



Straw Bale Gardening

This newly revived growing technique is gaining popularity with gardeners looking for a space-saving and versatile way to grow both edible and ornamental plants.

BY MARY YEE

EVER SINCE Joel Karsten's book *Straw Bale Gardens* (Cool Springs Press, 2013) came out last year, growing plants in baled straw has been getting a lot of press. And why wouldn't it? The book's subtitle claims it's the "breakthrough method for growing vegetables, anywhere, earlier and with no weeding." "Anywhere" can be a space as small as a balcony or a driveway and you don't need to mess with bags of soil or buy expensive containers. This

technique also allows you to garden even if your soil is poor or contaminated.

Although straw bale gardening is currently trendy, some sources claim the ancient Egyptians and the Aztecs grew crops this way, and there are many instances of its use in more recent times. Basically, using straw bales allows you

Birdhouse gourds, beans, and watermelons were among the plants flourishing in River Farm's straw bale garden in early August.

to grow plants aboveground wherever there is sufficient light. The bales become simple raised beds by serving as both biodegradable containers and growing medium. No soil is needed because the straw eventually breaks down, creating a soilless growing medium.

Curious to see if this technique is as good as it sounds, American Horticultural Society (AHS) horticulturist Sylvia Schmeichel set up a straw bale garden this past spring at the AHS's 25-acre River Farm headquarters

in Alexandria, Virginia. She used Karsten's book as a guide to rig up a multi-bale system for growing a mix of vegetables, fruits, and herbs. To find out how this garden performed, see the sidebar on page 23. To create your own straw bale garden, here are some important guidelines to keep in mind, along with tips from Schmeichel's experience.

BASIC CONCEPTS

All you need to start is at least one bale of straw and a place to situate it where it will get six to eight hours of sunlight and is easy to water. Straw bale gardens need plenty of water and should never be allowed to dry out. The dimensions of a bale can vary, but most are roughly three feet by one foot by one foot, and bound by two or three pieces of twine or plastic bands.

Make sure you get *straw* bales and not hay bales. Straw is the tough inedible stem of grain plants and is used mainly for livestock bedding; hay is usually cut grass or alfalfa

Top right: The straw from the interior of a properly conditioned bale will look partly decomposed. Bottom right: Horticulturist Sylvia Schmeichel harvests a watermelon.

used for animal feed. Hay decomposes much faster than straw and often contains seeds of plants you don't want. Be sure the straw is not from a source that uses herbicides. You should be able to purchase straw bales at garden centers and farm supply stores.

It will take at least 10 days from setting up the bales before they can be planted because they need to be "conditioned" first. This is done by watering and fertilizing the bales to start decomposing the straw, a process that makes nitrogen and other nutrients available for plants to utilize.

You can plant almost anything in it that you would in an in-ground garden or container garden, including root crops such as beets, potatoes, parsnips, and onions. Crops that are not worth growing in straw bales include corn, which requires too much space, and perennial vegetables like asparagus, since the straw bales disintegrate within a year or so. You can also grow or incorporate annual flowering plants such as marigolds and nasturtiums.

STARTING A STRAW BALE GARDEN

Place the bales where they will get sufficient sunlight, making sure the bales are aligned



so the twine or ties are on the sides and not on top; this helps the bale stay together. You might want to put the bales on top of some landscape fabric or, for a more refined look, put the bale into a large shallow planter or plastic storage box. “It’s best to set up with at least two people,” Schmeichel advises, “because the bales are heavier than they look, especially if they are wet.”

Next, you will need to condition the bales before they can be planted. Some sources recommend just watering the bales for the first three days before applying a high-nitrogen fertilizer—such as lawn fertilizer, blood meal, or well-composted chicken manure—to help start internal decomposition; other sources, including Karsten, suggest applying the fertilizer from the first day on.

If you opt to use granular fertilizers, sprinkle about a half cup on top of each bale. If you use liquid fertilizer, add one to three cups of solution. Just be sure the fertilizer does not contain any pesticides, and follow each application of fertilizer by watering until each bale is saturated. Keep up this process daily for about 10 days. During this time, the inside of each bale should heat up with bacterial activity to well over 115 degrees F. One sign this is happening is the appearance of mushrooms on the bales; they aren’t harmful (although they should not be considered edible) and should disappear once the bales cool. The time it takes for the bale to heat up may take several weeks longer, depending on weather conditions and the type of fertilizer you use—organic fertilizers seem to take longer than non-organic types—so 10 days is just a rough guideline.

After 10 days, just maintain watering so the bales stay moist. If you plan to sow seeds, you can start them at this point. If you plan to plant seedlings, check the inside of the bales to make sure it isn’t too hot for planting. Use a trowel to dig a hole in a bale and stick your hand in; if it feels barely warm, it’s ready to plant. Otherwise, wait a few days.

