OUTLOOK

Something's Brewing

Mt. Hood instructors ready to light the fire on experiment in making ethanol

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The sparkling white refrigerator in the new Mt. Hood Community College laboratory contains four large Ziploc bags containing exactly one item: wood chips.

JIM CLARK / GRESHAM OUTLOOK
Hiroshi Morihara, president of HM3 Ethanol, explains the equipment that will convert non-food resources into ethanol.

What Hiroshi Morihara and Rich Palmer may lack in party favors, they gain in ingenuity. The two scientific entrepreneurs are about to unveil a pilot plant to explore the possibilities of wood- and plant-fueled ethanol at the college.

After the ribbon is cut at 9:30 a.m. Friday, Oct. 3, Palmer will climb the latter in the steam plant, pour some chips from the bags down the funnel hopper ... and see what comes out. If all goes well, when the chips meet with steam from the adjoining high-powered boiler, a brown-colored pulp should emerge from the orifice below the labyrinthine cluster of pipes and valves.

By studying the results in the nearby lab, Morihara and Palmer hope to make headway in the accelerating race for viable fossil-fuel alternatives. Part of what sets HM-3, the name of the pair's business venture, apart from the competition – which includes monoliths like Chevron, DuPont and Weyerhaeuser – is the agility of a small, focused organization with specialized equipment.

"They're battleships, we're PT boats," says Morihara. "I can go anywhere I need to go quickly."

Still moving forward

Morihara, 70, founder of Persimmon Realty and the former Oregon Science and Technology Partnership, likens the HM-3 production process to making moonshine whiskey in a still. When the high-pressure steam hits the chips, an enzymatic process breaks down the wood's cellulose into glucose, sugar, then into a flammable alcohol.

The pilot plant is not intended for large-scale production.

"Less than a pound produced in one day equals months of work on the inside," Palmer says.

A poplar scientific view

Morihara and his associates spent four years conducting tests with cellulosic-based ethanol at the University of Washington. As they move the operation to Mt. Hood, he and Palmer are following their belief that wood and plants are superior fuel sources to the corn often discussed by politicians.

The strain corn-based ethanol would likely place on water resources, grain stocks, livestock farming, land use and fuel supplies has gained traction in the scientific community, according to Greenwire magazine.

HM-3 uses different varieties of poplar trees – a fuel source that's plentiful and close to home. Wood chips are available at pulp mills along the Columbia River and the Willamette Valley is rich with grasses.

"Oregon has a lot of trees," Morihara says. "We can take advantage of what we've got."

From the beginning

Palmer says it's just a matter of time before alternative fuels such as cellulosic ethanol encroach upon dwindling, hard to obtain supplies of oil and other fossil fuels.

He's also excited about the environmental implications resulting from the cycle of making cellulosic ethanol.

"The CO-2 goes back to the trees," he says. "There's no net contribution to global warming" as with fossil fuels.

"Before fossil fuels, that's what they did. This is going back to where we should be."
