



Christopher
Sanchez

City of Austin
Parks &
Recreation
Department

Zilker Botanical Garden |
Wildlife Austin |
Community Gardens

Straw Bale Gardening



Zilker Botanical Garden
Austin Area Garden Center

Credit: homegrown.org



Rather than planting in the soil, plant directly into the bale.

Benefits:

- Compacted, contaminated, or lack of soil
- Less weeding, insects, disease, watering, & resources (soil) to build bed
- Raised Height

VIRGIN SOIL

The inside of the bale transforms into new soil, preventing:

Disease
There is no carryover of the disease or fungal spores that often remain in soil from season to season.

Insects
Over the winter, many insects stay dormant in existing soil and attack plant roots the following spring.

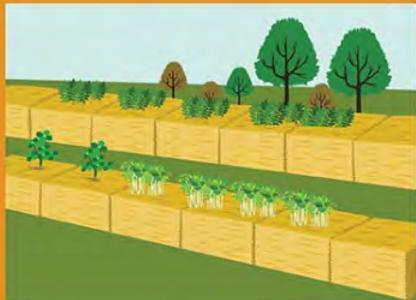
Weeds
Conventional soil generally contains thousands of weed seeds. Straw bales do not.

RAISED HEIGHT



The physical requirements to maintain a soil garden can become limiting.

With the raised height of the bales, there is less of a need to bend over.



Once the bales are positioned, the physical part of the straw bale garden is complete.

Other benefits:

- Extended Planting season
- Produces heat- great for greenhouses
- Builds fertility- nutrient rich mulch
- Ease of root vegetable harvest





Credit (L): <http://www.honeybeesuite.com/tag/pollinator-garden/>

Credit (R): www.dreamstime.com

Straw, not hay

Straw is hollow and comes from cereal grains

Hay comes from grasses

Credit: <https://en.wikipedia.org>

Barley, Oats, Rye, & Wheat

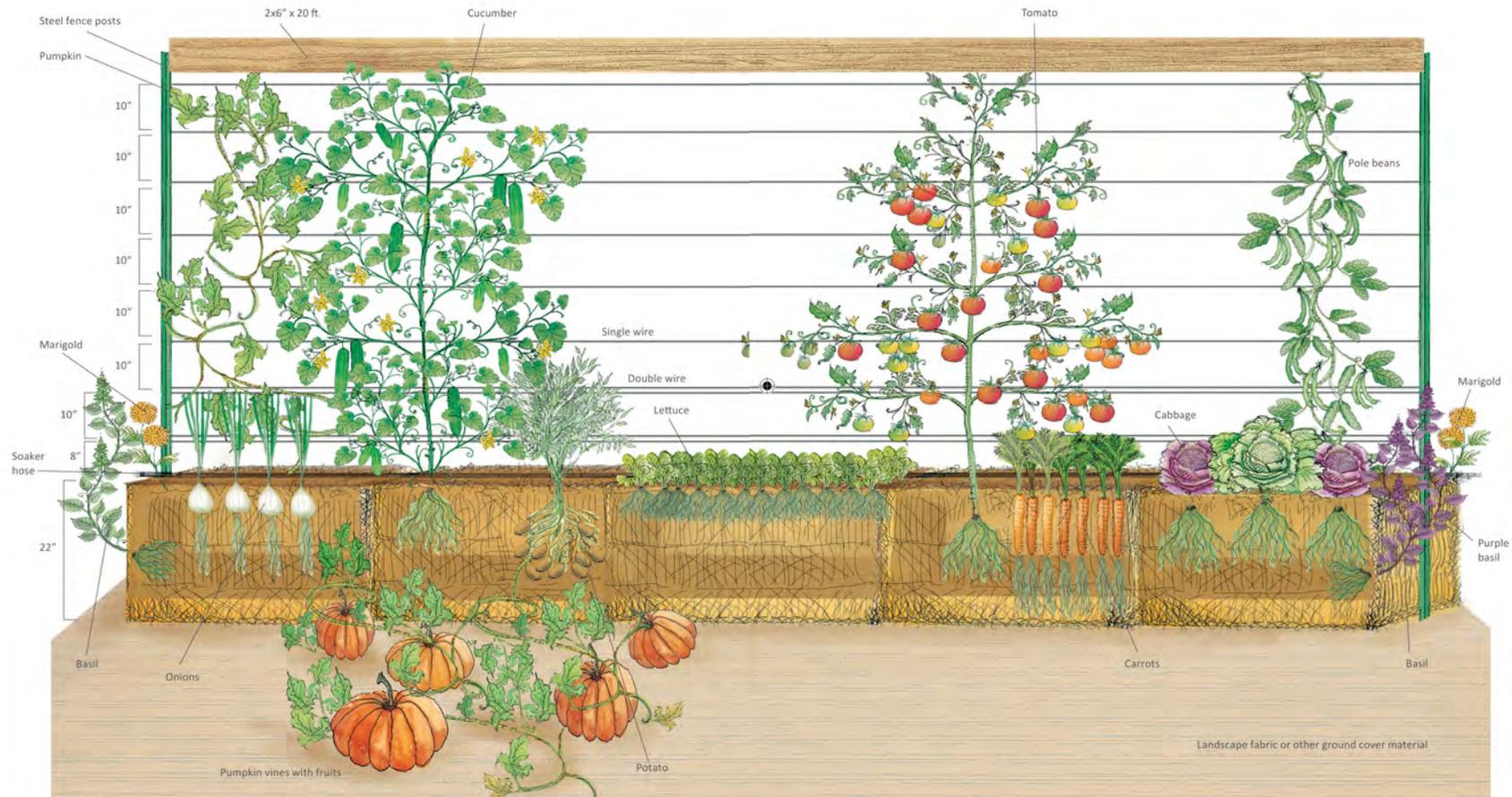
Historic and Modern Uses:

