

襄荷桑葚复合饮料研制及其抗运动疲劳作用研究

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摘要: 以襄荷与桑葚为原料, 研制襄荷桑葚复合饮料, 并考察其抗运动疲劳效果。通过响应面与正交试验确定襄荷桑葚复合饮料的最佳配方后, 采用动物试验评价其抗运动疲劳效果。结果表明, 襄荷桑葚复合饮料的最佳配方为: 襄荷提取液与桑葚汁体积比 1.1:1, 蔗糖 3.1%, 柠檬酸 0.2%, 黄原胶 0.09%, 羧甲基纤维素钠 0.25%, 结冷胶 0.04%, 制得的复合饮料呈紫红色、颜色均匀、兼有襄荷与桑葚气味, 静置无明显沉淀。不同剂量的复合饮料均有利于延长小鼠的力竭游泳时间, 提高其体内超氧化物歧化酶、谷胱甘肽过氧化物酶和过氧化氢酶的活性, 因此具有较好的抗疲劳效果。

关键词: 襄荷; 桑葚; 复合饮料; 运动疲劳; 黄酮; 多糖

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Development and anti-fatigue effect of compound beverage of *Zingiber striatum* and mulberry

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Abstract: The compound beverage of *Zingiber striatum* and mulberry was developed using *Zingiber striatum* and mulberry as the main raw materials and its anti-fatigue effect on mice was investigated. The optimal formula of compound beverage was obtained by response surface test and orthogonal test, and the anti-fatigue effect of compound beverage was investigated by animal test. The results showed that the optimal formula of the beverage were that the volume ratio of *Zingiber striatum* extract and mulberry juice was 1.1:1, the addition of sucrose was 3.1%, the addition of citric acid was 0.2%, the addition of CMC-Na was 0.25%, the addition of xanthan gum was 0.09%, and the addition of gellan gum was 0.04%. Under these conditions, the beverage presented prunose in color with uniform, possessed mixed fragrance of *Zingiber striatum* and mulberry, and without obvious precipitation during storage. The compound beverage of different dosage significantly prolonged exhaustive swimming time of mice, and enhanced the activity of SOD, GSH-Px and CAT. Therefore, it had better anti-fatigue effect on mice.

Key words: *Zingiber striatum*; mulberry; compound beverage; exercise fatigue; flavonoid; polysaccharide