Creating Straw Bales

Step by Step Installation

Straw bales are a good option to start a garden, they are affordable and flexible. They are also sustainable because after they serve as planting beds, they can be reused as mulch or compost.

Materials and Tools Needed:
Installation requires 30 minutes and one individual to assemble (Figure 2).
- Clippers
- A hand trowel
- A garden hose
- Straw Bale(s)
- Compost
- Fertilizer high in nitrogen
- Seeds or seedlings
* Annual flowers, fruit, and vegetables are best.

Hay vs. Straw
Be sure the bales are straw and not hay. Hay bales sprout weeds, along with what is intended to grow in the bale garden. Straw, unlike hay, do not contain seeds. In addition, hay bales are grown and sold as livestock feed which can contain Timothy and Alfalfa seeds, causing it to sprout plants when wet.

It is best to try to buy organic straw bales because some manufacturers use pesticide and insecticide to counteract potential crop and/or livestock diseases, and those chemicals may remain in the bales.

1. When to Plant and Harvest
Based upon desired plant, take note of which season(s) is best for planting and harvesting in your region. For simple directions on how to grow childcare production gardens, use the childcare center production gardens publications to produce best results in North Carolina. For other regions, consult the local Extension Office.

2. Determine Location
The placement of the straw bale is important. Place bales in a sunny spot on concrete, asphalt, gravel, dirt, sand, or any other ground surface. It is recommended that they are provided with at least 6 hours of sun per day if possible. Pay close attention to the seed/seedling packaging directions of the desired plant to choose the location of your bale garden. Amounts of sun and/or shade needs vary among plants.

3. Twine Bindings
Leave bindings on straw bales. Bindings provides structure and a barrier against elements that may be harmful the plant's growth and development.

4. Water Source
It is important to place straw bale garden near a water source. This will be key during the conditioning process as well as watering bale garden throughout plant’s growing season.

Figure 1 - Finished straw bale gardens.

Figure 2 - Materials needed to create a straw bale garden.
5. Conditioning Bales (optional)
Before planting in bales, condition the soil at least two weeks before use. Keep in mind once placed in designated area, bales will be too heavy to move.
- For two weeks:
  Water bale thoroughly, until water runs out the bottom of the bale. Keep in mind, by thoroughly soaking the straw bales, the internal temperature will rise. The temperature produces basic nutrient, generate insulation, and promote root growth. When bales are still warm (not hot) planting can begin.

6. Bale Preparation and Planting
Cut holes approximately 6” X 6” holes in the top of each bale (4-6 per bale). Spacing and plant number will depend on plant variety. Garden clippers work best through the straw (adults only). Make sure to keep sharp objects out of reach of children during this project. (For planting seeds, read the “For seed growth” portion of this section) (Figure 3).
- For seedling growth
  Cut a hole about the size of the container of the plant. Fill the hole with compost and add a organic fertilizer that is high in nitrogen (e.g. fish meal). Plant the seedling root-side down. Pay careful attention on not tugging or manipulating the plant by the stem.
- For seed growth
  Spread a 2” layer of compost or moistened, peat-based potting soil mixed with organic fertilizer that is high in nitrogen (e.g. fish meal) on the top of the bale. Tamp soil down, making it smooth and water lightly. Plant seed at the recommended depth and spacing. Make sure to water regularly during germination period. Note: Try to avoid soils that retain high moisture to avoid waterlog.

7. Spacing and Plant Quantities in Straw Bales
When planting vegetables, herbs, plants and/or flowers, pay close attention to planting/harvesting instructions on packaging.
Suggestion: number of plants per bale
- Tomatoes: 1 plants per bale
- Peppers: 2 plants per bale
- Squash: 1 plants per bale
- Zucchini: 1 plants per bale
- Cucumbers: 2 plants per bale
- Strawberries: 3-4 plants per bale

8. Watering Straw Bale Garden
Keep the straw bale well-watered. Straw bale gardening requires more water than traditional gardens. Frequent watering will help keep bales from drying out in the sun.

9. Longevity
Be selective when choosing type of plants to grow. Large growing tomatoes or corn can cause the bales to tip over. Smaller growing tomato plants such as cherry or grape tomatoes will need a tomato cages for support and stability (Figure 4).

Decomposition is common when using straw bales for gardening. It is important to remember that although straw bales are economically friendly and easy to manage, they are temporary. One or two seasons of using each straw bale for gardening is recommended. Once the straw bale begins to decompose, you can use the straw as mulch or compost in other garden areas.

Additional resources:
- Straw Bale and Pallet Gardening
- Straw Bale Gardening, Washington University Extension fact sheet

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Creating environments for healthy human development and a healthy biosphere for generations to come.

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