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Airline Flies a 747 on Fuel From a Plant

By BETTINA WASSENER

Air New Zealand tested a jet fuel made from the jatropha plant on Tuesday as the airline searches for an affordable and environmentally friendly alternative to crude oil.

For two hours, pilots tested the oil, in a 50-50 blend with conventional jet fuel in one of the four Rolls-Royce engines powering a [Boeing](#) 747-400 aircraft — the first test flight by a commercial airline using jatropha oil. Rob Fyfe, Air New Zealand's chief executive, called the flight a milestone in commercial aviation. "Today we stand at the earliest stages of sustainable fuel development and an important moment in aviation history," he said. The project has been 18 months in the works.

Unlike other biofuel crops like soybeans and corn, jatropha needs little water or fertilizer and can be grown almost anywhere — even in sandy, saline or otherwise infertile soil. Each seed produces 30 to 40 percent of its mass in oil, giving it a high per-acre yield, specialists said.

The results of the flight — and two others planned by rival airlines in the United States and Japan in January — will be closely watched by an industry that is trying to shift toward renewable, low-emissions fuels.

A sharp rise in crude oil prices — to more than \$145 a barrel in July — offer a strong incentive for the industry to reduce its exposure to volatile oil prices. But pressure to reduce carbon emissions has also driven the search for alternatives.

The International Air Transport Association, which represents 230 airlines, wants its members to use 10 percent alternative fuels by 2017. The association has the goal that airlines will be able to fly carbon-free in 50 years, with the help of technologies like fuel cells and [solar energy](#).

Such goals have ensured that research and development into greener flying have continued, despite the plunge in oil prices below \$40 a barrel.

Having conducted a series of tests Tuesday, Air New Zealand and its partners, the aircraft manufacturer Boeing, the engine maker Rolls-Royce and the technology developer UOP, a part of [Honeywell](#), will review the results "as part of our drive to have jatropha certified as an aviation fuel," the flight's chief pilot, Capt. David Morgan, said.

The hope is that the test results will lay the groundwork for jatropha to be commercially available in three to five years, executives from the companies said.

In February, Virgin Atlantic became the first airline to test a biofuel blend in a commercial aircraft, using a 20 percent mixture of coconut oil and babassu nut oil in one of its four engines.

Two more airlines are to test their alternatives next month. [Continental Airlines](#) will conduct a test flight on Jan. 7 using a blend that includes algae and jatropha, the first biofuel test flight of a commercial airliner owned by an American company.

And Japan Airlines is planning a test flight Jan. 30 using a fuel based on the camelina oilseed.

But the potential use of jatropha has not been free of criticism, with some observers fearing that farmers could be tempted to grow jatropha rather than edible crops in the hope of getting better prices.

Algae may be free of this potential problem, but research into algae is not as far advanced, said an Air New Zealand spokesman.

Air New Zealand said the jatropha used on Tuesday's flight had been grown in Malawi, Mozambique and Tanzania.

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