



2nd VegOil

**Demonstration of
2nd Generation Vegetable Oil Fuels in
Advanced Engines**

**Workpackage 3
Fuel development**

**Deliverable N°3_6:
Engine vs oil quality test report**

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List of acronyms:

Ca	calcium
Mg	magnesium
P	phosphor
ppm	parts per million = mg/kg
VWP	Vereinigte Werkstätten für Pflanzenöltechnologie

1 Summary

Sensitive diesel engines, especially ones with exhaust aftertreatment systems may only be operated with Ca, Mg and P contents lowered beyond the previous standard to a sum value of less than 1 ppm to retain the respective engine life cycles and to comply with customary maintenance intervals.

Vegetable oils differ in regard of their fatty acid compositions. Residue-free combustion is possible if the specific values for ignition delay or non-ignitability and flame front propagation or combustion speed are taken into consideration.

This should be possible with state of the art electronically controlled engines and certain software adaptations.

When both influences are considered – using chemically clean oils and considering the combustion characteristics – engine combustion of triglycerides in state of the art diesel engines is generally not subject to any conditions that are not also relevant for the combustion of fossil diesel fuels.