

My Straw Bale Gardening Experience So Far

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The concept of straw bale gardening entered my gardening horizon several years ago when I read in the local newspaper that Joel Karsten (considered the guru of straw bale gardening) was coming to the Twin Ports to do a presentation at one of the local spring gardening events. Though I didn't make it to that presentation, I purchased and read through his book, *STRAW BALE GARDENS*, went online and researched other people's experiences with straw bale gardening, then decided straw bale gardening might be worth a shot.

The first hurdle I had to get through in setting up the straw bale garden was where to actually put it. My husband John and I live on this little postage-stamp-sized lot that barely has room for our house, let alone all the trees, shrubs, perennials, and annuals I have brought home over the years to try to give our urban dwelling more of a country feel. John's mantra over the years as he sees me carting yet one more plant from our car to the yard has become, *"Where are you going to find a spot for that one?"* My reply is usually, "Oh, I'll find a spot."

And find a spot for the straw bale garden, I did—part of the neighbor's back yard. John had been mowing this part of the neighbor's backyard over the years because it was outside of their fenced-in area and it was just more convenient all around for us to maintain this area for them. I decided this area would be perfect to hold about ten straw bales. With the neighbor's permission, John and I proceeded to roll out landscape cloth and spread wood chips over the area in preparation for placing the bales.

With the newly-borrowed gardening real estate all prepped, the second hurdle in setting up the straw bale garden was where to get the ten straw bales. While I grew up on a dairy farm in Central Wisconsin and have several siblings that still farm, traveling 150 miles south to load a pickup truck full of straw bales was time and cost prohibitive, so I settled on a local vendor—Dan's Feed Bin. So, in early May of this year, John and I trekked with our pick-up truck to Dan's to purchase the bales. I left John outside to assist with the manual labor of loading the bales while I went inside to pay the cost of \$6.95 per bale.

Upon arriving back at the garden site, John and I unloaded and positioned the bales in an E-shaped formation with the backbone of the shape running in a north-south orientation and the arms running in an east-west orientation. We decided this shape would maximize space utilization and sun exposure while still providing enough room to move freely between the bales for planting, watering, tending, and harvesting the vegetables. While our house stands in the way of the early-morning sun hitting the garden, sunlight starts seeping onto the bales about 9:30-10:00 a.m. and starts waning about 5:30-6:00 p.m. as it sneaks behind the neighbor's garage. Thus the bales are situated in an area that gets plenty of sun to grow crops of good healthy vegetables.

However, before I could even think of planting the vegetable seeds or seedlings that would result in the good healthy vegetables I kept imagining, I had to prepare the straw bales to become good hosts to those seeds and seedlings. The bales had to go through an 11-day process known as "conditioning." During the conditioning process, the bales are plied with various amounts of fertilizer and water in order to speed up the microbial activity and thus the composting process within the bales. Just as good rich soil is meant to do, the decomposing straw bales provide a rich healthy environment for the growing vegetables.

I started conditioning the straw bales on May 7 and finished on May 23. As you can see by the attached notes that I kept during the process, weather and life events sometimes interfere with the best-laid gardening plans; i.e. an 11-day textbook process turns into a 16-day real time process. As you can also see by my notes, sometimes what seems like a good first choice isn't always the best choice for the situation or the gardener. Milorganite seemed like the ideal organic fertilizer to use on the straw bales, especially since it has added micronutrients such as iron and calcium. However, I found that working three cups of milorganite into a straw bale to get the high nitrogen content needed to fast-track the decomposition process was far too labor-intensive for me. Therefore, I went back to the drawing board to find an organic fertilizer higher in nitrogen content so I could use less. I found a Urea product which is made by a company called Espoma. Resources I found at the time stated that the product was organic; however, I have learned since that it may not be. I'll have to educate myself further on what it means to be truly organic.

Finally, planting time had arrived. Up until this point in time, I had always relied on container gardening as there is no room for a conventional garden in my small lot. I decided to start with the same types of plants I usually plant in containers—tomatoes, peas, green beans, cucumbers, squash, radishes, carrots, lettuce—and then add more if I still had room. I still had room, so I added beets, cabbage and eggplant.

