Press release
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Hemp Oil: Potential Fuel for Engines Adapted to Plant Oil Use?

Pure hemp oil is not suitable as fuel for the plant oil engines available today, but a 20 percent admixture to canola oil (rapeseed oil) could improve low-temperature behaviour and flowability of pure plant oil fuels. However, the use in fuels is only economically feasible only for oil that can't be marketed cost-effectively for human nutrition, cosmetics or animal food. These are the main conclusions of the world's first technical and economical analysis on „Hemp Oil as Plant Oil Fuel".

For a Swiss agricultural information service, the Technologie- und Foerderzentrum (TFZ) in Straubing, Germany, has researched the suitability of different qualities of hemp oil as fuel on the basis of the requirements of the DIN pre-standard for canola oil fuel (DIN V 51605). The nova-Institut in Huerth, Germany, has calculated several scenarios for the current and future competitiveness of using this valuable oil for fuel.

Michael Carus, managing director of the nova-Institut, summed up the results: „Hemp oil can only play an important role as a plant oil fuel if engines specially constructed or adapted for the use of hemp oil are available and hemp varieties with improved seed yield per hectare and higher oil content have been bred. Neither of these developments can be expected in the foreseeable future."

The use of hemp oil as plant oil fuel will therefore remain limited to niche markets or special conditions. One option might be the use of low-grade hemp oil for fuel or the use of seeds harvested as joint products in the large-scale cultivation of hemp fibre, if these can't be used in higher value products.

From a technical point of view, mainly coke residue, iodine amount and oxidation stability presented problems. Regarding low-temperature behaviour and thus flowability, hemp oil was identified to be superior to canola oil. At 40° Celsius, its kinematic viscosity is 20 percent lower than that of canola oil. Therefore, adding up to 20 percent hemp oil to rapeseed oil fuel would be an option at present. However, extensive research relevant to fuel and engines would need to be carried out prior to practical implementation.

About nova-Institut GmbH

The private and independent nova-Institut is globally active in the area of renewable resources and focusses on market research, industrial and political consulting, project management and online media services. The institute utilises and creates expert knowledge to facilitate the use of renewable resources for energy and materials. Since its establishment in 1994, market and economical analyses have been a core business of the nova-Institut.

Further information

An English summary of the study (6 pages plus figures) and the full results (in German language) are available online without charge at:

- European Industrial Hemp Association (EIHA): www.eiha.org -> Studies
- nova-Institut GmbH: www.nova-institut.de/nr -> nova-Publikationen & Shop

Reprint free of charge, please forward a copy.

Attached is a photo of agricultural hemp cultivation in Germany (Source: nova-Institut 2007) – more photos are available on request.

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