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Key Points

- UC Davis has found a better way to turn ag waste into energy.
- Generators "digest" ag waste into biogas that is then made into heat or energy.
- Biogas from a digester is to be used to power Davis housing.

By **KATHY COATNEY**

TURN agriculture waste into cash? This is science fiction, right? Wrong. While many have tried and failed, research at the University of California, Davis, has found new and better ways to convert organic waste into energy.

Digest technologies

Ruihong Zhang, a professor in the department of biological and agricultural engineering at UC Davis, is focusing on methane generators that use bacteria to break down or "digest" ag waste into biogas, that is then made into energy.

Anaerobic digestion isn't new technology, but what is new and developed by Zhang and her colleagues is a two-phase, closed-loop system that encourages the best environmental conditions for the bacteria involved in the process, Zhang explains.

With this process, organic materials like rice straw and food processing wastes have been successfully broken down with a mix of bacteria in an oxygen-deprived environment. What happens is that the complex mix of carbon-containing molecules is converted into a medium-Btu gas. The gas is approximately 60% methane, which can be used to produce heat, electricity or both.

How long does it take it to convert? Depending on the material, it can take eight to 15 days, Zhang says.

AG WASTE TO ENERGY: Ruihong Zhang, a professor in the department of biological and agricultural engineering at UC Davis, is focusing on methane generators that use bacteria to break down or "digest" agricultural waste into biogas that is then made into energy.

On campus

There is a pilot anaerobic phased solids, or APS, digester currently on campus. Another APS digester is being built by Onsite Power Systems elsewhere in Davis, and the biogas produced from this APS digester will be used to provide power to a housing community on the west side of the campus, Zhang says.

The village will also have solar energy, and between the solar and biogas energy, their full energy needs will be met, Zhang says.

Coatney is a Corning writer

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