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Compression obsession

Making biobiscuits

Story by Tara Ballenger

With the help of MU's Bradford Research and Extension Center, a Columbia business has built a machine that transforms bulky biomass such as corn cobs and switch grass into tablets as dense as wood. Jesse VanEngelenhoven, BS ME '07, research director for Ecologic Tech, says the tabletizer could help farmers profit from field scraps by making biomass easier and cheaper for them to transport.

"The tabletizer can compress anything you want to put in it — warm season grasses, corn stover, corn cobs, pine cones, saw dust," he says, "We tried it all."

The device was the brainchild of the late MU civil engineering professor Henry Liu, who collaborated with mechanical and aerospace engineering professor Yuyi Linn to design it. Liu founded Ecologic Tech in 2001, and now his son Jerry, BS ME '90, has picked up where his father left off. He and VanEngelenhoven worked with the Center to build the 8-foot-tall steel tabletizer, which uses hydraulics to press materials into a small, cylindrical mold.

The team found that the tabletizer was able to compress fluffy, unwieldy biomass the size of a milk gallon into a block about the size of a hockey puck. The final product is about 10 times



A new machine squashes bulky biomass, like corn cobs, into usable tablets. Photo by Nicholas Benner

denser than the unprocessed biomass, which allows producers to transport much more plant material per truckload.

“We have a lot of good results, and it’s very promising,” says Liu, adding that the machine is at least twice as energy-efficient as current wood pelletizer technology.

VanEngelenhoven says that testing the tabletizer at MU’s facilities allowed him to pinpoint where improvements could be made. The team can use that knowledge to make modifications if Ecologic Tech decides to bring the product to market.

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