

## Solar Power Cuts Irrigation Costs

Setting up a solar array in an irrigated field is catching on as a way to reduce electric costs. Michael Shonka is putting in systems in Nebraska and surrounding states. He has worked with solar energy for 30 years and says there has never been a better time to go solar.

“Solar power has become much more cost effective in the past 10 years,” says Shonka. “The farmers putting these systems in don’t power the wellhead or the pivot directly. Instead, they produce energy all year round and then draw down earned credits when they start pumping water.”

Shonka points to the first solar system he put in an irrigated field. Although only a 25 kW system, it produced 40 kW hours in the first year, which was about 13 percent above what was expected.

“The past few years have been wetter than normal, and the typical farmer with solar has

received a check at the end of the year,” says Shonka.

Shonka notes that irrigators using electric power for their rigs already have a power line in place so it’s easy to connect to the solar array. When siting panels, he places them at field edges to minimize the impact on production.

He expects demand to increase if commodity prices increase. At this point there are fewer farmers who can use a tax credit or depreciation. However, the cost of photovoltaic solar has never been better.

“Prices have come down considerably,” he says. “A 25 kW array cost \$75,000 when it was put up a few years ago,” he recalls. “Today it would be \$60,000 before tax credits or other incentives.”

He points out that current tax credits are good through 2018. They decrease by 5 percent each year after that and end in 2020.



“Solar power has become much more cost effective in the past 10 years,” says Michael Shonka, who installs systems for irrigators in Nebraska and surrounding states.

“Those who bought early are still coming out ahead, even with the higher installation prices,” says Shonka.

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## Japanese Beetle Trap Catches ‘Em By The Bucketful

By Klaire Howerton

Like many other home gardeners and landscapers, Dave Taylor of Springfield, Missouri, purchased several Japanese beetle traps to place in his yard when he noticed the shiny shelled bugs starting to appear in droves. But after having to empty the traps almost hourly throughout the day after their installation, he decided to build a trap that would hold far more beetles than the conventional bags. Now he collects the bugs in 5-gal. buckets.

Taylor’s trap consists of a plastic bucket with a lid, a 1-in. pvc thread slip coupler, a metal threaded washer, a 3-in. section of 1-in. pvc pipe, a large funnel, and the beetle attractant that comes with store-bought traps.

To assemble the trap, a hole was drilled in the lid of the bucket to accommodate the coupler; the coupler was then secured with the large metal threaded washer, and the lid placed on the bucket. Next, one end of the 3-in. section of pipe was heated to a pliable point, and slipped over the funnel spout – the pipe hardened as it cooled, forming a secure seal around the funnel. The pipe and attached funnel were then inserted into the coupler on the bucket lid. The last step was hot gluing the attractant to the funnel.

The Japanese Beetles are drawn to the attractant. Once they land, they fall down the funnel and into the bucket, with no means of



Home-built trap collects Japanese beetles in a 5-gal. bucket using a funnel with an attractant hot glued onto it.

escape. Once the bucket is full, Dave simply takes off the lid to dispose of the dead beetles and places the trap back in his yard. The traps store easily for the winter, and the attractant can easily be replaced when needed.



U-shaped panel is placed on pickup bed (left). After animal is in pickup, the 2 loose panel ends are pulled together. Cage is then tied to stake hole inserts.



## Cattle Panel Pickup Cage

Robert Hackenberg’s cattle panel cage is a simple solution to the problem of hauling an animal or two in the back of a pickup. He got the idea when transporting two French Alpine goats to another farm to be bred. He searched the internet for cage ideas and found one that required cutting up a 16-ft. wire cattle panel. But once he started working on it, he found an even simpler design.

He shared the idea in Mother Earth News magazine. “We stood the panel up and formed a U-shape that fit perfectly into the truck bed. It struck me that I could put the goats into the space formed by the U and then pull the two loose ends together,” he wrote.

His Ford F-150 pickup has stake hole

inserts for tiedowns, so he secured the cage to them with rope. After putting the goats inside, he closed the opening with another piece of rope.

Hackenberg loosely tied up the goats by running their leashes to the outside of the wire and then back inside and snapped the leashes to their collars. Though he expected the goats to lie down, they stood and “watched the countryside” for the entire 40-mile trip.

The cage stayed secure and worked out well, Hackenberg says.

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## Twin-Wall Greenhouse Cover Outperforms Poly

Flexible, twin-wall Solexx makes it easy to cover a new greenhouse or recover an old one. The high-density polyethylene comes in ready-to-install rolls up to 900 ft. long. It can wrap over roof peaks from ground to ground, making it especially wind and leak proof.

“It gives you a permanent cover in snow and high wind areas as opposed to poly film, which can fail. When that happens, you have a double loss of the greenhouse cover and your plants,” says Michelle Torres, Adaptive Plastics, maker of Solexx.

Solexx has been making the shatterproof material since 1987. It diffuses the light, leaving neither shadow nor sunburned plants. It also does not yellow or lose light transmission with age. The company offers a 10-year warranty, but working life extends well beyond that. Torres recalls a customer stopping by a trade show recently. He had covered his greenhouse with Solexx in 1990.

“He had some panels that showed some degrading, but otherwise it was fine,” she says.

The walls score and cut easily, can be bent around corners up to 90 degrees and over peaks for leakproof seams. It can also be installed vertically or horizontally.

Solexx comes in a 5-mm thickness with a 2.3 R-value and a 3.5-mm thickness with a 2.1 R-value. By comparison, an 8 mm triple wall poly film product has only a 2R value, notes Torres.

“We can sell just the covering or entire kits in 5 different styles,” she says. “Uses include overwintering plants and protecting tender perennials, as well as propagation houses for small growers with roadside stands.”

Kits include benches for potted plants as well as full-length hanging rods.

While pricing varies, Torres gives an existing 8 by 12 by 8-ft. high greenhouse as an example. She estimates it would need about 120 linear feet of Solexx and would cost about \$800. Greenhouse kits come in a variety of shapes and size from 8 by 8 by 8 on up.

Commercial growers are invited to visit



Flexible, twin-wall Solexx is a high-density polyethylene that provides a permanent greenhouse cover in snow and high wind areas. It comes in ready-to-install rolls.

www.AdaptivePlastics.com, maker of Solexx, for products designed for larger growers.

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