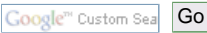




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Farm Issues

Homegrown Grains: The Key to Food Security -- How to Grow and Make Your Own Wheat Flour



Organic Consumers Association, May 28, 2009
[Straight to the Source](#)

Freshly ground wheat flour has a high vitamin content; vitamins that degrade all too quickly when exposed to the air. The whole grain flour that we buy from stores is often quite stale and may have significantly reduced vitamin content when compared to freshly ground.

GROW YOUR OWN WHEAT

([from breadinfo.com](#)) Planting a plot approximately 10 feet by 10 feet will, when all is said and done, yield between 10 and 25 loaves of bread. To begin, find a nice backyard plot and choose the type of wheat you wish to plant. In the United States two varieties are grown, white and red. Red wheat is more common. Red wheat also produces bread with a much more intense flavor. Consider the advantages of growing winter wheat as opposed to spring variety.

Winter wheat can be planted from late-September to mid-October. It is the preferred variety because it tends to be more nutritious than spring wheat, protects the soil in the winter, and has less competition from the weeds in the spring. Try to plant early enough to get a good root system growing before winter dormancy sets in, but not so early that flies and pests become a problem. Spring wheat is planted in early spring and is most commonly found in the northern reaches of the country where the intensely cold winters create problems for winter wheat.

Finding a source for seeds can be a problem. Seed supply houses usually sell in large quantities to farmers and are not geared to individuals wanting to make a small plot in their back yard. The seeds they provide can also be laced with fungicide. Still, this is the best place to begin. You can also find wheat seed at your local natural food stores. The grain in the bins may be planted as well as eaten, just be sure you know whether you are getting winter or spring wheat so that you plant in the proper season.

Try to plant the seed on good rich soil. The ground should be relatively even. This can be done with a rototiller, or more naturally with a shovel and a rake. There are three methods of planting, one is the time honored broadcast method in which 3 ounces or so of seed is "sprinkled" over the garden bed for every 100 square feet. This is about 1 seed for every square inch. Planting density is largely dependent on the richness and moistness of the soil. More wheat per square feet will absorb more nutrients and moisture. Be sure to rake the patch to cover the seed and protect it from hungry birds.

Another method, called drilling, creates a hole about every six inches and plants several seeds per hole. The plants come up in a bunch but spread out over the bare area. This method allows for weeding when the plants are young, but is more labor intensive. Similarly, tightpacked rows (about 6 inches apart) can be made in the soil and the wheat seed spread up and down the rows in the manner of beets or carrots.

HARVEST, THRESH AND WINNOW YOUR WHEAT

Wheat harvest usually occurs in June when the wheat begins to turn a golden color but still has a few streaks of green. Using a scythe or some other sharp blade, mow down the stalks then tie them into bundles, standing them upright in the garden patch. Then allow the grain to fully ripen into a golden color.

Twine could be used to tie the bundles, but the traditional method is to take about an inch thick bunch of stems. Tie the lower end, binding the stalks together. Then wrap them around the bundle tying the head and foot of the stalks at about the middle of the bundle, creating a shock.

Keep the heads dry, then thresh and winnow at your leisure. The simplest form of threshing involves grasping a quantity of ripe wheat in one hand and beating it around the inside of a barrel. The grain falls off the stalks and the stalks are discarded or composted.

Winnowing is the process of separating the wheat from the chaff and small bits of straw. Since time immemorial this has been done by pouring the wheat from one container to another in a stiff breeze. The breeze blows away the chaff and the resulting wheat is as pure a product as you may easily produce. Absent a stiff breeze, a fan may be used.

Your wheat is now ready for storage. Wheat may be stored in barrels, bags or what-have-you. The basic requirements are that the space be cool, dry and pest-free (think rodent and bug).

