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Biofuels can cut jet engine pollution by half

Using [biofuels](#) to help power jet engines cuts particle emissions in their exhaust by as much as 50 to 70 per cent, says a [NASA](#) study.

"We show that, compared to using conventional fuels, biofuel blending reduces particle number and mass emissions immediately behind the aircraft by 50 to 70 per cent," researchers said in the study published in the journal Nature.

During flight tests in 2013 and 2014 near NASA's [Armstrong Flight Research Center](#) in Edwards, California, data was collected on the effects of alternative fuels on engine performance, emissions and aircraft-generated contrails at altitudes flown by commercial airliners.

Contrails are produced by hot aircraft engine exhaust mixing with the cold air that is typical at cruise altitudes several miles above Earth's surface, and are composed primarily of water in the form of ice crystals.

The tests involved flying NASA's workhorse DC-8 as high as 40,000 feet while its four engines burned a 50-50 blend of aviation fuel and a renewable alternative fuel of hydro processed esters and fatty acids produced from camelina oil.

A trio of research aircraft took turns flying behind the DC-8 at distances ranging from 300 feet to more than 20 miles to take measurements on emissions and study contrail formation as the different fuels were burned.