL BREAD

Leftover grains, soups, and vegetables can be made into gruel (#37) and the leftover gruel used to make this rich, chewy bread.

4 c. gruel	$\frac{1}{2}$ c. oil
4-5 c. whole wheat flour	1 T. salt
water if necessary	tamari

Mix gruel and flour, adding enough flour to obtain earlobe consistency. Knead 10-15 min until smooth, shape into loaves and put into oiled pans overnight. Brush the tops of the loaves with tamari and bake at 350 deg. for about 90 min. Interesting variations are obtained by using all or part unbleached white flour instead of or with whole wheat flour, mixing the batter quite wet by adding additional soup, and undercooking so the bread is quite moist inside.

#41. BROWN RICE AND YAM BREAD

Yams, pumpkin, squash and well cooked carrots are excellent sweeteners in breads.

4 c. cooked brown rice	wholewheat flour
2 c. steamed yams (or rutabe)	oil
3/4 c. roasted sunflower seeds	salt

Mash yam, add brown rice, seeds, oil, and salt. Add flour to desired consistency, about 6-8 cups, and add water. Let sit 24 hours and bake at 350 deg. for 60-75 min.

#42. CAROB-DATE BREAD

Carob: A chocolate substitute also called St. John's bread or "Honey Locust". The flour or powder is made from grinding the carob bean. It is alkaline, high in calcium, rich in natural sugars, and low in fat (2% fat compared with 52% fat in chocolate).

5 c. whole wheat flour	1/2 c. carob flour
2 c. brown rice flour	1 c. chopped dates
1 c. buckwheat flour	1 T. salt

Roast the brown rice flour lightly. Dissolve carob powder in water and mix together with all the ingredients. Knead 100-200 times, put in pans and let sit overnight. Bake at 350 deg. for 1 1/2-2 hours. Use moist dough and serve hot with real butter. Best if the flours are freshly ground!

#43. GLUTEN BREAD

Gluten flour: Gluten flour is a low starch flour made by washing the starch from high-protein wheat flour. The flour is a concentrated source of natural wheat leavening and makes unleavened breads light with kneading.

4 c. cooked brown rice	12 c. whole wheat flour
6 c. gluten flour	3 T. tamari

Grind cooked brown rice in Corona hand mill. Mix all ingredients and add water to earlobe consistency. Knead 400 times! Store in a warm place overnight. Knead 200 more times. The more the bread is kneaded the lighter it will be. It's a nice meditation. Place loaves in oiled pans and bake at 350 deg. for about 90 min. until a chopstick comes out dry.

#44. SELF-RISING UNYEASTED BREAD

This is the earliest and simplest form of loaf bread.

7 c. whole wheat flour
1 T. salt

Mix flour and salt and add enough warm water to give proper consistency for kneading. Knead 300 times, cover with a wet towel and allow to sit 12-24 hours in a warm place. Knead again 100 times, put in oiled pans, and let sit 4 more hours in a warm place. Slit tops of loaves 1/2 inch deep lengthwise and bake at 350 deg. for 30 min. Then turn up oven to 450 deg. for 45-60 min. The crust should be dark brown and the bottom almost black. The top may be brushed with tamari before baking.

#45. BATTER BREAD

The batter method of making breads requires no kneading. The use of corn flour or cornmeal will help make the breads light. Many different combinations of four basic flours (or two or three of these) give a great variety of tastes: whole wheat flour, buckwheat flour, corn meal, rice flour. To start, try:

3 $\frac{1}{2}$ c. whole wheat flour	$\frac{1}{2}$ c. roasted sunflower seeds
1 $\frac{1}{2}$ c. cornmeal	1 T. dark sesame oil
1 $\frac{1}{2}$ c. cracked wheat	3 T. corn oil
$\frac{1}{2}$ c. roasted sesame seeds	3 T. tahini
miso soup #96-97	

Place the flours in a large container such as a porcelain bread bowl or a wooden saled bowl and add the necessary amount of salt. Mix the flours with a wooden spatula or rice paddle, stirring clockwise from the outside inwards in a spiralic motion, turning the bowl a little each time. This should take several minutes.

