

All Eyes On: Dan West

Farmer receives grants to improve technology

BY SHAWN SHINNEMAN
Staff Reporter

When Dan West found apples piling up under his trees each July, he decided to find a way to make use of the leftover fruit.

So the owner of West Orchards in Macon applied for and received a grant from the University of Missouri-Columbia to build a small fractionating column still. The still can take wine — which West cheaply produces from his leftover fruit — and extract the alcohol to create up to 190-proof ethanol, a solution powerful enough to run West's farm equipment.

"It's satisfying to come up with an idea and then see it through to the end," West said. "[To] see it actually work or create fuel or save money for somebody if they wanted to take that idea and run with it."

A machinist by trade, West said his initial reason to start an orchard was because he wanted to take on a hobby. He began with 300 trees in 1985 and soon planted 700 more. West Orchards currently contains 1,300 trees. They encourage their U-Pick deal but also sell to local grocery stores. This year, they're also selling to Truman.

Today, seven years after receiving the original grant,

West still is experimenting with ways to utilize his leftover fruit while limiting his use of traditional energy sources and fossil fuels. He has received a total of four grants, the last three from Sustainable Agriculture Research and Education.

"He doesn't consider himself an inventor," Dan's wife, Mary West, said, who helps around the orchard. "He's just someone that likes to enjoy the things he's working on and see how they come out."

The second grant Dan West received was to build a large fractionating column still that would hold much more liquid than the original still. West used a beer keg to create the original, but the second still was built with a 500-gallon propane tank.

West used the third grant to build a machine that would pick up fruit from the ground. It is a large metal box that is pulled by a tractor. Metal prongs rotate on one end, sweeping up any fruit the machine encounters.

West's latest creation is based on a 1980s article in the magazine "Mother Earth News". The article detailed how the magazine had attempted to create a still that was powered completely by solar energy. But too much heat was lost in transfer to the still, so it was determined more research was needed before this idea could be effective.

More than 20 years later, West reread the article and decided to give the idea a shot. Just as the experimenters before him, he arranged hundreds of small mirrors on a dish so that they reflected onto a single point. The dish was controlled by a computer that tracked the sun throughout the day.

But instead of transferring the heat across wires, West put the still out in front of the dish. The result — instantly, 130-proof ethanol. With a few changes, he reached 170-proof.

Richard Freudenberger, the author of the magazine article, said he was impressed when he came across West's variation of his project. So much so that he decided to put West in his most recent book, "Alcohol Fuel: A Guide to Making and Using Ethanol as a Renewable Fuel."

"He knew what he was doing and he was very careful about keeping records and explaining to me what he did," Freudenberger said. "He's exactly the kind of person I was thinking about when I wrote the book."

West received a grant with the prototype and is currently working on a larger solar-powered still built from a 15-foot-diameter satellite dish. The prototype created 5,000 to 8,000 British Thermal Units of energy. The larger model, West predicts, will create about 150,000 BTUs.



Dan West, owner of West Orchards in Macon, peels a freshly-picked apple. West uses technology and leftover produce to supplement energy sources used on his farm.

West said he hopes to eventually merge his solar energy project with his large fractionating column still — eliminating the large still's current reliance on the services of DC Energy to

create heat. He said he does not experiment in order to find something that will make him rich, but is excited about what his solar-powered creation could do on a

larger scale. "If you could just imagine having 20 of these out on a hillside, all computerized-controlled, all tracking the sun, what those things could do," he said.

Residence Life explains on-campus rates

BY BETHANY COURY
Assistant Features Editor

Students living on campus pay more for their housing than their education.

Truman's on-campus room and board rates account for more than just utilities and food, which is why the average price of residence halls is approximately \$600 more than in-state undergraduate tuition.

John Gardner, director of the Office of Residence Life, helps point to where much of the money goes.

"We're not supplementing other parts of the University," Gardner said. "We can't do that because of the bonds we have. The money has to go back towards the residence halls."

These bonds are 30-year contracts taken out for the renovation of the residence halls. The bond payments account for approximately 21 percent of the residence hall budget. Gardner said these renovations were necessary changes.

"I think people look at a building like Ryle and see a lot of nice finishes to Ryle in terms of the way it appears," Gardner said. "The real things we've done there are upgrading things like plumbing, adding air conditioning, upgrading the heating units and things like that. That's where

most of the money goes to, not things like new paint, new doors, things like that."

Dave Rector, executive director of institutional research and budgets, said room and board rates would have been approximately 10-15 percent lower if halls had not been renovated.

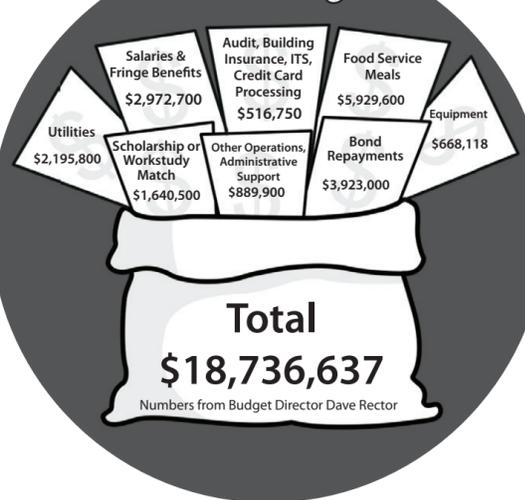
"It's a combination of the bond payments and then the higher utility costs, because we're running air conditioning now," Rector said.

With the exception of Blanton-Nason-Brewer Hall — built in 1948 — the residence halls were all built in the 60s, Rector said.

"Part of it was the life cycle, we knew we had to do something to the halls or they'd start falling apart," Rector said. "Other than that, it was mainly student complaints and demands."

The rest of the Residence Life budget consists of funds for salaries, utilities, equipment, Information Technology Services, other operations/administrative support, building insurance and food service, according to the budget. Building insurance is approximately \$58,000 a semester and the food service is about one-third of the room and board rates, at \$1,130 per semester per student. Rector said these prices do not get marked up but rather go directly to Sodexo. Finances for ITS cost approximately \$367,000

Residence Hall Budgets 2010-11



a year, Rector said. "We have [Internet connection] for each person in each room," Rector said. "And we have 2,900 people in the residence halls. So potentially, we have to have networking for 2,900 people at once. There's a big load on the network in the residence halls."

One discrepancy in the Residence Life budget is within the other opera-

tions/administrative support fund, a fund reserved for office supplies, staff traveling and custodial supplies. In the room and board rates is the Residential College Fee, a \$150 fee per student per fiscal year, which goes to the other operations fund. This \$415,000 then gets transferred to a non-Residence Life office, the New Student Programs (a depart-

ment formerly titled the Residential College Program).

Rector said this transfer from Residence Life to New Student Programs is a board policy that was set up in 1985. The Programs' budget has changed through the years, so now this transfer covers only about half of their entire budget — \$950,000.

Marty Eisenberg, dean of New Student Programs, said the department's primary focus is new students, so they account for first year advisers and coordinate events such as Truman Week. They also are responsible for campus-wide programs such as the International Film Festival.

New Student Programs does contribute back to the Residence Life budget, however, with an expense between \$200,000 and \$230,000 each year, which pays for about half of the student advisers' housing discounts, Eisenberg said.

New Student Programs also tries to support SA programs in the funding formula, in an understanding that their primary focus in New Student Programs is students living in residence halls, he said.

Rector said he does not know why the fee is in the Room and Board rates, as opposed to the general tuition.

"[The transfer is] kind of odd, but that's the way they set it up, so I've left it alone," Rector said.



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