Some of the plants did beautifully over the summer and are still going strong, and some did not fare so well. While I have had problems over the years with squirrels digging a hole or two in the soil in my containers to bury peanuts, and/or stealing an occasional tomato from my tomato plants or a pear from my pear trees, this year an army of them moved in and are viscously digging up everything. They especially like digging in the soft straw bales. The first damage they inflicted on the garden is that they dug up and scattered many of the seeds that I planted. That is why I now have carrots growing at the base of the straw bale instead of on top of it where they should be. Also, I have yet to eat an eggplant fruit as the squirrels have beat me to them. They also dug up about 30 young sweet corn plants and twice as many sweet corn seeds in a raised bed I started in the neighbor's back yard. But the good news is that one pumpkin plant survived in that bed, has grown huge, and is now producing 10 nice pumpkins. To try to curb the damage they have been inflicting not only on the garden, but the other plants in our yard as well, John and I have finally resorted to live trapping them and hauling them out to the forest. We have taken four trips to the forest so far with hopefully more to come.

Other pests I have had to deal with this summer include the white cabbage butterfly. I have noticed more of them flying around than usual. Maybe it's because in addition to the four cabbages that I planted in one of the straw bales, I planted a cabbage patch in a small piece of ground after John cleared "junk tree" stumps from around an electric pole by our neighbor's garage. I did sprinkle some diatomaceous earth around the cabbage plants once during the season to try to control not only the cabbage worm but slugs as well. While in the end, the leaves of the cabbage plants looked pretty chewed up, the cabbage heads were beautiful (see picture). I harvested over 27 pounds of cabbage which is now fermenting its way into saucer kraut in a five gallon crock container in my basement.

In comparing the cabbage heads from the straw bale with the cabbage heads from the soil plot, there were no slugs on the cabbage heads from the straw bales and I had to pick probably about a dozen or more from cabbage heads from the soil plot. I am sure slugs choose not to climb up the bales because of the sharpness of the cut straw edges. From looking at the leaves of the plants, I think the cabbage butterfly/worm attacked the plants in the straw bale more than the plants in the soil. Was this because

the plants in the straw bale dried out more than the plants in the soil? I could tell this was so because of the way the cabbage heads formed. The heads from cabbage in the straw bales were not formed as densely and were not as heavy as the heads from the cabbage plants in the soil. This tells me that I let the straw bales dry out too much between watering.

Besides the straw bales, cabbage patch, and corn-plot-turned-pumpkin-patch, I also still have plenty of container plants. For example, I have just as many tomato plants growing in containers as in the straw bales. In comparing the plants, the tomatoes in the straw bales are a lot healthier. They've grown twice as big (about 8 feet tall) as the ones in containers and are producing more fruit. I only wish I would have put up a taller cage or trellis as the tops are bending over now as they have nothing to climb upon. I also noticed that when I was away for a three-day weekend—which was often this summer—upon returning, the container tomatoes were somewhat wilted from lack of water while the tomatoes in the straw bales were just fine.

Overall, so far, I would consider my straw bale gardening experience to be a positive one. Some might consider the conditioning process quite laborious, but so is prepping a conventional soil plot in the spring and weeding during the growing season, or cleaning out last year's containers and filling them with new soil. The real positive about straw bale gardening is that you don't have to worry about pulling weeds as truly no weeds grow in the straw bales, especially if you use sterilized potting soil in which to sow the seeds on top of the bales, as recommended in the textbook. I must admit that I cheated and used last year's container soil mixed with fresh compost rather than buying the sterilized potting soil. Even so, I only had an occasional weed pop up here and there. The bales do sprout oats a week or two after the conditioning process has ended (see picture). But pulling the emerging green blades of oats from the bales is an easy task; and for me, the emanating smell as I was pulling the blades out of the bale brought back pleasant memories of the farm for this prior farm girl turned urban gardener.

As far as fertilizing and watering is concerned, the textbook recommends applying fertilizer every two weeks, I only applied a water soluble fertilizer three times, once in June, once in July, and then again in August, and the plants thrived in the straw bales just fine. I did have to water the straw bales more often than my conventional soil cabbage and pumpkin patches, but not any more often than the containers used in my container garden—perhaps even less often than the containers, depending on the size and type of container. Also, I found that watering varied within the straw bale garden itself, depending on whether the plant was a deep-rooted (tomatoes) or shallow-rooted (peas) plant.