- Animal Feed
- Basketry- bee skeps
- Crafts
- Corn Dollies
- Erosion Control
- Hats
- Packaging
- Paper
- Rope
- Shoes- Korea, Germany
- Targets
- Thatching



- Construction material- bind clay and concrete in cob, straw bale houses, composite lumber, Enviroboard, etc.
- Biogas (Aarhus University, Denmark) & Biofuels (briquettes)
- Biomass- mulch & biomass power plants in EU
- Bedding- human & animal)
- Horticulture- mulch, strawberries, protect trees in Japan, ponds to control algae, mushroom cultivation, etc.

Cross-section of a Straw Bale Garden (5-Bale)



Credit (L): strawbalegardens.com Credit (R): modernfarmer.com

86

Materials:

- Straw Bales (not sprayed)
- Two T-posts per row
- Wire & Twine
- Optional 2"x6"x length
- Nitrogen Source



STRAW BALE GARDENING TIPS

Get your straw in the fall



Easiest to source straw in the fall



Arrange straw bale garden before winter to be ready to plant in spring



Source straw straight from local farmer so you know how it was grown

Position your bales correctly



Lay down landscape fabric to prevent weeds from growing through bales



Place bales where you want them before conditioning process (they'll be much heavier after)



Arrange bales side by side in rows with cut sides facing up



Strings that hold bales together should run across the sides (not the planting surface) to help keep bales together during planting season

Give your straw plenty of nutrients



Choose a fertilizer with a minimum of 5% active nitrogen content.



Use blood meal or feather meal to condition the bales organically; it will require about six times as much volume.



Look for blood meal at a farm supply store where it will be less expensive.

- Arrange in location and set in place for good- bales will triple in weight once watered
- Can place in a raised bed or on pallets to facilitate access and/ or stability
- Place bales upside down with cut side facing up

Credit: www.mirror.co.uk



HOW TO CONDITION A STRAW BALE

DAY
1

Sprinkle the top of each bale with $\frac{1}{2}$ cup of a high nitrogen fertilizer. Then water the bale.



DAY
2

Water the bales again.



DAY
3

Add $\frac{1}{2}$ cup fertilizer to each bale. Water.



DAY
4

Water. It should take less water now to get the bales fully saturated.



Conditioning your bales:

- 12- 18 day process
- Intended to begin decomposition of internal structure
- Apply and work in organic nitrogen rich source such as coffee grounds, aquatic plants, compost, bloodmeal, etc. and water heavily

DAY 5

Add $\frac{1}{2}$ cup fertilizer to each bale. Water.



