



Turnip Seed Oil: The Humble Turnip May Contain the Fuel of the Future

Turnips may not be much to look at, but researchers, including ISTC's B.K. Sharma, have discovered that their seeds are bursting with inedible oils that are suitable for use in biodiesel production. Oil was extracted from forage turnip seeds by n-hexane solvent in a laboratory Soxhlet apparatus. The oil was then pretreated with acid catalysts to yield turnip oil methyl esters, TME (aka biodiesel). The resulting product was analyzed for fuel properties, including kinematic viscosity, cloud point, pour point, cold filter plugging point, acid value, oxidative stability, and lubricity. TME metrics were compared with soybean-derived biodiesel (SME), which tended to perform better for most fuel properties. However, when TME was blended into ultra-low sulfur diesel fuel (ULSD) at 5% and 20% volume, the blends met standards for fuel quality, even surpassing analogous SME-blends and unblended ULSD for some properties. The researchers concluded that turnip oil may have potential as an alternative, non-food biodiesel feedstock.



Their study, **Potential Application of Turnip Oil (Raphanus sativus L.) for Biodiesel Production: Physical-Chemical Properties of Neat Oil, Biofuels and their Blends with Ultra-Low Sulphur Diesel (ULSD)**, was published in a 2013 issue of BioEnergy Research.

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Meet the Scientists

- B.K. Sharma

Publications

- **Potential Application of Turnip Oil (Raphanus sativus L.) for Biodiesel Production: Physical-Chemical Properties of Neat Oil, Biofuels and their Blends with Ultra-Low Sulphur Diesel (ULSD)**



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