Do-It-Yourself Greenhouse Designed To Last

Instead of buying a cheaply-built greenhouse kit from a big box store, Nathaniel Burson suggests building your own with plans he has used for 15 years for himself and customers near Big Sandy, Texas.

His plans include a 40-pg. booklet and two DVD's with detailed instructions on how to build a 10 by 15-ft. greenhouse for about $600.

"This greenhouse is strong. It will last you for a long, long time," says Burson, who is also inventor of the Garden In A Barrel (Vol. 34, No. 2).

One testimonial of its strength comes from a customer in the Northeast, who recently told him their greenhouse survived Super Storm Sandy unscathed.

Burson's greenhouse design includes professional materials that should last at least 30 years: treated lumber on the ground, galvanized tubing (like the kind used on chain link fencing), galvanized electrical conduit and treated wood strips to secure greenhouse plastic.

He shows how to bend the tubing with a vise and a piece of pipe. He offers tips on stretching the plastic taut without wrinkles.

"Start from an anchor point," Burson says. "Start from one corner and pull from the opposite side, then slowly work your way around each edge. It took a long time to figure that out."

Plans include building a sturdy door, how to secure the greenhouse to the ground with 2-ft. T-posts, and where to purchase fans and vents and how to install them.

He emphasizes the importance of using genuine greenhouse plastic that is UV resistant and lasts about 4 years.

"The plastic is less than a third the price of fiberglass, and when you replace the plastic it looks new again. Fiberglass looks dingy after about a year," Burson says, regarding his preference for plastic over fiberglass. He adds that fiberglass also leaks air at the seams.

Anyone with basic construction skills can build a greenhouse in two or three days, Burson says. His plans can be easily adapted for larger greenhouses up to 12 by 50 ft., and larger sizes are cheaper per square foot to build. For example, the estimated cost to double the size to 10 by 30 ft. is $800, only $200 more than the standard size.

Burson also sells a kit with all the specialized hardware such as screws, bolts, UV-resistant plastic and the plans for $229 (10 by 15-ft.) and $329 (10 by 30-ft.) with free shipping. (He deducts the price of the plans if customers decide to order the hardware kit after buying just the plans).

Nathaniel Burson suggests building your own greenhouse with plans he has used for 15 years. "This greenhouse is strong. It will last for a long time," says Burson.

He adds that people interested in a sideline business can use the plans to build greenhouses to sell in their area. Plans sell for $29.95 plus $4.95 S&H.

Check out the website for videos of Burson's greenhouse.

Contact: FARM SHOW Followup, Pinnacle Switch Builders, Inc., 10758 Hwy. 155 S., Big Sandy, Texas 75755 (ph 903 576-6800; www.easiestgarden.com).

Solar-Powered Livestock Feeder

This new solar-powered feed cart releases pre-set amounts of feed on a desired schedule. Just fill it up, set the auto feeder and let it go.

"It makes feeding livestock in cold weather a lot easier," says John Ziegler, Solar Feeders.

Prices on the road-ready feed carts start at $2,950. They come with a removable tongue with the choice of a 2-in. ball or standard hitch pin. The removable tongue reduces the risk to livestock and the risk of theft.

The hopper, trough and base are made from heavy-duty, 12-ga. steel and are available in 3 standard sizes. The 1,000-lb. unit is designed to handle up to 10 head of cattle, 20 sheep or 40 goats. The 2,500-lb. feed cart is designed for twice that many livestock. The 6,000-lb. feeder has a tandem axle, electric brakes and highway lighting. It can handle up to 45 head at a time. The company also builds larger units with gooseneck hitches.

The automated feeder operates on a 12-volt system with a battery charged by solar panel. It has a low power draw and can run for up to two weeks without a solar charge. A vibrating motor attachment can be added for handling sticky feed.

When activated, feed drops onto a spinner plate that spreads it out across feed troughs mounted to the sides of the feed cart. Access to feed can be limited with optional drop-down creep panels on one or more sides. Panels can be raised by a powered wrench or with an optional 12-volt system.

Access to feed can be limited even more by adding the optional protective guards for use with goats and other climbers.

To see the Solar Feeder in action, visit www.FARMSHOW.com and click on videos.

Solar-powered feed cart releases pre-set amounts of feed on a desired schedule. Makes feeding livestock in cold weather a lot easier.

Contact: FARM SHOW Followup, John Ziegler, Solar Feeders, P.O. Box 8554, Fort Smith, Ark. 72902 (ph 479 648-0066; toll free 855 646-7123; John.Ziegler@SolarFeeders.com; www.solarfeeders.com).

Does Compost Heat Really Work?

Researcher Sam Gorton is confident composting for heat can pay off big. The University of Vermont graduate student has been evaluating compost heat systems and currently has two systems going in Vermont.

"Both are insulated with hay bales and set up to heat greenhouses," says Gorton. "Both are outfitted to measure water temperature and compost temperature at different depths. Based on my research, a realistic recovery estimate is 1,000 btu's per hour per ton of active compost for up to 6 months."

Gorton starts by laying down a foundation of wood chips for the compost mound. He then coils rigid plastic water pipe under 6 to 18-in. thick layers of compost. Once the pile is completed, a mixture of glycol/water or straight water is pumped through the pipes, collecting heat from the compost.

"The heated water can be pumped to an in-floor radiant heat system, fluid-to-air radiator panel or heat exchange system," says Gorton.

A proper compost mix is key to maximum heat production, advises Gorton. This includes the carbon-to-nitrogen ratio, moisture content, relative biodegradability, porosity (needed for air flow) and the physical shape.

"If you're interested in composting, the heat can be a free byproduct and potentially displace fossil fuels," says Gorton. "Before it can be used, the compost will likely have to be turned again and stabilized or cured after heat recovery is finished. Unfinished, compost can burn crops."

Gorton is coordinating his research efforts with Highfields Center for Composting, a Vermont non-profit. "They do compost consulting and offer free information on their website," he says. "We are trying to create a network of folks working on the concept."

He also recommends visiting the website for Agrilab Technologies (www.agrilabtech.com). Agrilab has installed an on-farm, air-based heat recovery system for a large dairy.

Other good sources include Cornell University's composting website and the On-Farm Composting Handbook from the Northeast Regional Agricultural Engineering Service.

Contact: FARM SHOW Followup, Sam Gorton, c/o R3 Fusion, Inc, 405 Jordan Rd., Troy, N.Y. 12180 (ph 518 496-4252; gortonsm@gmail.com) or Highfields Center for Composting, Attn: James McSweeney, P.O. Box 503, Hardwick, Vt. 05843 (ph 802 472-5138, ext. 201; james@highfieldscomposting.org; www.highfieldscomposting.org).

Hay bales provide a sturdy wall to contain compost and heat layered pipe coils. Project shown above was set up to heat a nearby greenhouse.

Coiled rigid black plastic water pipe is placed between layers of fresh compost (left). Thermometer probes measure water and compost temperature.