Researches concerning the injection characteristics of a biodiesel type fuel

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The paper presents some experimental results concerning the use of a biodiesel type fuel (BTF). The fuel was produced using waste cooking oil, collected from a local branch of the McDonalds' restaurants. Referring to the physical properties of the fuel, we noticed that the transesterification process has significantly decreased the viscosity of the methylester, which is very close to the one of Diesel fuel (5.7 mm2/s, compared to 4.9 mm2/s for Diesel fuel, in comparison with 34 mm2/s - the initial viscosity of the oil). For the tests we used the injection equipment of a D.I. Diesel engine (in line type A, RO-PES4A90D410RS2240 injection pump, engine stroke/bore = 130/108 mm, four in-line cylinders, 65 HP/1800 rev/min. The use of methylester led to changes of the injection characteristics (increased injection pressure, lower average injection rate, and earlier start of combustion).