

Phytic Acid Friend or Foe

The Soaking of Grains Investigated

By Sue Becker

Since 1992 I have been teaching others the health benefits of freshly milled whole grains. I have heard literally hundreds of testimonies of improved health, from minor issues to life threatening ones. What a confirmation these testimonies have been to the truths that have been taught.

Over the years, though, conflicting messages have arisen from time to time. When questioned concerning these teachings, I would research each one as to their validity. Most of the time I found some truth mixed with error. I chose to answer these questions on a personal level as they arose. I did not wish to get in a public arena of debate, choosing instead to just let truth prevail, and it always has. I have watched books, diets and teachers come and go.

However, there is a teaching I feel I must address formally. It is causing quite a stir among those of us who have embraced the lifestyle of milling our own grains. I have searched, studied and agonized over the subject for the past 4 or 5 years. My desire was not to prove any one wrong, but I had to know that what I was teaching was correct. If I was teaching error I had to change. It is my desire to present to you my findings and let you make an educated decision as to what is correct.

The subject is phytic acid and the sprouting or soaking of grains. Phytic acid is considered by some as an anti-nutrient component found in the bran portion of all grains and beans. It is being taught that "untreated" phytic acid can combine with calcium, magnesium, copper, iron and especially zinc in the intestinal tract and block their absorption. It is being said that a diet high in unfermented whole grains supposedly can lead to serious mineral deficiencies and bone loss. It is also suggested that long term consumption of these untreated phytates may lead to irritable bowel syndrome and other serious adverse affects.

Statements are also being made that imply that grains have always been eaten in their sprouted form and that "our ancestors and virtually all pre-industrialized people only ate grains that were soaked or fermented". *Nourishing Tradition by Sally Fallon pg.452*

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My first thought is, that I see no reference of sprouting grains in the scripture. Many people refer to Ezekiel 4:9 as the first mention of sprouted bread. Careful examination of the verse however, gives no indication that the grains are sprouted. God's instruction to Ezekiel is to take "wheat, spelt, barley, millet, lentils and beans" and to put them into "one vessel". A word study done on "one vessel" showed that it means exactly that – one container. I do not see any indication of sprouting. One must remember that each of these grains or beans was used separately for food, for example barley loaves or spelt bread. The instruction to Ezekiel appears clear to me. God did not want Ezekiel to make a variety of breads out of the individual grains, but one bread out of the grains combined. Individually, grains and beans lack certain necessary amino acids, the building blocks of proteins. However, when grains and bean are combined, they perfectly complement each other, forming a complete protein. In a long term fast, much body mass is lost due to a lack of nourishment, particularly protein. When grains or beans are sprouted some protein is lost. I believe this bread was not sprouted, and the incredible supply of complete protein and other nutrients perfectly nourished Ezekiel for over 400 days!

It is taught by some that grains were harvested differently in Biblical days than now. This is Jordon Rubin's best argument as to why there is no evidence of the sprouting of grains in the Bible. The teachings of Dr. Edward Howell are quoted and embraced as truth by both Sally Fallon and Jordon Rubin. "Dr. Howell noticed that the old harvesting techniques helped preserve and enhance the nutrition value of the grain. After cutting the mature grains in the field, farmers would gather the stalks and loosely bind them upright in sheaves and let them stand overnight in the field before threshing them (or removing the grain from the grass stalks) the next day. **This allowed the grains to germinate or sprout**". *The Maker's Diet by Jordon Rubin pg.139* (emphasis mine). The premise is that this "germination" or sprouting of the seed in the field broke down the "harmful" phytic acid naturally so that no further soaking of the grain was necessary.

Dr. Howell's statement is so simplistically wrong I truly thought I was missing something! No seed can begin to germinate or sprout and then be stored. The sprouting process can not be put on hold. It is like being pregnant – you are or you aren't. If you are, you can not put it on hold and save the baby until you are ready for it. That baby will continue to grow until it is full term. It is the same with seeds. Once the sprout is formed, a full grown plant is going to develop. If

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seeds were allowed to sprout, they could not be stored, resulting in no seeds for next year's crop and no food for the winter.

