

Production of Biodiesel from Algae

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Several varieties of freshwater and saltwater algae were procured from three different commercial sources. All algae cultures received were contaminated with microorganisms (i.e., bacteria, fungi, protists) and macroorganisms (i.e., worms). The algal strains were purified using both solid and liquid media. The purified algal strains were then successfully grown in ~ 100 L batches with densities of 1.4 to 1.9 x 10⁸ cell/mL. Several harvesting and drying techniques (i.e. filtration, centrifugation, flocculation, and freeze-drying) were evaluated to effectively dewater the algae cultures. On average, for every 1 L of high-density algae grown, ~ 1 g of dry algae was harvested. Algal oil was extracted from the dry algae using soxhlet extraction with hexane.