杜仲雄花茶加工中护绿工艺响应面优化 Green-protecting Process Optimization in Processing of Eucommia Male Flower Tea by Response Surface Analysis Method

付卓锐 董娟娥 马希汉

西北农林科技大学

关键词： 杜仲 雄花茶 护绿 响应面 工艺

摘 要： 针对杜仲雄花茶在加工过程中易变色的问题，通过利用盐离子、柠檬酸、抗坏血酸和杀青等处理抑制杜仲雄花的褐变以实现护绿的效果。在单因素试验基础上，利用SAS数据统计软件对影响杜仲雄花茶汤色的因素进行了评价，筛选出具有显著护绿效应的3个因素，即Zn2+、柠檬酸和蒸汽法杀青。利用Design-Expert数据分析软件中响应面分析法的中心组合设计建立了杜仲雄花茶加工过程中护绿工艺的数学模型，并确定了杜仲雄花茶加工过程中适宜的护绿工艺为：先用料液比为10g/mL、质量分数0.04%的Zn2+水溶液和0.4%的柠檬酸水溶液喷洒杜仲雄花蕾，然后在蒸汽中蒸40s，经过处理后的材料制成杜仲雄花茶，可避免加工过程中变色和品质变差。Aimed at the discoloration problems in processing of eucommia male flower tea, color protection treatments such as salt ions, citric acid, ascorbic acid, and deactivation of enzymes were used to inhibit the browning. The influencing factors on the liquor color of the male flower tea were evaluated based on the single factor experiment by using SAS software. The concentrations of Zn2+ and citric acid for flower preparation and the duration for flower steaming were selected as the main effect factors. The mathematical model of green-protecting techniques in processing of male flower tea was established with the central-composite model of response surface methodology in Design-Expert software. The optimal technique of green-protecting during the male flower tea processing were: to spray 0.04% Zn2+ and 0.4% citric acid aqueous solution on the male flowers with the solid-liquid ratio of 10g/mL, and then steam the male flower for about 40 second. With the above treatment, the browning and quality decreasing of the male flower tea can be avoided.

查看全文（请使用Adobe Acrobat 6.0版本浏览） 返回首页 引用本文