

The Dairy Business

By
Newton Bair

Solar Energy on the Farm?
 What's all the fuss and furor over the idea of harnessing the energy of the sun? You would almost think that the use of solar power is something new. Like Lil' Abner, "any fool can plainly see" that it is warmer on the sunny side of the barn, and that a fair skin will burn if exposed too long on a sunny day. The power and energy possessed by the sun was recognized in the first chapter of Genesis, when "God made the great light to rule over the day". And the writer of Ecclesiastics who said "There is no new thing under the Sun".
 There's no doubt that the ultimate source of most of the Earth's energy is from the sun. Wind, water, wood - even coal, gas and oil are the storehouse for

energy flowing directly from the sun for millions of years. Life on Earth probably could not exist without "the light that rules the day". Here endeth the sermon.
 Agriculture is the prime user of solar energy. The miracle of photosynthesis in all green plants uses sun power directly to convert simple compounds like water (H₂O), carbon dioxide (CO₂), oxygen (O₂), and nitrogen (N) which are components of the air we breathe, and a few simple mineral elements from the earth into complex goodies that make up our food and feed supply. No sun - no corn, no hay, no peanuts. No nothing!
 But now, we are looking at new ways to harness this energy. Here

is where farmers are way ahead of the pack in thinking up new ways to make it work for them. Calf hutches are a prime example. They are actually simple solar collectors that have saved the lives of thousands of calves. Nearly every new barn that's built these days is oriented in such a way that the sun penetrates to the north wall in winter, but blocks the hot rays in summer. Open front heifer sheds and free stall barns facing south are adaptations of tested solar technology. Many newer stall barns are built on an east-west axis, with most of the windows on the south side.

The idea of underground housing and earth-berm shelter has been around as long as the old bank barns our forefathers built, and the caves and cellars to cool and store produce. There are windmills to pump water and water wheels to run sawmills and grind grain. And the nylon line stretched across the backyard is still a most efficient solar clothes dryer. Nothing new under the sun? Give us a chance and we'll think of something.

Take grain drying for instance. The old wooden corn crib was a pretty good solar dryer for ear corn, and I've noted that a few dairymen are again thinking of harvesting ear corn and curing it in the crib. Early planting and shorter season varieties are part of the successful management of this technique. Several corn growers in Lebanon County have been innovators in collecting solar heated air to blow through conventional

shelled corn dryers. Mark Hershey has used solar air grain drying for several years. Lloyd Sensenig, R4, Lebanon, built a new implement shed that uses the whole south side and roof as a solar collector. And John Snader, Fredericksburg, collects the heat from a large chicken house roof and uses it to dry corn. These solar collectors can be used for other purposes as well. It just takes a little imagination and initiative to make it work.

Solar photo-voltaic cells to convert light directly to electricity are now a reality. When the cost of producing the cells is lowered, we'll see many exciting uses for this technology.

Solar water heating is practical and economical. There are many home-built collectors as well as commercially made ones in use

right now. The Lebanon Extension office will conduct the fourth in a series of solar workshops on July 31 - August 1 at the Lebanon Area Vo-Tech school. A major feature of the workshop is the hands-on building of several solar collectors for heating water. Twenty have been built and are in use for the past year, including my own, which is working very well.

Meanwhile, look around you and note the sensible ways in which you might use old Sol to work for you. The technology, both old and new, is available for easy design in planning new structures or remodeling old ones. And when the most exotic and exciting development in solar techniques are perfected, farmers will be among the first to adopt them and make them work.




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