Germination of the seed does indeed stimulate phytase activity. Phytase is an enzyme that breaks down phytic acid and that allows the release of stored mineral which the new plant needs for growth. Normally these nutrients are stored securely inside the seed until it germinates. The fermentation process of yeast triggers this same activity and causes phytase to transform non-usable minerals into digestible ones. These minerals include phosphorous, zinc, calcium, magnesium, iron and copper. Without proper fermentation, these minerals remain inaccessible to your body. Allowing bread to rise for several hours before baking insures maximum nutritional value and the release of these stored nutrients.

I checked with the owner of one of our grain elevators on grain harvesting procedures. The owner had just returned from Ethiopia. It was harvest season there. He assured me that the primitive methods used for harvesting grain in Ethiopia today were the same primitive methods for harvesting grain used for thousands of years. The cut wheat was tied up in bundles, **because it is easier to pick up a bundle than an individual stalk.** The seeds must be fully dry at harvest time or they will not store! It is not desirable for the grain to get damp; therefore, it is harvested as quickly as possible. The only difference in modern methods of harvesting is that machinery is used to perform the tasks. The last thing any farmer wants is for the grain to get damp!

"Like snow in summer and rain in harvest so honor is not fitting for a fool." *Proverbs 26:1 Amp. version*

"Is it not wheat harvest today? I will call to the Lord and He will send thunder and rain; then you shall know and see that your wickedness is great which you have done in the sight of the Lord in asking for a king for yourselves." *I Samuel 12:17 Amp. version*

Moist grain at harvest is a curse from God, not a benefit!

The History of Bread Making and Natural Leavens

Since I first began this journey of making my own bread, from freshly milled grains, the history of bread making has fascinated me. I have read many books and articles on the subject. I have never read anything to document the statement about our ancestors and “virtually all pre-industrialized people” soaking their grains. In preparation for writing this article I have spent even more time searching out and reading articles on the internet on the history of bread making. Again I found nothing on soaking or fermenting grains historically.

I think perhaps there is some confusion with the yeast “starters” that required an over night soak.

Prior to the availability of commercial yeast, bakers, as well as, homemakers had to “make” their own starter. I found two recipes for starters in a cookbook that was printed in 1901. The cookbook belonged to my husband’s great grandmother and was a “*Careful Collection of Tried and Approved Recipes*” compiled by The Ladies Aid Society. I figure that would date these recipes in the 1800s.

Organisms needed to leaven bread dough could be “caught” from the air. Equal parts flour and milk were mixed together to form a smooth batter. The raw milk, unlike today’s pasteurized milk, would supply the lactic acid bacteria. The mixture was allowed to set uncovered for several days to catch various organisms from the air. Once the growth of the yeast and bacteria made a nice bubbly mixture the “starter” was ready and could be used for making bread. The day before making bread, this starter was mixed with equal parts flour and water or milk and allowed to soak or “sponge” for 24 hours or overnight. The next morning a portion of the starter was saved and stored in a “yeast pot” (mentioned in the book of Exodus) for future use. Flour, sweeteners, oil and salt were then added to the rest of the sponge to make the bread dough. The dough was kneaded then shaped into loaves and allowed to rise for several hours. The **entire** amount of flour used was not soaked or allowed to ferment, only what was necessary to make their yeast. These starters are a mixture of yeast and lactic acid bacteria. The yeast does the leavening and the lactic acid bacteria gives the bread a sour flavor, hence the name sour dough bread. These “starters” are often referred to as natural leaven since the yeast is considered wild and caught from the air. To say that natural leaven is not yeast is incorrect.

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The strains of commercial yeast used today were isolated, as microorganisms were discovered, and grown for commercial use because of their hardiness and viability. It was more practical for bakers to have yeast readily available. I enjoy the flavor of sour dough and first learned to make bread using a sour dough starter. But I enjoy the convenience of bakers yeast and see no difference in the method of bread making through out history and the way I make bread today, except that I do not have to grow my yeast. I incorporate the yeast into my dough, just as has always been done, except that my yeast is in a dry form and not from a starter. I do, of course, lose the sour flavor contributed by the lactic acid bacteria.