PLANTING AND MAINTAINING THE GARDEN

To plant the bales with seeds, spread a couple of inches of moist potting mix evenly on top of each bale, sow the seeds, and water thoroughly. If you are using transplants, dig a hole on top of each bale large enough to fit the rootballs, removing as much straw as necessary.



Top: Horticulture intern Megan Roozen helps plant the straw bales in April. **Note a soaker hose has been placed on top to facilitate watering. Above:** To plant a seedling, dig a hole with a trowel and remove some of the straw before inserting the plant. **If seedlings are grown in peat pots, remove the pots prior to planting to allow roots to grow more easily in the bales.**

Then pop the plant in, tamp it down, and water well. For most crops, you will be able to grow two to three plants on top of each bale. Smaller plants, such as herbs or annuals, can also be planted in the sides of the bale.

Large, sprawling crops such as indeterminate tomatoes and squash will need to be staked. Drive tall, sturdy stakes into the ground along one side of the bales and attach the plants to the stakes with twine or install trellising before planting. The supports will

RIVER FARM’S STRAW BALE GARDEN EXPERIMENT

At River Farm, headquarters of the American Horticultural Society (AHS) in Alexandria, Virginia, the goal is to offer inspiration to the visitors who come to enjoy its gardens, which are open to the public throughout the year. This year, it seemed fitting to create a straw bale demonstration garden to introduce the technique to the uninitiated. “It’s all well and good to read about it in a book, but quite different to see how it works in real life,” says AHS horticulturist Sylvia Schmeichel. “Straw bale gardening isn’t something you see everywhere, so it did draw a lot of interest from people who saw it.”

With the help of horticulture intern Megan Roozen, Schmeichel planted a straw bale garden this past spring to try out the technique. Here’s how the experiment fared from start to finish.

THE SETUP

The River Farm straw bale garden was set up as two U-shaped “beds,” each made of 10 individual bales in a 20-by-20-foot area covered with landscape fabric to suppress weeds and enclosed by a 10-foot-tall deer fence. The bales, donated by a local organization that had used them for a fall festival, spent a winter outdoors before being planted in April.

Schmeichel conditioned the bales for two weeks with a high-nitrogen granular fertilizer. The best tool to determine if the bales are ready to plant, she suggests, is your hand. “The straw at the surface of the bale should feel wet and loose enough to pull tufts out fairly easily,” she says. “If you can’t get your hand through the straw, the roots of plants will have a hard time as well.”

The bales were planted with lettuce, kale, Swiss chard, and beans from seed. Schmeichel used established seed-

lings of watermelons, tomatoes, peppers, artichokes, okra, birdhouse gourds, and various herbs. She set up a drip irrigation hose on top of the bales to make watering more efficient.

DURING THE GROWING SEASON

Although the seeded plants did germinate, Schmeichel says, “We had a varmint problem—most likely squirrels and ground-hogs—so most of the sprouts got eaten repeatedly.” The transplants fared better, especially the birdhouse gourds, watermel-

ons, and okra, which yielded an abundant harvest. Schmeichel adds, “The tomatoes would have been more productive if they hadn’t suffered from late blight.”

Minor pest and disease problems were treated using organic methods such as insecticidal soap. Schmeichel also noted, “After the initial application of fertilizer to prep the bales for planting, we really had little need to add more.”

SEASON’S END

After a final harvest in mid-September, the bales were broken up and compost-

ed. Over all, Schmeichel was pleased with the straw bale experience and River Farm visitors frequently asked questions about it.

“Compared to in-ground beds, it was nice to not have to bend over as much to harvest,” she says. “Because we arranged the bales abutting each other, we were able to successfully use drip irrigation hoses and a timer to minimize labor.” Next time, however, she would do a few things differently. “In hindsight,” she says, “I wouldn’t have let the bales weather for so long before planting, because towards the end of summer, they started to fall apart. Also I would start earlier in the season with cool-weather crops such as lettuce and spinach.” —M.Y.



Okra, planted as seedlings, thrive in River Farm’s straw bale garden.

also help prevent the bales from sagging too much as they continue to decompose.

To make watering easier, lay a soaker hose on top of a row of bales, securing it with large U-shaped pins, the kind usually used for anchoring landscape fabric to the ground. “With drip irrigation,” says Schmeichel, “everything on that line gets watered the same amount, so group plants with similar watering requirements on the same lines—don’t place thirsty, established tomato plants with lettuce seeds.” Attaching a timer to the

hose is a good way to automate watering.

Keep the bales watered and apply fertilizer according to product instructions throughout the growing season. If any weeds start growing on the bale, they are easily removed. Harvest from the straw bales as you would in any garden.

With a new year around the corner, you might want to make a resolution to try straw bale gardening yourself.

Mary Yee is Managing Editor and Art Director for The American Gardener.

Resources

Straw Bale Gardens by Joel Karsten. Cool Springs Press, Minneapolis, MN, 2013.

A search online will provide a wealth of information on straw bale gardening from Extension Services, along with first-hand accounts from garden bloggers who have tried it for themselves.