Add corn oil and other oils before adding the water. This is a good use for deep frying oil which might otherwise be wasted. Pour the oil on top and continue to mix. Then pick up one handful of flour at a time and rub it well between your palms. When this is done with patience the oil will be well distributed through the flour.

Add water a little at a time stirring as above. The result will be a very thick batter, still not too thick to pour, ready to bake. The amount of water will be determined by experience and will vary according to the texture you want to achieve, the weather, the kinds of flour you are using, and your oven.

Heat the bread pans on top of the stove and brush them lightly with oil. Heat helps the oil to spread so that less is needed. Pour the batter into the pan using a wet paddle to shape and smooth the top. Try to avoid unnecessary pressing as it may make the bread too hard. Turn the oven on after placing the bread inside. If the oven is preheated, the bread will not cook on the inside well enough. Cook at around 350 deg., depending on your oven, for an hour or so. To determine when the bread is done, observe whether a chopstick inserted in the loaf comes out fairly dry. The bread should be well crusted and lightly browned. This bread is quite heavy.

The above description is for batter using only flours, salt and water. With the particular ingredients above, add 2 c. boiling water where water is called for and then miso soup to obtain the desired consistency. Add the seeds and tahini after rubbing in the oil but before adding the water.

For a simpler recipe use the ingredients in #47, Buckwheat Batter Muffins.

II. YEASTED BREAD

#46. CORN MEAL-MILLET BREAD

Most of our yeasted breads are made with the "sponge method." They are light and usually quite sweet. A sponge has a consistency thicker than a batter but wetter than a dough. The gluten in the wheat flour is fully developed before other flours are added.

2½ c. whole wheat flour	1-2 T. salt
2 c. unbleached white flour	1 T. (pkg) dry yeast
2½ c. corn meal	¼ c. honey
1½ c. millet meal	1 c. dry milk (opt.)
¼-½ c. corn oil	

To 3 c. lukewarm water in a large bowl, add yeast, honey, and dry milk, stirring well. Slowly stir in flour until a thick, stiff batter is obtained. Cover with a damp towel, put in a warm place and let rise 1 hour.

Fold in corn oil and salt being careful not to stir too much. Add corn meal and millet meal. The dough is the proper consistency when it comes away from the sides and bottom of the bowl and is earlobe consistency. Put whole wheat flour on a clean breadboard and knead for 10 min. until smooth and unsticky. Put bread back in the oiled bowl and let rise in a warm place for about 1 hour until doubled in volume. Punch down, and let rise an additional hour. Punch down again, make into two loaves, place in oiled bread pans and let rise another 30 minutes. Bake at 350-375 deg. for about 1 hour.

By varying the types and amounts of flour and the amount of sweetening, many different breads can be made in this manner. (See Ed Brown's Tassajara Cookbook for numerous fine variations.) Other sweet breads recipes are listed under treats #149-151.

III. MUFFINS (and others)

#47. BUCKWHEAT BATTER MUFFINS (makes 18)

1 c. buckwheat flour	1½ t. salt
1 c. whole wheat flour	¼ c. oil
2½ c. corn meal	2½ c. water

Prepare batter as in #45. and put in warm, oiled muffin tray. Sprinkle top with sesame seeds or poppy seeds and let stand 1 hour. Put in cold oven and bake 60-75 min. at 350 deg.

#48. BUCKWHEAT AND AZUKI MUFFINS (makes 12)

½ c. azuki beans	1 c. wholewheat flour
1 carrot	1 c. buckwheat flour
1 t. fresh cinnamon	1 t. salt

Soak beans overnight. Pressure cook 45 min. in 2½ c. water. Grate carrot; ½ regular and ½ super fine. Grind cinnamon. Mash beans and mix in carrot and cinnamon. Mix flours and salt. Mix in beans and enough water to make a stiff batter. Heat muffin tins and oil lightly. Fill full and let stand at least 40 min. (more would be better.) Bake at 325 deg for approximately 1 hour until done. They may be garnished with slices of carrot cut in the shape of a flower or sesame seeds before baking.