DAY 6

Water.

DAY 7-9

Use $\frac{3}{4}$ cup of fertilizer each day. Water. The bale should be heating up now.

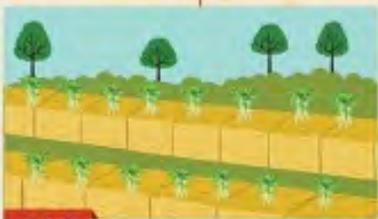
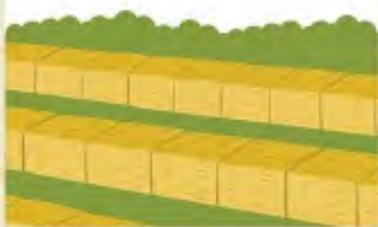


DAY 10

Sprinkle each bale with 1 cup of a balanced fertilizer and water.

DAY 11

Leave bales alone.



DAY 12

Ready to plant!



CONDITIONING DONE...
Ready for Planting

www.PreparednessMama.com



Ready to plant once below
100 degrees F

Credit (TL): preparednessmama.com

Credit (TR): bonnieplants.com

Credit (B): mynortherngarden.com

EXTENDED PLANTING SEASON



Rapidly growing and dividing bacteria in the straw heats up the bale.

While temperatures are too hot to plant for roughly 12 days, the residual warmth means gardeners can plant earlier in the season.



The extra boost of heat can lead to much faster root development, earlier flowering and fruit set, earlier fruit set, and ripened crops weeks before a traditional soil.



FEWER LOCATION LIMITATIONS



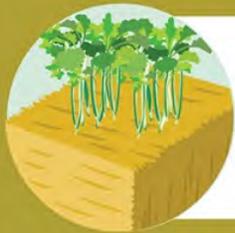
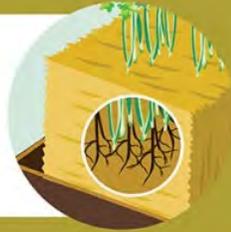
Straw bale gardens can thrive on asphalt and concrete, which means you can plant in a driveway or on a rooftop.

STRAW HOLDS MOISTURE



Cohesion allows a dry bale of straw to absorb and hold 3 to 5 gallons of water.

The moisture trapped in the bale provides a steady supply of water for the tiny developing root hairs.



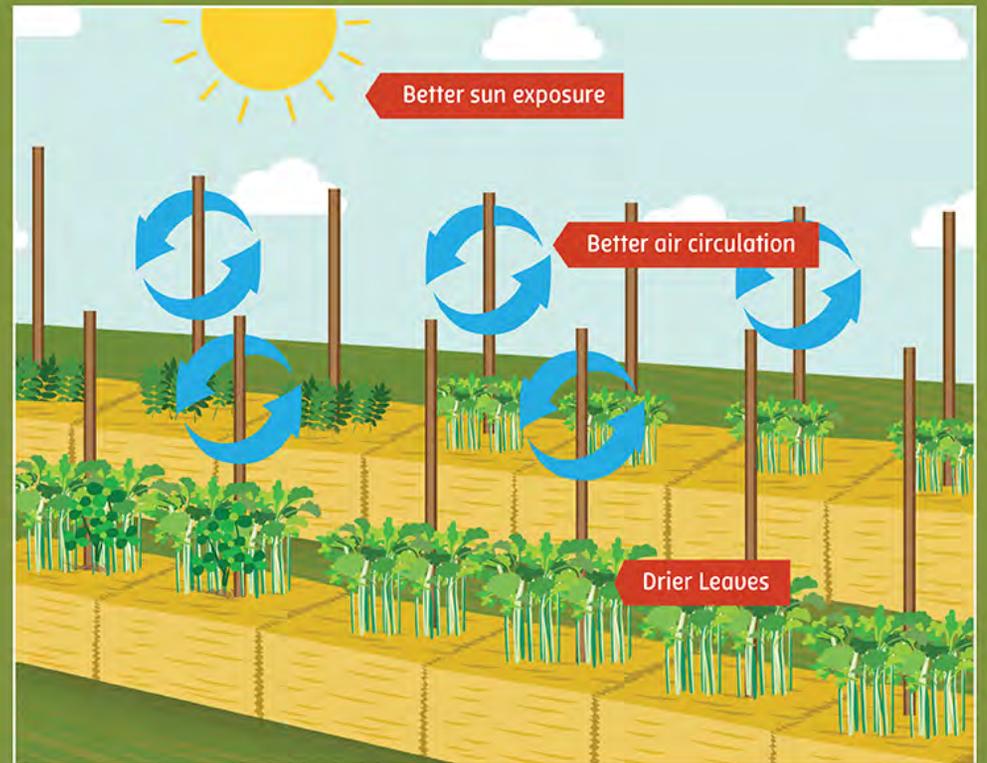
Once fully saturated, the bale won't hold another drop and cannot be overwatered.