Through out history many civilizations have indeed had numerous fermented foods as part of their diet. The fact that many ancient cultures ate a fermented bread of some sort, however, does not mean that all bread has to be fermented. Just because one culture eats a fermented cabbage food, known as sauerkraut, does not mean that all cabbage has to be fermented. Yogurt is a fermented dairy food; does that mean all milk has to be fermented? Certainly not!

One must remember that the fermentation of foods was chiefly a preservation method. Fermenting grains also offered a variety of texture, flavor, and aroma. Years ago, sweeteners and flavoring were not as readily available to the common people; therefore, grains or flour and water were often allowed to ferment overnight to give the bland "bread" some flavor. The dough was then fried or baked. Fermenting grains does indeed break down some of the protein, which is not necessarily advantageous. In fact, a nutritional study done on Ogi, a fermented African corn bread, showed that there were considerable **losses** in protein and calcium during the fermenting of Ogi. Researchers found that "the biological quality of Ogi was so poor it did not support the growth of rats"! (*History of Fermented Soy Foods, Special Report by William Shurtleff*)

Common breakfast cereals, such as oats were often soaked overnight. Before the process of rolling oats came along to shorten the cooking time, oat groats could take several hours to cook to obtain a nice creamy texture. Soaking the groats overnight shortened the early morning cooking time. Our ancestors were logical people. To imply that they soaked or fermented grains because of some innate sense that it was more nutritious is sheer speculation.

Phytic Acid – Friend or Foe?

Phytic acid's "chelating" ability is considered by some to be a detriment to one's health. On the other hand, many researches embrace this ability to bind with minerals as its most powerful asset. In her book, *Diet for the Atomic Age*, Sara Shannon, lists 11 nutrients in particular that protect against heavy metal toxicity and radiation damage. Phytates bind with radioactive and toxic substances and carry them out of the body. Aware of phytic acid's mineral binding properties, Shannon states that an adequate diet will more than compensate. One must also remember that whole grains themselves are an abundant source of iron, calcium, and zinc. After extensive research, Shannon found that the more toxic our environment becomes, grains are our best source of protection, particularly due to the phytate content. She believes that "for optimal health, at least half of every meal should be grains". Why would one want to denature something that is so beneficial? In fact, a supplement company is actually isolating this "powerful antioxidant" because of its anti-tumor, anti-carcinogenic, and blood sugar regulating properties!

Studies show that phytic acid, particularly from wheat bran, actually stimulates the productions of phytase in the small intestine. The fact that phytase can be produced in the small intestine eliminates the necessity of fermenting all grains before consuming them, as in the case of unleavened breads, quick breads (that do not use yeast as a leavening), and parched or boiled grains. Phytase activity in the small intestine actually increased, not decreased, the absorption of minerals, especially, calcium. (*Journal of Nutrition 2000:130: 2020-2025*). Over the years we have seen numerous people healed of life long anemia issues after they began grinding their own grains to make their bread. How could this be if phytic acid in the bran kept iron from being absorbed?

Other studies have also shown that this increase of phytase activity, stimulated by phytic acid, offered significant reduction in the formation of cancer cells in the colon. This anti-carcinogenic protection was also attributed to phytic acid's mineral chelating properties. If phytic acid strengthen and protects the colon, how could it cause colitis and irritable bowel syndrome? Again we have heard numerous testimonies of healing of both colitis and IBS from eating "real bread".

Phytic acid **can** be digested by humans and actually releases inositol during the process. Inositol is a key B vitamin necessary for the metabolism of fat and cholesterol. Whole grains are a valuable source

of inositol, as well as choline and lecithin, which are also important in the break down of cholesterol. This may explain why so many people have reported a significant reduction in cholesterol levels once they began making their own bread from freshly milled grains. Inositol is also an essential nutrient in reducing depression. Again I ask - why would we want to denature this valuable nutrient?

