



Straw Bale Culture

Salad Greens growing in straw bales were featured in our display garden at the 2004 Northwest Flower and Garden Show in Seattle. I designed this vegetable garden to promote Plant A Row For The Hungry, a project of the Garden Writers Association. Over 75,000 people visited this five day gardening extravaganza to see beautiful gardens, attend lectures, shop, and learn new gardening techniques.

Our garden, constructed and prepared by fellow GWA members, Pierce County Washington Master Gardeners and Lake Washington Technical College students, friends and family earned a gold medal and the prestigious "People's Choice" award. We featured a few ideas that you will see in our demonstration garden here at Nichols this summer. Foremost among these is gardening on straw bales. The old adage "necessity is the mother of invention" certainly applied, because all display gardens are required to have a kickboard or barrier separating the garden from the show floor. Hating to relinquish valuable planting space to a concrete or wood structure, I thought why not straw or hay bales?

I learned Dr. N.L. Mansour, retired from Oregon State University had done a research project on straw bale culture. He assured me this was an excellent medium for growing vegetables and offered several tips.

- 1: First purchase wheat straw bales, as they will be freest of weed seeds and have no perennial weeds. Give the bales a through soaking. They heat up when wet and the heat will potentially harm seedlings or transplants. If weather is warm you'll need to water more than once. After 5 to 7 days the bales will cool back down and you can begin planting. There will be some sprouting of wheat seeds, they can be pulled at any stage and in some instances ignored. They gave us an early green haze but then seemed to not put on much growth. Since I was growing salad greens I did one major cleanup of wheat seedlings. The bales can last for two seasons so it is important to purchase bales tied with synthetic twine.

2: Set bales with the strings wrapping horizontally and the straws set vertically which I think allows better root penetration. Once the bales are wet they will be extremely heavy so place them before soaking. How many bales do you want to place together? It really depends on your growing space. You can place a single row end to end to make a boundary in your garden or make a table of several bales grouped together. As you begin planting and harvesting you will suddenly discover this is a nice ergonomic technique for backs that are not growing younger and more supple. Also it is a good height for wheel chair gardening.

3: When the bales cooled, I roughed up the surface with a three-tined hand fork. I wasn't trying to dig grooves but wanted a rough surface to top-dress with 3-" of compost. This top-dressing is your seed bed and should have fine crumbly texture. A commercial bagged potting soil will also work if you don't have compost.

4. What can you grow? According to Dr. Mansour, bales will grow a wide variety of vegetable crops including, tomatoes, cucumbers, peppers and greens. I am now experimenting with various salad greens, and two types of peas. The peas were planted with an inoculant so they won't need supplemental nitrogen. Later this season I plan to try tomatoes, cucumbers, squash and other crops and will report my experiences with photos and comments. I also plan to seed in a few nasturtiums, our favorite edible flower, and think they will look very pretty dangling over the side. Root crops, such as carrots, parsnips and onions don't seem like good candidates for straw bale culture because the roots will be too crowded by the straw and would be hard to harvest. I also would not recommend corn or pole beans. Annual herbs such as cilantro, basil, parsley and chervil should all thrive. Mixed salad greens and mesclun blends will do well, sow sparingly and then plan to resow every few weeks.

5. How to transplant. Small transplants will be easier to handle than large. A good sharp trowel will penetrate the bale and allow you to pull back sharply creating a space to drop in a transplant. If it seems to tight go ahead and hollow it out a little and add more compost. This is what you'll need to do with larger tomatoes, peppers and eggplants. I'd suggest no more than two tomatoes per bale and no more than three pepper plants. Transplants, such as a seedling tray of lettuce or kale are easily transplanted into the seed bed.

6. What about watering. I will use an inexpensive system of drip irrigation and periodically give the bales a thorough drenching. I have some concern about the bales becoming too dry in summer without a drip system or at least a soaker hose laid upside down.

7. Is fertilizing necessary? I think some supplemental fertilizing promotes healthy plant development. I will alternate with applications of liquid seaweed, fish emulsion and compost tea. I've not found research that documents a natural approach so I'm relying on what I consider good gardening practices. It is also one that won't overload the plants with nitrogen.

8. The advantages of straw bales are many. If you have poor soil or excessive weeds, you can take an end run around some of the soil prep by planting on bales. When the bales are exhausted after one or two years remove the twine and let the straw cover the ground and start over with fresh bales or consider planting directly into the mound and moving to a no-till technique. Drainage is never a problem as it often is in heavy clay soils. A good population of worms will build up under the bales and they will help condition your soil. The parking strip is often the sunniest spot for many gardeners but poor soil and animal waste can make this less than desirable for food gardening. Bales may be the solution. If you are

concerned about how attractive they will appear, sow some white alyssum and tuck in a few marigolds around the base. Sow nasturtiums on the corners of the bales. Make your planting colorful, with Bright Lights Swiss Chard, Merlot Lettuce, Emerald Oak Lettuce and perhaps a cucumber such as Fanfare or Lemon spilling a few fruits over the side. An adjacent bale can have the same skirting of alyssum and marigolds, a repeat of the nasturtiums but could feature a pepper and a tomato plant along with some basil and parsley. No one will complain about your aesthetics but they may hope to be invited to dinner.