<ul style="list-style-type: none"> ▪ NAIS ▪ Honey Bees 	<p>GRIND IT</p> <p>Throw some in a blender or food processor and grind to flour consistency.</p>
<p>Politics & Democracy</p>	
<p>Publications</p> <ul style="list-style-type: none"> ▪ <i>Organic Bytes</i> ▪ <i>Organic View</i> 	<p>Start with a half cup of whole grain. Turn the blender up to its highest speed. If the blender seems to bog down, stop and reduce the amount of grain. Add a larger amount for the next batch if the blender handled the original half cup sufficiently. Continue to grind the grains until they reach the consistency desired. Grind the grain in batches until the desired amount is achieved.</p>
<p>Resources</p> <ul style="list-style-type: none"> ▪ OCA Sponsors ▪ Buying Guide ▪ OCA Action Center ▪ OCA Press Center ▪ OCA En Español 	<p>Pick your favorite pasta, pancake, bread, cookie or muffin recipe and start baking!</p> <p>-----</p> <p>The following is an excerpt from <i>Small-Scale Grain Raising: An Organic Guide to Growing, Processing, and Using Nutritious Whole Grains for Home Gardeners and Local Farmers</i>, Second Edition by Gene Logsdon. It has been adapted for the Web.</p> <p>Gene Logsdon Chelsea Green Publishing May 28, 2009 http://www.alternet.org/environment/140300/homegrown_grains:_the_key_to_food_security/</p> <p>I remember the first year we grew grains in our garden. A good gardening buddy dropped by one day early in July just when our wheat was ripe and ready to harvest. He didn't know that though. His reason for stopping was to show me two splendid, juicy tomatoes picked ripe from his garden. After a few ritual brags -- and knowing full well that my tomatoes were still green -- he asked me in a condescending sort of way what was new in my garden. I remembered the patch of ripe wheat.</p> <p>"Oh, nothing much," I answered nonchalantly, "except the pancake patch."</p> <p>"The pancake patch?" he asked incredulously.</p> <p>"Yeah. Sure. Until you've tasted pancakes fresh from the garden, you haven't lived."</p> <p>"And where might I find these pancakes growing?" he queried sarcastically, to humor my madness.</p> <p>"Right up there behind the chicken coop in that little patch of wheat. All you have to do is thresh out a cupful or two, grind the grain in the blender, mix up some batter and into the skillet. Not even Aunt Jemima in all her glory can make pancakes like those."</p> <p>My friend didn't believe me until I showed him, step by step. We cut off a couple of armloads of wheat stalks, flailed the grain from the heads onto a piece of clean cloth (with a plastic toy ball bat), winnowed the chaff from the grain, ground the grain to flour in the blender, made batter, and fried pancakes. Topped them with real maple syrup. Sweet ecstasy. My friend forgot all about his tomatoes. The next year, he invited me over for grain sorghum cookies, proudly informing me that grain sorghum flour made pastries equal to, if not better than, whole wheat flour. Moreover, grain sorghum was easier to thresh. I had not only made another convert to growing grains in the garden, but one who had quickly taught me something. <i>Grow Your Own Grains</i></p> <p>The reason Americans find it a bit weird to grow small plots or rows of grain in gardens is that they are not used to thinking of grains as food directly derived from plants, the way they view fruits and vegetables. The North American, unlike most of the world's peoples, especially Asians and Africans, thinks grain is something manufactured in a factory somewhere. Flour is to be purchased like automobiles and pianos. Probably this attitude came from the practice of hauling grains to the gristmill in past agrarian times. Without the convenience of small power grinders and blenders of today, overworked housewives of earlier times were only too glad to have hubby haul the grain to the gristmill. And that gave him an excuse to sit around all day at the mill talking to his neighbors.</p> <p>But even with the advent of convenient kitchen aids to make grain cookery easier, the American resists. He will work hard at the complex task of making wine -- seldom with a whole lot of success -- but will not grind whole wheat or corn into nutritious meal, a comparatively easy task. I know, because I was that way myself. Until I saw with my own eyes that a good ten-speed blender or kitchen mill could turn grain into flour, I hesitated. Now it boggles my mind to remember that for most of my life I lived right next to acres and acres of amber waves of grain, where combines made the threshing simplicity itself, and yet our family always bought all our meal and flour.</p> <p>The real tragedy of that ignorance was that the flour we purchased usually was the kind that had been de-germed and de-branned too. Most of the nutrition had been taken out of that flour to give the American home cook what she seemed</p>
<p>Intern with OCA!</p>	

to want: a pure white powder that would last indefinitely on the shelf and make pastries of fluffy, empty calories.

