Biodiesel Oil Quality from Feedstock Grown on Saline Lands

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The increased demand for biodiesel feedstock encourages producers to expand areas seeded to oilseed crops. Biodiesel oil from canola-grade feedstock ranks among the best in the production of fatty acid methyl ester (FAME or biodiesel oil). FAME produced from canola-quality oilseed grown on salt-affected lands offers new opportunities for increased production which counters fuel-versus-food concerns, provided the biodiesel oil meets quality standards. The American Standards Testing Materials (ASTM) Association has set the North American fuel quality standards (D6751-07) for 100% biodiesel oil (B100). Canola-quality feedstock yield oils low in free fatty acids, acids which are not bonded to parent oil molecules. At biodiesel oil blends greater than 20%, these free acids may negatively affect some diesel engine components. Also, solid and dissolved impurities, alkali/alkaline earth metals, and oxidation stability are of concern to fuel injection equipment manufacturers. Typically, oil purity, composition, and biodiesel quality depend on the quality of the feedstock supplied. Processing can improve oil purity, but not composition. Contaminants in biodiesel oil include sulphated ash, sulphur, and metals P, K, Na, Ca, Mg, and carbon residue.