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https://www.100test.com/kao_ti2020/503/2021_2022__E9_87_91_E 8_9E_8D_E6_96_B0_E9_c92_503257.htm At the 1900 Worlds Fair in Paris, Rudolf Diesel exhibited an engine that could run on oil from vegetables and plants. But Diesels design was eclipsed by automobile engines that ran on petroleum-based fuel. Today, though, with concerns about the environment and the supply of oil, diesel engines and the sustainable options for running them are getting a second look. Auto industry analysts expect sales of diesel-powered cars in the United States to triple in the next decade, and many of those drivers will be looking for plant-based fuel, "bio-diesel," to put in their tanks. Jan Sluizer has more on what some say is the fuel of the future. Biodiesel is made from processed vegetable or plant oil, and can be used in diesel engines on its own, or blended with petroleum-based fuel. Here in Berkeley, California, the pumps at Biofuel Oasis dispense diesel made from used cooking oil. The fueling station is a cooperative, owned by five women. Margaret Farrow says Oasis was opened to offer a sustainable option to the petroleum-derived diesel offered by big oil companies. "Its a clean-burning fuel. Its more efficient than gasoline. Its biodegradable, non-toxic, non-flammable," she says, adding that its good for the environment, too. "In terms of greenhouse gasses, if you use biodiesel, theres no net increase of carbon dioxide going into the environment." Since Biofuel Oasis opened in 2003, about 2,500 customers have pulled in to fill up. For Sandra Lupien, coming here

is an ethical choice. "An important point for me about using biodiesel is to make sure that were using biodiesel that is made from recycled vegetable oil, oil picked up from restaurants thats just going to be thrown away anyway, instead of using oil processed from new crops." There are two types of biodiesel fuel: Fresh or "virgin" biodiesel is made from crops such as soybeans. Then theres the biodiesel fuel made from recycled vegetable oil which only a few fueling stations besides the Oasis sell currently at \$1.10 ten per liter, about five cents less than regular diesel fuel and ten cents more than gasoline in California. Even though diesel is more expensive than gasoline, liter for liter, its cheaper to run a diesel car. Diesel engines are designed to be more efficient than gasoline engines, so they provide higher fuel efficiency. But it can be more of a challenge to find a place to fill up a car that runs on diesel. Not all service stations carry diesel, and pumps serving up biodiesel are rare indeed. Nationally, there are only about 1600 biodiesel fueling stations, with most clustered in the grain-growing states of the Midwest, and a few along the coasts. The biodiesel sold at Oasis comes from Yokayo Biofuels, the only commercial-scale plant in northern California that manufactures the fuel from used vegetable oil. Kumar Plocher founded the company in 2001, and it now produces about 3700 liters of biodiesel fuel every day. Plocher has a fleet of biodiesel-powered trucks that collects used cooking oil from about 700 restaurants across northern California. Once at the processing plant, the oil goes through a series of screeners, high-speed shakers, hot tanks and washes to remove food residue and water. The separated food

products are composted, and the filtered oil begins its transformation. Treated with methanol and potassium hydroxide, also known as lye, the vegetable oil molecules break down. Plocher explains that this step is the most dangerous aspect of the operation. "People ask if biodiesel is a dangerous fuel. Once youve actually made it and purified it, its completely non-toxic and non-hazardous." But Plocher admits there is still a great deal of negativity surrounding biodiesel fuels. "Right now the [public sentiment] about biofuels in general and, certainly, biodiesel as well as ethanol, is very negative." He points to news reports and studies focused on the diversion of food crops for fuel and the environmental costs of clearing land for biofuel crops. And he counters, "Its very easy to show that this kind of biodiesel that were making has serious net positives. But if youre going to take an acre of someones food garden and replant it to make energy, theres problems with that." Plocher says because of the huge amount of land required to grow biodiesel crops often land where food crops had been grown some biodiesel producers are importing palm oil from the tropics to make their fuel. But thats not a perfect solution, either. Not only are there increased transportation costs, but the growing demand for palm oil has caused the destruction of rainforests in Malaysia, Indonesia and other tropical countries. Kumar Plocher serves on the National Biodiesel Boards Sustainability Task Force, working to develop a road map for the industry. With an eye on its impact on the environment and the global food supply, he says, the search is on for sustainable, super

biodiesel crops, "stuff that doesnt compete with food, that you can get a whole lot of energy per hectare." He says soybeans provide only a tiny amount of oil, and mustard seed and sunflowers are somewhat more productive. "But there are trees that actually grow well in California and across a lot of the United States called Chinese Tallow trees. They can give you upwards of 4,730 liters a hectare. Were looking into those. Difficult to harvest but they can be one of the real feedstocks of the future." Algae is another possibility, he says. "We can get [tens of thousands of liters per hectare] with algae ponds. So there are all kinds of more sustainable choices for the future." Whatever its made from, industry experts expect biodiesel to be an important part of the energy supply of the future. 100Test 下载频道 开通,各类考试题目直接下载。详细请访问 www.100test.com