What has sparked a new, or renewed, interest in homegrown grains is the dramatic rise in grain prices, and rumors of shortages worldwide, that occurred in 2007. Whether these high prices and shortages are the result of ever-rising populations in so-called third world countries, the dramatic increase in the price of oil, or the greater use of corn and other food plants for making biofuels, we can't say for sure. Nor can we predict whether these conditions will continue. But we have been warned. For a whole host of reasons, it is time to think about growing your own bread.

The nutritional picture for whole grains is getting better all the time, thanks to the progress being made by plant geneticists. There are, first of all, the problematical GMO advances (genetically modified grains), which make modern chemical and large-scale farming easier. It is too early to predict what this development will mean for the future. So far, these genetic wonder plants haven't meant bigger yields or haven't produced a farming method that third world (or perhaps even first world) countries can afford. But some of these developments, which can stack disease-attacking genes into grains (or into products like milk from cloned animals) may indeed have medicinal value and justification. It's too soon to know.

But outside the gene-stacking laboratory, dramatic developments in grain quality and production are being achieved. Opaque-2, or high-lysine corn, with almost twice the normal amount of the proteins lysine and tryptophan in it, indicates the possibility of more improvements. Triticale, a cross between wheat and rye that does not always live up to its promises, sometimes outyields wheat, oats, rye, and barley and has more protein than ordinary corn. New varieties of oats, long known as the grain with the highest protein (excluding legume seeds like soybeans), range as high as 17 percent protein content. And the cholesterol-fighting benefits of oats are well established now. Studies of new buckwheat varieties have prompted the USDA's Agricultural Research Service to announce that this traditional crop, which made something of a comeback in the 1990s, has an amino acid composition nutritionally superior to all cereals, including oats. There's also renewed interest in traditional grains like spelt, which a few gluten-intolerant people may sometimes be able to handle in place of wheat. And, perhaps most exciting of all, Wes Jackson's Land Institute in Kansas is developing perennial grain from wild wheatgrasses and crosses with wheatgrass and wheat. Think of what it would mean if we could plant a grain like we would any other grass, and harvest it every year without any planting or soil cultivation needed.

All sorts of projects seeking to develop traditional grains and keep them inviolate from GMO grains are ongoing. The Farmers Breeding Club of the Northern Plains Sustainable Agricultural Society is a project linked to a series of organic-variety trials with small grains being conducted through a partnership between organic growers and agronomists at North Dakota State University and the University of Minnesota (www.npsas.org/BreedingClub.html). In another example, Canadians are bringing old heritage varieties of wheat back into circulation, and using them in bread making (<http://members.shaw.ca/oldwheat/>).

This is probably as good a place as any to say something I will probably repeat until you get tired of reading it. I have discarded almost all of the general references to sources of grain information that were in the first edition. They were either outdated or too general to be helpful. The best way to stay abreast of new information on grains is to use the search engine of your choice on the Internet. Everything is on the Internet. But even better than that is to involve yourself in local activities in small-scale farming. There are all sorts of new organizations and efforts in place that amaze me, even though I thought I was more or less in the flow of this information. For example, I was looking for places where a small grain grower could get a small amount of seed cleaned (by and by I will talk about the need for seed cleaning). In earlier days, every farmer had a seed cleaner. Now, hardly anyone does. I was about to write that you would have to take your grain to an elevator or farm-supply service to get it cleaned when I happened to check the membership directory of the Ohio Ecological Food and Farm Association (OEFFA), of which I am a member. To my surprise, not only did one of our members offer seed-cleaning services at his garden farm, but he lived just a few miles from me in the same county.

Organizations like OEFFA flourish in nearly every state now, certainly in every geographical region. Home in on them. They all have newsletters about their projects, and these newsletters contain advertising from other garden farmers about the products and services they offer. This is up-to-the-minute information, which no book can promise. My latest favorite "find" is the Northern Plains Sustainable Agriculture Society mentioned above.

