

## Development of suitable method for the concentration of *Citrus madurensis* and *Spondias dulcis* juice

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Fruits are an excellent source of Vitamin C. *Citrus madurensis* (NasNaaran) and *Spondias dulcis* (Ambarella) are two tropical trees that bear fruits with high levels of Vitamin C, flavor and aroma compounds. Both fruits are currently under-utilized and therefore, this study was carried out to identify suitable method to concentrate their fruit juices while retaining the original qualities of the juices. The fruits were obtained from Maharagama in the Western province and juices were extracted by peeling and blending. The juices were concentrated by using Progressive Freeze Concentration (PFC), a novel non-thermal liquid food concentration method and evaporative concentration (Rotary Evaporation) method. The vitamin C content in the original juice and the concentrated juices were determined by spectrophotometrically at 521 nm. *C. madurensis* was concentrated up to brix 7.9° from brix 5.4°. *S. dulcis* was concentrated up to brix 9° from 6.9° using PFC and *C. madurensis* juice was concentrated up to brix 10.6° from 7.5°. *S. dulcis* was concentrated up to 10° brix from 7° from evaporative concentration. The initial vitamin C content in NasNaaran and Ambarella were 19.87 and 26.73 ppm respectively. Vitamin C loss for PFC method for *C. madurensis* and *S. dulcis* was 18.94% and 3.47% respectively. Vitamin C loss for evaporative concentration method for *C. madurensis* and *S. dulcis* was 73.67% and 29.24% respectively. Therefore, PFC is a suitable method to concentrate liquid fruit juice compare to conventional evaporative concentration.

**Keywords:** Progressive Freeze Concentration, rotary evaporation, vitamin C, spectrophotometric method

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