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Boeing looks to camelina for possible aircraft biofuel source

Airplane manufacturers hope to cut emissions drastically with cleaner fuel systems

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KENNEWICK, Wash. - A Boeing official offered some hope - however slim - this week that camelina crops eventually could power commercial aircraft.

Richard Wynne, a Boeing spokesman from Seattle, was the keynote speaker at the 10th Annual Northwest Harvesting Clean Energy Conference on Monday. He told more than 500 people gathered at the Tri-Cities Convention Center that Boeing is working on responsible environmental policy.

"Fuel matters a lot to our customers," Wynne said, adding that fuel and oil comprise 25 percent of airlines' operating costs.

When the price of jet fuel rises one cent, he said that increases the global cost of aviation $195 million.

Meanwhile, aircraft increasingly emit more pollutants into the atmosphere. Aviation contributes 2 percent of global carbon dioxide emissions, Wynne said, and by 2030, that's expected to expand to 3 percent.

"We're going to address it responsibly," he said. "We are committed to a pathway to carbon-neutral growth and aspire to a carbon-free future."

Commercial aircraft manufacturers are committed to reducing carbon emissions 25 percent from 2005 to 2020 and by 50 percent by 2050.

To do that, Wynne said aircraft manufacturers are using less fuel and striving to change the fuel they use. Since the 1950s, he said commercial aircraft use about 70 percent less fuel. A jet that burned 16,000 to 20,000 pounds of fuel per hour now burns about 6,000 pounds per hour.

"That's where sustainable biofuels come in," Wynne said. "Our company, our industry, is devoted to the development of certain types of sustainable biofuels."

First-generation biofuels, however, such as corn ethanol and soy ethanol don't cut it. Besides, making them fires up the food-for-fuel debate.

"Ethanol fuels don't work on airplanes," he said, "so we're focusing on second-generation

biofuels."

Second-generation biofuels eliminate the competition with food crops, Wynne said, but the supply chain is not mature.

By 2015-16 Boeing hopes to have 500 million to 600 million gallons of second-generation biofuel available, which would comprise 1 percent of the company's needs.

"It's spectacularly hard to get there," he said. "This is a daunting public policy challenge for us."

A major hurdle aircraft manufacturers must soar above is having biofuel certified for aircraft use.

Wynne said Boeing is considering four feedstocks for aircraft biofuel production: camelina, jatropha, halophytes and algae. Camelina is an oilseed crop with which some Northeast Oregon farmers have experimented. Jatropha is a tropical or subtropical plant. Halophytes grow in regions with more salinity in the soil, such as in deserts or along the seashore. Algae is an aquatic, photosynthetic organism.

"Camelina is the closest to being ready," he said. "Camelina has a lot of potential here."

Jatropha and halophytes are two to four years away, Wynne said, and algae is 8-10 years away from producing acceptable quantities of biofuel.

That was good news to Don Wysocki, an Oregon State University Extension soil scientist at the Columbia Basin Agricultural Research Center near Adams. He said area farmers have grown a few thousand acres of camelina in this region, but Montana farmers grow more.

"They're forward-thinking in their ideas of using camelina," he said of Boeing. "We've been working with it for four years."