

Poster M14

**Biomass growth of the white-rot fungi
Auricularia auricula-judae on cheese whey**

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Biomass biological pretreatment is a "soft" alternative to physical or physicothermal and chemical methods. White-rot fungi (basidiomycetes) have a higher affinity for lignin and hemicelluloses, selectively degrading them faster than cellulose. Among the main sub-products of the dairy industry, cheese whey is obtained after milk's casein precipitation and thousands of liters are produced everyday. It is an interesting alternative as input for fungi culture medium preparation and a source for ethanol production (yeast) when supplemented with sucrose or soluble sugars coming from lignocellulosic biomass previously pre-treated enzymatically. This study aimed to evaluate the biomass production of the white-rot fungi *Auricularia auricula-judae* CCB-349 in submerged culture using whey and synthetic culture medium (control). We evaluated the consumption of carbohydrates, total organic carbon, total nitrogen and pH values. Biomass was evaluated for its chemical composition, determination of amino acids and fatty acids. Results (on dry basis) were 15.72% and 24.61% protein; 4.11% and 4.94% fatty acid; 9.37% and 7.13% ash; 60.24 and 50.72 % of total carbohydrates, for the whey and synthetic media, respectively. Amino acid profile was satisfactory and unsaturated fatty acids predominated. The yield of biomass was statistically different for both whey and synthetic media (0.052 and 0.017 g.L⁻¹.h⁻¹, respectively). As an extension of this work, ongoing experiments (Embrapa Agroenergy) are using whey to replace water (biomass wetting) in the pre-biological treatment of sugarcane bagasse and elephant grass in order to obtain fermentable sugars using *Auricularia auricula-judae* and other white-rot fungi such as *Pleurotus ostreatus* and *Ganoderma lucidum*.