

EVALUATING THE POSSIBILITY OF IMPROVING THE QUALITY OF INSTANT BLACK TEA BY MEMBRANE PRE-CONCENTRATION OF TEA EXTRACT

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In conventional instant tea manufacture, tea extract is concentrated to about 25 Brix by thermal evaporation before spray drying. Most of the organoleptic properties are destroyed at this stage. This study was undertaken to investigate the possibility of improving the quality of instant black tea by membrane pre-concentration of tea extract. A tea extract was membrane pre-concentrated to about 12 Brix using a membrane filtration pilot plant fitted with a selected membrane under optimized operating temperature and pressure. This membrane pre-concentrated tea extract was further concentrated to 25 Brix by thermal evaporation and spray dried to instant black tea powder (IT-Mem). Instant black tea was also prepared by conventional method (IT-Con). Physicochemical properties of instant black teas were analyzed and sensory properties were evaluated. IT-Mem contained significantly higher amounts of theaflavins (3.0%) and thearubigins (39.6%) as compared to IT-Con (1.7% and 38.5%, respectively). Moreover, colour (3.3) and brightness (17.2) of IT-Mem were significantly higher than those of IT-Con (2.3 and 13.8, respectively). Sensory properties such as brightness, strength, and overall quality of IT-Mem received more positive responses than those of IT-Con. Quality of instant black tea can be improved by membrane pre-concentration of tea extract and it is economically feasible to apply this technique in instant black tea manufacture.