Straw bales contain many air spaces between particles and inside stalks, which allows air exchange for roots.



ROOTS STAY WATERED WHILE LEAVES STAY DRY

A tall trellis encourages vines and climbers to crawl vertically above the bales which results in:





Credit (TL): www.feldoncentral.com

Credit (BR): www.telegraph.co.uk

Credit (TR) : www.amazon.com

Credit (BL): strawbalegardens.com

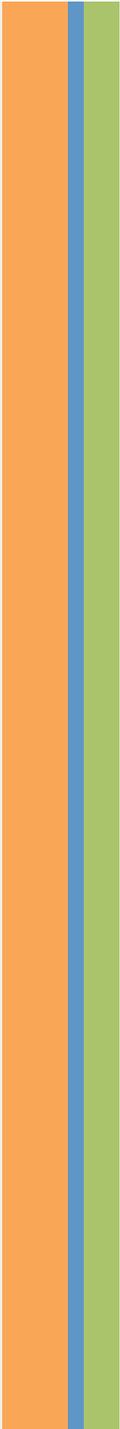


Credit (TR): www.pinterest.com

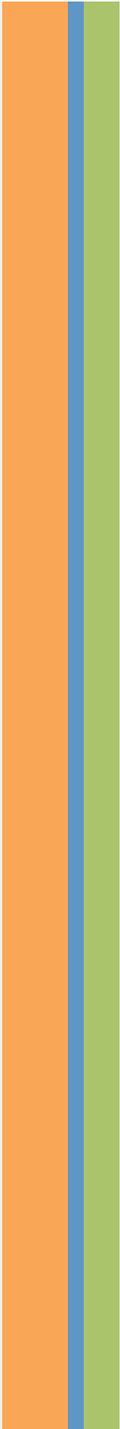
Credit (BL):
www.arlingtonartscenter.org

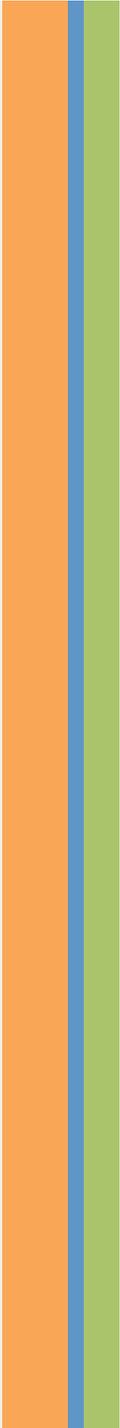
Credit (TL):
www.urbangardensweb.com













Bibliography:

<http://texashomeandgarden.com/idea-center/garden/straw-bale-gardening-bounty-by-the-bale/>

See our article in the Statesman:

<http://www.mystatesman.com/news/lifestyles/home-garden/home-matters-plant-in-the-straw-bale-local-black-f/npPqb/>

Visit our Straw Bale Garden in the Vegetable Garden at Zilker Botanical Garden

Thank you!

Questions?

Christopher Sanchez

512-477-8672 xt.13

Chris.Sanchez@austintexas.gov



City of Austin Parks & Recreation Department

Zilker Botanical Garden
Austin Area Garden Center

Zilker Botanical Garden | Wildlife Austin | Community Gardens