Almost all grains can be sprouted to make delicious salads, and in some ways are more nutritious than the dried grain. Beans, clover (especially alfalfa), and wheat make excellent sprouts for human consumption. But oats and barley, in addition to wheat, can be sprouted and fed to chickens and livestock as farmers sometimes do. That kind of feed supplement can keep farm animals healthy and well-fed even in winter without today's expensive all-vitamins-included commercial feed.

Corn sprouts win no prize for taste, but corn makes up for that lack with other advantages. Sweet corn and popcorn are two of our most popular foods, but corn can also be parched, pickled (corn salad), or made into hominy. Popcorn made the national news in 2008 because of the prices being charged for it at movie houses. I found that simply ridiculous. There is nothing easier to grow than popcorn, or easier to prepare for eating. Pioneers in the Corn Belt survived some winters almost entirely on a diet of corn. They cracked, ground, grated, boiled, parched, squeezed, flaked, and baked it into porridges, cakes, muffins, dodgers, and "pone."

A very important food use for grains is in making alcoholic beverages. The best moonshine I ever tasted was "made right" from fermented corn mash. It equaled in mellowness the most expensive firewater I can afford. Of course, other grains make other kinds of whiskey, and malt from barley, a leading crop in the northernmost states, is used for beer and other malt foods and drinks, and of course Scotch whiskey. Wheat beer has also become popular, as has vodka from wheat and other small grains. Whole Grains for Your Livestock

But the use of whole grains directly in your own diet is only half the reason for growing them. The other half, just as important I think, is to ensure yourself and your family an economical, steady supply of milk, meat, and eggs, and possibly cheese, wool, or other animal products you need or desire as part of your goal of homegrown security. I believe in and practice grass farming or pasture farming, where animals get most of their nourishment from perennial grass and clover pastures. Pasture farming makes a small amount of grain in the animal's ration practical because small-scale farmers simply do not have the wherewithal to raise large amounts of grain even if they wanted to. Pigs and chickens, both of which lack the multiple stomachs of grazing animals like cows, sheep, and goats, especially benefit from some grain in their diets. If you have to go to a store to buy the grains you need for your chickens or pigs, your own home-raised meat and eggs will cost you nearly as much as if you had bought them from the store. Furthermore, if you have to buy your grains in the marketplace, you may have to settle for less nutritional quality than what you could grow on rich organic soil and then air dry by traditional, natural methods rather than with artificial heat.

Grain plants often give you other important products besides the grain. Wheat and oats, rice and barley give you straw as a by-product -- the dried stalks left after the grain is threshed. Straw makes excellent bedding for animals and mulch for the garden. It can be woven into baskets too, and in recent years it has even been much in demand for building strawbale houses, a traditional form of "green" construction that is enjoying a renewed popularity. Corn leaves dried or silaged are good roughage feed for cows. Corn husks can be plaited into strong rope, fashioned into dolls and decorations, or used to fill a mattress in a pinch. Cane sorghum makes good syrup; buckwheat and clovers provide the bees with an abundant source of pollen for honey making. And, not to be outdone, oats provide the hulls that the manufacturer of Rolls Royce autos once used to polish the cylinder sleeves of their expensive cars. Maybe they still do. Cultural Pros and Cons

Finally, the special advantage of grains for the organic gardener and farmer is that you can grow them more easily with organic methods than you can fruits and vegetables. All grains except corn will withstand low fertilization better than vegetables. Field beans, especially soybeans, will add nitrogen in the soil. Corn is easier to cultivate mechanically than fruits and vegetables because it grows well in confined rows, making mechanical weed cultivation easier. Fungal disease is less of a threat in grains than in fruit. Grains have their share of insect enemies, but control is not nearly as critical as it can be in fruits and vegetables.

Dry beans and buckwheat can be planted as late as July 10, except in the far north, so they can be double-cropped behind peas, early beans, lettuce, or strawberries. A late sweet-corn patch may work out well as a second crop too. Barley and wheat can be planted in the fall after other crops are finished and harvested the next summer in time to double-crop that soil to late vegetables. How Much Grain?

