

RECOVERY OF PROTEIN NITROGEN FROM BIO-OIL BEARING BIOMASS

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ABSTRACT

The commercial processing of bio-oil bearing biomass is financially challenged owing to the marginal value of the bio-oil product. Commercial viability requires the recovery of additional value added products including fermentable sugars, chemicals, and protein. In previous reports a novel ionic liquid based co-solvent system was demonstrated to provide pathways for the recovery of bio-oil, phorbol esters, and fermentable sugars from *Jatropha* seed biomass. Not discussed, however, was the fate of the protein nitrogen throughout the multi-phase extraction process. In this work the fate of total and protein nitrogen was tracked throughout all steps. Results demonstrated that the majority of protein (~ 86%) remained in the final bottom biomass phase while approximately 12% was lost to the co-solvent phase, with the remainder (~1.3%) lost to the methanol wash phase. Commentary on the best pathways for protein recovery and use as a biomass for animal feedstock or in form of nitrogen is provided.

Keywords: bio-oil bearing biomass, *Jatropha*, ionic liquid co-solvents, protein extraction.