

3-Pt. "No Freeze" Fabric Roller

John Dansby, Rocky Mount, Virginia, says covering his large fruit and vegetable plots to protect them from frost used to be a real hassle, but he solved the problem with a tractor-mounted roller.

"I use a strong spun polyester-type synthetic material to cover my strawberries. It protects them from freezing at temperatures as cold as 20 degrees Fahrenheit, but lets air and water pass through.

"The material is 50 ft. wide, folded to a width of about 10 ft. and rolled up on a cardboard spool. Unrolling it and spreading it out was difficult. Rolling it back up after you'd used it was even worse," he says.

So Dansby sketched what he wanted and took it to a local fabricating shop where they produced it for him.

The roller/unroller mounts on his tractor 3-pt. hitch. "It's a steel frame that's about 12 ft. wide and extends back behind the rear wheels. It looks sort of like a big toilet paper holder," he explains.

Dansby's frame has a 2-in. cradle on both ends. A hand winch operated from the tractor seat allows him to disconnect the top link on the unroller and lower the back end of it to the ground. To load a spool of material onto it, he releases the top link and lowers the unroller. He inserts a 13-ft. length of 3-in. steel pipe through the cardboard tube and sets

the ends in the cradles. He then winches the frame back up and re-attaches the top link.

Rolling the fabric back up is easy, too. "It has a hand crank welded to one end of the steel pipe. The cardboard tubes aren't very sturdy, so we don't reuse them. Instead, we put a 10-ft. length of 3-in. inside dia. PVC pipe over the steel pipe and pin it in place on the roller with a bolt inserted through both the PVC and steel pipes. I fasten the end of the material to the PVC pipe in three or four places with duct tape. Then we just wind it up," he says.

Once the fabric is re-rolled, he covers it with black plastic, fastened on with duct tape and stores it. "It doesn't make as neat a roll as when it was new, but it gets it off the field and in a roll so we can store it and use it again," Dansby says.

He says if the material is wet, he can fasten it to the unroller and pull it off the field to a grassy area to dry before rolling it up again.

"I thought about using a hydraulic cylinder in place of the hand winch, and I may still put a hydraulic motor on the crank to make it easier to pick up the plastic," he says. "But it works great as it is and saves us a lot of time."

Contact: FARM SHOW Followup, John Dansby, 4481 Colonial Turnpike, Rocky Mount, Va. 24151 (ph 540 576-3658).



Tractor-mounted roller makes it easy to roll up wide sheets of plastic covering crop.



Once the plastic is re-rolled, he covers it up to prevent deterioration from sunlight.



By covering these mulched fields of berries, Dansby can prevent freezing at temperatures as cold as 20 degrees.

Portable Sail-Type Windmill

Robert Green doesn't need a tower for his horizontal windmill. He doesn't need a bunch of gears or blades. He doesn't even need much wind.

"It only takes 3 to 5 mph wind to turn it," he says.

Green, a retired mechanical engineer, designed his horizontal windmill using collapsible sails instead of blades. Instead of a tower, the sails ride atop a slender pole. As it turns, it transfers power directly to ground level through an internal rod. The external tube serves as both a vertical support and an anchoring point for guy wires.

The simple design means it can be erected in a matter of minutes wherever it's needed. Green has used it for pumping water and air on site and has even developed a unique, low-load pump to use with it.

"It can be set up by a pond that needs to be aerated or in the center of a flooded field to pump away excess water," says Green.

The novel windmill uses four opposing sails on a wheel and spoke framework atop the pole. As each sail moves into the wind, it opens up like the sail of a sailboat, driving the wheel around the pole. As one sail fills, it pulls against cables on an opposing sail, keeping it tightly closed.

The closed sail, which resembles a wing on an airplane, also captures the power of the wind. Just as the different amounts of air pressure lift the wing of an airplane, the air moving across the closed sail creates lift. It also drives the wheel. As the wheel turns into the wind, the process is repeated by each pair of sails.

"Traditional windmills are drag windmills, while new propeller windmills are lift windmills," explains Green. "This is sort of in between."

He hasn't adapted the device for electrical generation. "I am not an electrical engineer, that's not my field," admits Green, though he is confident the design could work if someone had the expertise.

Green sees his system first and foremost as a ready form of mechanical energy that can be adapted as needed. He doesn't sell the windmill itself, but does market plans and rotor kits. He offers hardware kits for 24- and



Easy-to-use portable windmill uses collapsible sails instead of blades to generate mechanical power.

48-in. rotors at \$59 and \$118 plus shipping.

Green reports selling several hundred packages. Many have gone to Asia, India and other lesser developed countries. In the U.S., they have proven most popular in the West and Southwest.

"What I am offering is a formula for making this kind of windmill," he says. "They can take it from there and make whatever they want from it."

Contact: FARM SHOW Followup, Robert Green, 1222 W. Grand Ave., Chicago, Ill. 60622 (ph 312 226-7584; website: www.greenwindmill.com).

Sens-Alert Tells Growers When Hay Is Ready To Bale

Western hay producers must often wait for dew to dampen alfalfa crops in order to minimize losses during baling.

"My sister owns an alfalfa ranch in Oregon, and she would sleep in her pickup in the field so she'd know when the dew was heavy enough that she could bale," says Martin Lilly, Goleta, California.

Lilly figured his sister and other alfalfa growers could get a decent night's sleep if he could put moisture sensors in their hay fields that would alert them when conditions were right for baling. He happened to work for a company, Dynason, Inc., that makes various electronic sensing devices.

After several years of work, Lilly came up with a product called Sens-Alert, which can reliably detect dewfall and send a message on a mobile radio, cell phone or pager.

Lilly says each of his Sens-Alert systems is custom built for the owner. "In addition to alerting the hay producer that field conditions are right for baling, we can design the system so that the producer can dial up the system on his cell phone and get a report on current field conditions. And we can add a feature that allows him to use his phone to switch on a beacon on the unit, so he can easily find it when he arrives at the field in the middle of the night to begin baling. This one is important because some people have been known to lose track of where they placed the unit," he says.

While Sens-Alert was designed for Western hay growers, Lilly says he can adapt the units to monitor temperatures in fields (needed to track development of certain pest insects), soil moisture conditions, moisture and temperature in stored grain, and more. "We can equip them with motion sensors to detect intruders and then notify farmers or law enforcement officials," he says.

He says a possible application would be to monitor grain moisture in batch drying bins, enabling producers to know exactly when grain can be moved to storage and the bin



Mobile alert system can be adapted to many other uses.

can be refilled.

Another application he's recently worked on is in conjunction with a switch on a gate, so if the gate is opened without authorization, the system calls the farmer and the sheriff's office. "This was designed by a hay grower who was having problems with theft of baled hay," he says.

"I've been approached to design a system that will notify dairymen when their hay has wilted enough to chop for haylage," he says. "I haven't had time to find the right sensors and test them for this, but it is possible."

Price for a Sens-Alert system varies according to the application and the different bells and whistles incorporated into it. However, a system with notification by cell phone usually costs between \$1,500 and \$2,000. A typical system weighs less than 20 lbs.

Contact: FARM SHOW Followup, Martin Lilly, Dynasen Inc., 20 Arnold Place, Goleta, Calif. 93117 (ph 805 964-4410; fax 805 967-2824; email: dynasen@concentric.net; website: www.dynasen.com).