Even a modest harvest of a peck of grain will make a lot of meals -- believe me. Excess ears of sweet corn needn't go to waste, either. Dry the corn, shell it, and make cornmeal in the blender. Or parch the corn over the fireplace on a winter evening.

Almost everyone who becomes familiar with the tastiness of whole-grain cookery wants to pursue it. Even if you don't grow your own grains, you'll not find a better way to make your food dollar pay than to buy grains and cook from scratch. And you'll soon find out how much grain you need or want to use for a year. It won't be as much as you think, even if you bake all your own bread and pastries.

We bake bread every week, and my wife makes a variety of cookies, cakes, pancakes, shortcakes, pie crusts, and cooked dishes with our whole grains. If the grain is ground fine enough, it makes good bread without the addition of any white flour, though we do add a little because we think it makes the bread a little lighter.

A bushel of wheat makes about fifty 1-pound loaves of bread. Two ears of corn make enough cornmeal for a meal's worth of corn muffins. The grain expands as it cooks with water, and so gives more food to eat than you would think the uncooked grain represented.

At most, figure a year's supply of wheat at 4 pecks (1 bushel); corn, 2 pecks; popcorn, 2 pecks; soybeans, 4 pecks; grain sorghum, 2 pecks; buckwheat, 1 peck; oats, 1 peck; triticale or rye or barley, 1 peck; navy or other soup beans, 2 pecks; alfalfa for sprouting, 1 or 2 quarts; lentils, field peas, cane sorghum (for flour), about 2 quarts each. But only experience can give you the precise annual amounts needed. We don't grow and eat as much as suggested here, but could if we wished, without increasing our production labor noticeably. Of course you can gauge your own family's consumption by estimating how much flour, cornmeal, and other grain products you use now. But your own grains may prove so delicious that you will want more than that. Figuring Space Requirements

You don't need much space to raise at least some grains. A normal yield of wheat grown organically would be at least 40 bushels to the acre. So you'd need only 1/40th of an acre to produce a bushel. That would be a plot of ground 10 feet

wide by about 109 feet long. A really good wheat grower with a little luck could get a bushel from a plot half that size. Wheat yields have been recorded as high as 80 bushels per acre and even higher.

But using the same kind of average calculations as above, the table below shows the amount of space you'd need to grow a bushel of the following grains.

Growing Grain by the Bushel field corn: 10 feet by 50 feet sweet corn: 10 feet by 80 feet popcorn*: 10 feet by 80 feet oats: 10 feet by 62 feet barley: 10 feet by 87 feet rye: 10 feet by 145 feet buckwheat: 10 feet by 130 feet grain sorghum: 10 feet by 60 feet wheat: 10 feet by 109 feet * for the larger-eared varieties; I don't know per-acre yields for the smaller varieties, like strawberry popcorn.

Don't hold me too tightly to these figures. They're estimates to give you an idea of how big the playing field is. Weather, fertility, variety, and know-how could alter these figures. All I'm trying to show really is that 9 bushels of assorted grains might be raised on a quarter of an acre and provide you with the major portion of your diet.

The amount of grain necessary to support a few head of livestock is not large, either. You need about 12 bushels of corn to fatten a feeder pig to butchering weight. We don't feed sheep any grain because we sell lambs fed exclusively on grass and mother's milk. A hen needs about a bushel a year, but if she has ample free range, she needs hardly half that and in a pinch perhaps none at all. A milk cow, along with hay and pasture, needs perhaps 5 or 6 bushels; a beef steer, about the same. And we have raised tasty beef without any grain. In other words, an acre of corn could fill the grain requirements for one pig, one milk cow, one beef steer, and thirty chickens.

What is necessary to raise grains successfully in the large garden or on the small farm is an understanding of planting, harvesting, and processing methods that are no longer common in commercial farming. In many instances, the right way in commercial grain farming today won't be the right way for small homestead growers. In some instances, the right way for you requires use of the latest technologies; in other cases it requires a reaching back for knowledge now almost lost. It takes both to make grain growing and grain eating the cottage industry it once was, and the key to food security it must become if personal independence is to be maintained and personal freedom preserved.



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