#49. BRAN MUFFINS

Dry ingredients:

2 c. whole wheat flour	1½ t. baking soda
1½ c. bran	1-2 T. grated orange rind
¼ t. salt	

Wet ingredients:

2 c. buttermilk
1 egg, beaten
2 T. honey

$\frac{1}{2}$ c. bananas mashed
2-4 T. melted butter
1 c. raisins and nuts

Preheat oven to 350 deg. Beat wet ingredients and combine with dry with a few swift strokes. Fold in before dry ingredients are entirely moist; bananas, nuts, and raisins. Fill muffin tins $\frac{3}{4}$ full leaving concave top to be filled with:

Biscuit Topping-Filling

6 c. chopped dates	2 T. lemon juice
2 c. raisins	2 T. cinnamon
2 c. roasted sunflower seeds	2 t. nutmeg
$\frac{1}{2}$ c. honey	$\frac{1}{4}$ t. salt
peel of 2 lemons, grated	

Just cover dates and raisins with water, cook 15 min. and mash. Add remaining ingredients and spoon into top of biscuits. Bake biscuits 25 min. at 350 deg. Good also for treats. Served April 8 on Buddha's Birthday at Horsepasture. Too much!

#50. ONION ROLLS

These are thin like cookies and all of the sweetening comes from the onions and grains. Good for hikes and picnics.

3 c. sauteed onions	2 T. oil
4 c. whole wheat flour	1 egg
1 c. corn flour	sesame or poppy seeds
1 c. buckwheat flour	$2\frac{1}{2}$ c. water
1 T. salt	

Combine all ingredients but egg and seeds. Knead dough to earlobe consistency. Roll out on floured breadboard and cut into triangles, circles, or squares 3-4 inches across. Brush tops with beaten egg (1 part egg to 1 part water) and sprinkle with sesame or poppy seeds. Bake at 350 deg. for 30 min.

#51. EGG BAGLES

3 c. warm water	5 c. unbleached white flour
1 T. yeast	2 small onions
$\frac{1}{4}$ c. honey	1 c. oil
6 whole eggs	1 T. salt
5 c. whole wheat flour	$\frac{1}{2}$ c. milk for wash
poppy or sesame seeds	

Prepare sponge as in #46. Let rise 45 min. then add oil, salt, and remainder of flour, until dough comes away from the sides of the bowl. Knead 5 min., let rise 50 min., punch down. Cut dough into thirds and each third into 24 equal pieces. Roll each piece out into tubes. Connect the ends of the tubes around the first two oiled fingers and seal by rolling on table. Dip rolls in boiling water, one at a time, in a strainer for 10 sec. Wash with mixture of equal parts egg, milk, and water. Sprinkle with poppy or sesame seeds. Let rise 20 min. Bake at 425 deg. for 20 min. and serve with cream cheese.

#52. CHAPATI

This is the unleavened flatbread of neolithic man still eaten daily in India and South America. Good food for traveling.

1 c. whole wheat flour
1 t. salt

Blend ingredients together, adding water gradually. Knead the dough until it reaches earlobe consistency. Roll out on a floured board until it is very thin. Cut into 4 inch squares and roll out each square. Place these on a dry (or oiled) baking pan or cookie tin and bake at 350 deg. in oven until crisp and slightly browned.

#53. SPECIAL CHAPATI

4 c. whole wheat flour	½ c. chopped raisins
1 c. roasted sunflower seeds	1 T. salt
1 c. roasted sesame seeds	1 c. popped rice #26
1 c. rolled oats	

Prepare as in #52 but do not roll thinner than 1/8-1/16 inch.

#54. PURI

Use the same ingredients as for chapati #52 and the same method of preparation except that instead of baking they are dropped into deep, hot oil. They will puff up like ballons. Drop them in one at a time and gently hold them under the hot oil until they start to puff up and then let them rise to the surface. Turn when one side is browned and brown the other side. Drain and put on a paper towel to absorb excess oil. Serve as a cracker or stuff with rice and/or vegetable nituke. They are eaten in India with Chapati as a daily staple.