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摘要: 微生物是淡豆豉发酵的核心，研究淡豆豉发酵炮制过程中微生物群落碳代谢情况，对于揭示淡豆豉炮制机理意义重大。采用Biolog 生态微平板研究了不同发酵时间点淡豆豉样品的碳代谢特征。结果表明：发酵第6 天样品的AWCD 值在整个培养过程中明显高于其它样品，发酵第1天，再闷9和15 d样品的 AWCD值曲线差异不明显；多样性分析显示，各样品间微生物Shannon-Wiener指数H′值相近，而第6 天样品的Mclntosh指数U值明显高于其它发酵时间点的样品；各样品微生物的最佳碳源种类相近，主要利用了β-甲基-D-葡萄糖苷、N-乙酰-D-葡萄糖胺、D-甘露醇、葡萄糖-1-磷酸盐、D-半乳糖醛酸、吐温40等碳源，对γ-羟基丁酸、α-丁酮酸、L-精氨酸、L-α-甘油、i-赤藻糖醇等利用较少。研究表明，发酵第6 天微生物群落的碳代谢活性最高；各样品微生物的丰富度相近，第6 天样品微生物的均匀度与其它样品差别较大；整个发酵过程微生物的最佳碳源种类相近，主要利用了糖类及其衍生物，而对氨基酸、脂肪酸、脂类利用较少。ECO板能真实反映出淡豆豉发酵中微生物对碳源利用的整体代谢情况，但也有其局限性。

Abstract: In order to study the carbon metabolic characteristics of microbial community and reveal its mechanism in the fermentation process of fermented soybean, we cultivated the samples in different processing time of fermentation process through Biolog Eco Plate, measured the OD and analyzed its metabolic activities. The results showed that the AWCD in the 6th-day fermentation was obviously higher than other samples; the AWCD curves were similar among the samples which go through the first day fermentation, and secondary fermentation for 9 and 15 days respectively; the diversity analysis showed that the index Shannon (H′) among different samples were close, but the index Mclntosh (U) of the sample in the 6th day was obviously higher than others; the best carbon sources utilized by microorganisms among different samples were close and they utilize more β-Methyl-D-Glucoside, N-Acetyl-D-Glucosamine, D-Mannitol, Glucose-1-phosphate, D-Galacturonic-Acid, Tween 40 etc and less of γ-Hydroxybutyric acid, α-Ketobutyric acid, L-Arginine, L-α-Glycerol and i-Erythritol. The research showed that the microorganism in the 6th-day fermentation had a higher biodiversity and metabolic activity of carbon; the richness among different samples was close, and the homogeneity of sample in the 6th day was obviously higher than others; the best carbon sources utilized by microorganisms among different samples were close; the microorgnisms utilize more of saccharides and their derivants, less amino acid, fatty acid and lipid. ECO Plate could truly reflects the overall situation of the microorgnisms' carbon sources utilization in the process of fermentation, but also has limitations.

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