As far as expense, the following is a table of what I spent on setting up and conditioning the ten straw bales in my straw bale garden:

<i>Amount</i>	<i>Item</i>	<i>Unit Cost</i>	<i>Total Cost</i>
10	straw bales	6.95	69.50
3/4	36 lb bag milorganite	10.00	7.50
1	4 lb bag urea	8.00	8.00
2	therms water	10.00	20.00
2	therms sewage	7.71	15.42
			120.42

The water and corresponding sewage usage is only an estimate based on the increase in therms used during the past years vs this year during the same time period. The cost could have been steeper for water usage, however John set up three 55-gallon rain barrels in our yard which I used until they were empty.

In looking ahead, I hope to plant a crop of garlic later this fall in one of the bales. It's a crop I've never tried to raise before. As the bales were pretty tightly bound together to begin with and seem to be holding together rather well yet, I hope to use them again next year; in which case, I will not have to go through the conditioning process next spring. I will definitely plant tomatoes, beans, peas, cucumbers and squash as they all did very well in the straw bales. I think I will also plant strawberries, herbs, and flowers . . . the possibilities are endless.

Conditioning Days	Days in Real Time	Fertilizer/Water	Notes
Day 1	Day 1--May 7	3 cups Milorganite	Decided to use Milorganite as fertilizer to condition bales. However, working in 3 cups of this organic material, which is only 5% nitrogen, per bale is an extremely exorbitant amount of work; worked in 1 1/2 cup of fertilizer at a time using the shower position of sprayer nozzle and totally soaking the bale as instructed in the <i>STRAW BALE GARDENING</i> book. Not sure how much water was used as it was spraying through a hose connected to a faucet, but it was A LOT. After first day, decided working Milorganite into straw bales was too much work; therefore purchased Urea which is 45% nitrogen and therefore have to use only 1/2 cup per bale.
Day 2	Day 2--May 8	Water	Used about 5-6 gallons of rain water per bale to soak bales.
	Day 3--May 9		Cold rainy low 40s degree weather prevented working on bale conditioning.
Day 3	Day 4--May 10	1/2 cup Urea	Used about 6 gallons of rain water per bale to work fertilizer in to bales.
Day 4	Day 5--May 11	Water	Cold rainy low 40s degree weather prevented working on bale conditioning.
	Day 6--May 12		Cold rainy low 40s degree weather prevented working on bale conditioning. Counted last two days as soaking day.
Day 5	Day 7--May 13	1/2 cup Urea	Used about 5-6 gallons of rain water per bale to soak bales.
Day 6	Day 8--May 14	Water	Cold rainy mid 40s degree weather. Counted as soaking day.
Day 7	Day 9--May 15		Left town for family weekend--no gardening done--cold rainy weather.
	Day 10--May 15		Out of town for family weekend--no gardening done--cold rainy weather.
	Day 11--May 17		Out of town for family weekend--no gardening done--cold rainy weather.
	Day 12--May 18		Returned home in late evening from family weekend and had prior engagement for dinner--no gardening done.
Day 8	Day 13--May 19	1/4 cup Urea	Ran out of Urea so went back to Milorganite. Not so bad as the process is down to using only 1/2 amount of fertilizer. Used about 5 gallons of rain water per bale to work fertilizer in to bales. Weather is finally sunny and high 50s.
Day 9	Day 14--May 20	1 1/2 c Milorganite	Used about 5 gallons of rain water per bale to work fertilizer in to bales. Weather is finally sunny and low 60s.
Day 10	Day 15--May 21	1 1/2 c Milorganite	Used about 5 gallons of rain water per bale to work fertilizer in to bales. Weather is finally sunny and low 60s.
Day 11	Day 16--May 22	2 1/2 c Milorganite	Rain barrels are empty so used about 5 gallons of water from tap per bale to work fertilizer in to bales. Weather is sunny and low 60s.
Day 12	Day 17--May 23	Started planting	Planted butternut squash seedlings, tomato plants, snap peas, bush-type green beans, cucumbers seedlings, eggplant seedlings, cabbage seedlings, beets, carrots, and lettuce.

