One-Pot Simutaneous Dewatering and Lipids Extraction from Wet Spent Coffee Grounds using Subcritical Dimethyl Ether

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Spent coffee grounds (SCGs) contain lots of valuable compounds such as lipids, carbohydrates, and phenolic compounds. Hence, SCGs is one of the most promising food wastes for the production of bio-oil for biodiesel and bioactivity compounds. But conventional organic solvents and $scCO_2$ extraction have obstacles to extract the valuable compounds because of the high moisture content in SCGs (30-35%). These processes need the drying process before extraction and it consumes a lot of energy and has the possibility of biomass deterioration as an influence of high temperature. Herein, we demonstrated an efficient and green extraction technology for wet SCGs with subcritical dimethyl ether (DME). Optimum conditions for high recovery yield of extracts were investigated by varying main extraction temperature, pressure and time.