

Feasible Studies on Production of Banana Powder

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Abstract—In this study, banana powder was prepared by spray and tray drying processes at temperatures of 198° C & 70° C respectively. The prepared powders were analysed for physicochemical properties to assess the quality of banana powder and to evaluate relative changes in physical and chemical composition of final product during drying of banana. The various physicochemical parameters viz., moisture loss in convective drying of banana slices, total soluble solids of spray dryer feed liquid food, banana powder moisture content, bulk density, solubility, water solubility index and water absorption index, ascorbic acid content were studied. The results shown were the concentrated banana liquid feed of spray dryer maintains a (desirable 12-14) 14-18 brix, the sliced banana, both ripe and unripe banana takes same drying trend and same time (70° C, 6-7 hours) to arrive at below 10% moisture content, spray dried powders produced at 198° C have less moisture content 3.5- 4.4 % w.b. compared to tray dried powders 7.6-8.8 % w.b. produced at 70° C, the bulk density (0.41 – 0.5 g/cm³) of powder does not vary with process of making powder, the spray dried ripe banana powders are more soluble (3 min), spray dried unripe powder have more water solubility index (29.84%) and absorption index (2.4%) and spray dried and tray dried unripe powders produced at 198° C and 70° C are fairly a good source of vitamin C 10.5 mg/100g (9-11 mg/100g good source). Thus, the spray dried unripe powder has more solubility index, absorption index and a good source of vitamin C and having less moisture content, so the spray drying of unripe banana for banana powder making is recommended. In the case where the spray drying machinery not available, the tray drying of unripe banana is recommended because, the tray dried unripe powder has more solubility index, absorption index and has less moisture content compared to tray dried ripe banana.