

Straw Bales as a Planting Medium

Abstract

The childhood obesity epidemic in America is a national health crisis (Let's Move, 2008). Areas across the nation exist with low access to healthy food by either being low income or more than a mile from a supermarket. Gardening has become a popular route to provide access to healthy foods. However, arid conditions and poor soils in the Southwest contribute to an on-going and challenging effort to grow fresh food supplies. To alleviate these problems, Extension agents teach that straw bale gardens offer an easy planting medium with multiple advantages.

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Introduction

The childhood obesity epidemic in America is a national health crisis (Let's Move, 2008). Areas across the nation exist more than a mile from a supermarket or are occupied by low-income populations, both resulting in low access to healthy food. The number of these food deserts is staggering, numbering 410 counties (where 100% of the population qualifies) and low access counties (where 50% of the population qualifies) totaling 803 counties (Ohri-Vachaspati, Masi, Taggart, Konen, & Kerrigan, 2009; Morton & Blanchard, 2007). Gardening is a useful route to providing access to healthy foods, and Extension agents stand in a position to educate schools, families, and communities on low-cost, effective methods of achieving successful gardens. However, arid conditions and poor soils in the Southwest create an ongoing challenge to growing fresh food supplies. To alleviate these problems, the use of straw bale gardens offers an easy planting medium. The following describes steps Extension agents can use when demonstrating a straw bale garden and some of the advantages they offer.

Why Straw Bales?

Straw bale gardens are useful for home, school, and community garden projects. Extension agents have found the system particularly useful for teaching gardening skills to both youth and adults, including the handicapped (Tessman & Gressley, 2011). Sitting upon the surface of the soil, straw bales provide a working surface that sits 24 to 30 inches above ground, a benefit to those who may be suffering from balance problems or other physical handicaps. It allows children to work on their

feet without the need to sit or crawl directly in mud or soil. In addition, straw bale garden height discourages nibbling from small mammals, such as ground squirrels and rabbits.

When Extension agents teach about "no till" gardening methods, straw bale gardening is a viable option. "No till" methods are a good choice for people with rocky soil or even for the elderly or disabled. Gardeners plant seeds or bedding plants directly into the treated straw bale.

Why Not Timothy, Alfalfa, or Grass?

Straw, the stem of a grain plant (typically oat, barley, or wheat), has few seeds in the bale because most are removed in the harvesting process. Hay bales (like alfalfa, timothy, or mixed bales) are cut to include seeds, leaves, and stems. Wheat straw bales are preferred as they 1) harbor very few seeds and 2) are easy to find at local feed stores or from local farmers. Using straw bales reduces greatly the number of weeds growing from the bale. When weeds do grow, snip them with a scissors.

Getting Started

Once the bales for the garden have been chosen, they should be placed with the bands pointing out toward the sides. Take into consideration that one bale will hold approximately two tomatoes or three peppers or one to two squash plants. Corn plants can be too top heavy, and root vegetables are also not recommended because they are difficult to harvest without destroying the bale. Follow preparation guidelines in Table 1 before seeding or inserting slips into bales.

Extension agents can create "mini" straw bale gardens with craft-sized straw bales that can be used for demonstrations at various locations. By using the same treatment process, herbs can be planted in the "mini" bales from seeds or slips and grown in a window. A new bale can be planted at each lesson and the entire herb garden transported as a living example. Workshop participants can go home with their own "mini" straw bale that is planted and ready to grow.

Table 1.
Preparation Process for Straw Bales

Organic	Commercial Fertilizer
<i>Supplies:</i> Two cups blood meal, fish emulsion or compost/manure tea per bale. Water to saturate bale each day.	<i>Supplies:</i> 1/4 -1/2 cup high nitrogen fertilizer (30-0-0, or Ammonium Sulfate) per bale for three days. 1/4-1/2 cup of 10-10-10 fertilizer per bale for three days. Water to saturate bale each day.
<i>Directions:</i> Soak bale with water and keep wet for three days. On day four add blood meal, fish emulsion, or compost/manure tea per bale. Soak	<i>Directions:</i> On days one-three, sprinkle 1/4-1/2 cup of 30-0-0 or Ammonium Sulfate onto bales. Soak with water. On days four-six, sprinkle

amendments into the bale. This will cause heat inside the bale. Let bale cool for two-three weeks before planting.	¼-½ cup of 10-10-10 fertilizer per bale. Soak with water. On days seven-ten soak bales with water. Plant on day 11.
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Planting

Once the bales have been treated, plant. For bedding plants, a hole is dug in the bale a little larger than the size of the root ball. The empty places around the plant can be filled with the straw that came out of the hole. Bales can be top dressed with 2"-3" of potting soil or compost to slow the evaporation of water from the bale and covered with a soaker hose to slow the rate of sun deterioration on a plastic hose. When planting seeds, simply dress the bale as described, and plant the seeds in the soil. A small amount of 10-10-10 fertilizer and daily watering will get them growing in a few days. Fertilize monthly to maintain growth.

Watering the Bales

The straw bale garden should be irrigated as needed. For best results, test for moisture content by sticking a finger into the bale about 3"-5" to feel for wetness. It should feel like a wrung out sponge. Unprotected straw bales tend to dry quickly, not only from transpiration of plants, but also from evaporation as capillary action pulls moisture towards the exposed edges of the bales. Evaporation can be minimized by lining the exposed bale surfaces with metal roofing, discarded plywood, or black plastic coatings. If metal flashing is used, it is important to protect from injury by covering the edges of the exposed metal with old drip tubing or garden hose split longitudinally to allow placement onto the metal edge and gluing firmly into place.

Conclusions

Straw bale gardening provides a simple planting medium. It is a quick and easy way to create raised garden plots that can lead to universal access to healthy food. Extension can aid in improving access to healthy food by educating the public regarding how to grow healthy, fresh food themselves. Straw bale gardens are a way to empower youth and adults with the knowledge to grow healthy fruits and vegetables in their own communities.

References

Let's move! (2008). Retrieved from: <http://www.letsmove.gov>

Morton, L. W., & Blanchard, T., (2007). Starved for access: Life in rural America. *Rural Sociological Society*, 1[4].

Ohri-Vachaspati, P., Masi, B., Taggart, M., Konen, J., & Kerrigan, J. (2009). City fresh: A local collaboration of food equity. *Journal of Extension* [On-line], 47(6) Article 6FEA1. Available at: <http://www.joe.org/joe/2009december/a1.php>

Tessman, D., & Gressley, K., (2011). Making youth gardens grow with captured rainwater . . . and

video. *Journal of Extension* [On-line], 49(4) Article 4IAW2. Available at:

<http://www.joe.org/joe/2011august/iw2.php>

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