探討紅茶菇與康普茶於牛奶發酵飲料應用之可行性

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摘要

紅茶菇主要為醋酸菌、乳酸菌、酵母菌形成的共生菌落，常用於康普茶的製造。傳統康普茶是紅茶外加蔗糖，以紅茶菇進行發酵的微甜微酸氣泡飲料。目前，紅茶菇和康普茶尚未證實對人體健康有幫助，但有體外和體內研究顯示其潛在有益健康的特性。本篇將探討紅茶菇於發酵乳飲料應用之潛力。由牛奶於不同發酵時期的 pH 值變化測試 37℃與 42℃下紅茶菇於牛奶中的乳糖發酵動力學顯示：牛奶於 42℃發酵時間 37℃的乳糖濃度變化均在中間有一段陡峭下降趨勢。速率曲線分析顯示 37℃與 42℃分別於發酵開始 9 小時 30 分鐘與 4 小時達最大值。S 型飽和曲線呈現康普茶乳糖發酵為複雜動力學。將紅茶菇與康普茶接種於含乳糖(4.25g/100g)與去乳醣(2.26g/100g 的葡萄糖)牛奶中並二次接種至牛奶發酵，兩種成品的乳酸最高含量為 0.68/100g。成品有類似發酵乳的感官特性及 pH 並且有優良的微生物品質，符合 FAO/WHO 的指導方針。將活化的康普茶直接發酵綠茶、鼠尾草與黑莓口味的牛奶混和飲料，測試發酵乳飲 DPPH 自由基清除力、總酚、總還原糖、微生物和感官特性。結果顯示：DPPH 自由基清除力最大值出現在黑莓口味發酵完儲存的第一天(98.48%)；總酚含量最大值出現在綠茶口味發酵完儲存第 30 天(81.51mg/mL)；葡萄糖醛酸含量最大值出現在鼠尾草口味儲存第 20 天(0.42g/100mL)。感官分數高為黑莓口味；最低為控制組。綜合上述實驗結果，康普茶能夠發酵牛奶與上述的牛奶混和飲料，並且包含豐富的微生物菌相、類似發酵乳的 pH 值及感官、高 DPPH 自由基清除力。可能有應用於發酵乳之潛力。然而更詳細的發酵流程、生產成本需要被研究，也需要深入了解成品中的化學組成及營養。

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