One should really wonder why whole grains and phytic acid were "picked on" at all. Why not oxalic acid? It is a mineral chelator found in spinach, chard, cranberries, almonds, rhubarb and other vegetables. Should we quit eating these healthy foods as well? Sally Fallon encourages the use of flaxseed for its rich source of fatty acids, stating that it is low in phytic acid. Yet sources that herald phytic acid as a nutrient, give wheat bran and flaxseed as the richest sources.

Does soaking the grain over night actually denature the phytic acid? Not from what I have read. Only about 10% of the phytic acid is broken down in an overnight soak and that is not enough to make a significant difference.

Is There a Place for the Sprouting of Grains?

Absolutely!! In fact I got very excited as I began to study this. Of the many essential nutrients needed by your body to promote health and life, there are only four nutrients deficient in wheat, vitamin A, vitamin C, vitamin D and the amino acid lysine. When grains and beans are sprouted, there is some loss in protein, but vitamin A content increases by 300% and vitamin C by 500%. In fact sprouted grains were used on long ocean voyages to prevent scurvy. Limes, and lemons would eventually rot, but the storable grains would last the duration of the voyage and could be sprouted at any time. Sprouted grains can also be more easily tolerated by those who can not digest gluten.

As our food supply gets more and more contaminated and manipulated – our fruits and vegetables are radiated and picked long before ripening, animals are fed antibiotics and hormones that then show up in our meat and dairy products, genetic modification is being done to much of our food supply – we can become very discouraged and left with very few safe food options.

Grains, however, do not have to be radiated to be made storable, they are not fed antibiotics or hormones, and organic grains are not

genetically modified. From all of this, I see the hand of a wonderful Creator that made a perfectly storable food, which can be ground into flour to make delicious breads of all sorts and to obtain two of the missing nutrients one can then sprout the grains. Grains, as I see it are our most reliable food!

The Attack on Bread – God’s Perfect Provision

For a long time I have been very concerned as I have watched bread be attacked from every direction. The “low carb” diet propagated the myth that bread will make you fat. Gluten is treated like some evil substance, found in bread, when in fact it is just the protein portion of the grain, with specific health benefits. This is not to negate the fact that some people have serious physical issues with gluten. But the problem is not with gluten. If so, why is corn such a common allergen? It has no gluten. What about milk? These are all wonderful foods that God has given us that are now thought of as unhealthy when in fact we are the ones who are unhealthy. We lack the ability to digest these foods properly. Now presently grain is bad because of some mold on the wheat and phytic acid in the bran. What next?

I believe that the day has come where God is going to use sickness and disease as a powerful evangelistic tool. As God’s people we must prepare. As we turn to His ways of eating, always letting His word be the final authority, we will see our health return. As those around us become sicker they will look to us for answers. As we share truth for physical health, we will be sharing truth for spiritual health. But if deceptive teaching can prevail and convince the world that bread is bad, then why would any one want the Real Bread of Life. Deceptive teaching is a powerful tool of the enemy. We must pray continually for wisdom. None of us is above being deceived. In fact as I have struggled with the validity of this teaching, the Lord spoke this scripture to my heart:

“You foolish Galatians! Who has bewitched you? ... Did you receive the Spirit by observing the law, or by believing what you heard? Are you so foolish? After beginning with the Spirit, are you now trying to obtain your goal by human effort: *Galatians 3:1 NIV version*

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I do not wish to be either foolish or bewitched. James 1:5 tells us that if we lack wisdom we are to ask God who will give it.

Throughout the Bible, bread is considered a symbol of healing or the presence of God. Jesus compared Himself to bread because bread, made from freshly milled whole grains is life giving and life sustaining. As the days become more and more evil, Jesus will be attacked in any and every way. If the life giving bread to which Jesus compares Himself, can be brought into question, then the very name of Jesus and His saving power can be more easily discredited as well.

DISCLAIMER: Nothing in this article should be construed as medical advice. Consult you health care provider for your individual nutritional and medical needs. The opinions are strictly those of the author and are not necessarily those of any professional group or other individual.

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