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PENGEMBANGAN PRODUK MINUMAN ISOTONIK AIR KELAPA TUA
(*Cocos nucifera L.*) DENGAN PENAMBAHAN SARI PISANG RAJA
(*Musa paradisiaca L.*) DAN MADU UNTUK MENINGKATKAN
***CARDIOVASCULAR ENDURANCE* ATLET**

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xii + 98 halaman + 33 tabel, 19 gambar, 13 lampiran

ABSTRAK

Tujuan

Penelitian ini bertujuan untuk mengembangkan produk minuman isotonic air kelapa tua dengan penambahan sari pisang raja dan madu terhadap uji organoleptik dan kandungan zat gizi dalam meningkatkan *cardiovascular endurance* atlet.

Metode

Penelitian ini menerapkan metode *true experiment* dengan rancangan acak lengkap (RAL), yang mencakup empat variasi formulasi air kelapa tua dengan penambahan sari pisang raja dan madu dalam minuman isotonic yaitu terdiri dari F0 (formula kontrol), F1 (air kelapa tua 82% dan sari pisang raja 12%), F2 (air kelapa tua 77% dan sari pisang raja 17%), dan F3 (air kelapa tua 72% dan sari pisang raja 22%) dengan dua kali ulangan. Uji organoleptik dilakukan oleh 34 panelis semi-terlatih. Analisis data menggunakan uji *Kruskal-Wallis* dan *ANOVA* pada taraf signifikan 5% dengan menggunakan uji lanjut *Mann-Whitney* dan *Duncan* untuk data yang menunjukkan perbedaan nyata.

Hasil

Berdasarkan hasil penelitian menunjukkan bahwa formulasi terbaik yaitu F1 dengan karakteristik warna putih kecoklatan, aroma agak wangi, rasa manis dan tekstur cair. Formulasi ini memiliki kadar gula total 7,69%, kadar pH sebesar 4,79. Kadar kalium sebesar 171,46 mg/100 ml, kadar natrium 150,92 mg/100 ml, kadar seng sebesar 3,77 mg/kg, dan kadar tembaga sebesar <6,01 mg/kg. Penambahan sari pisang raja terbukti memengaruhi karakteristik sensori dan kandungan zat gizi pada minuman isotonic yang dihasilkan.

Kesimpulan

Berdasarkan masing-masing taraf perlakuan, formula terbaik yaitu F1 dengan air kelapa tua sebanyak 82% dan sari pisang raja sebanyak 12%.

Daftar Pustaka : 89 (2011-2025)

Kata Kunci : atlet, *cardiovascular endurance*, isotonic, kalium

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DEVELOPMENT OF AN ISOTONIC DRINK BEVERAGE BASED ON MATURE COCONUT WATER (*Cocos nucifera L.*) WITH THE ADDITION OF RAJA BANANA EXTRACT (*Musa paradisiaca L.*) AND HONEY TO IMPROVE ATHLETES CARDIOVASCULAR ENDURANCE

xii + 98 pages, 33 tables, 19 pictures, 13 appendices

ABSTRACT

Objective

This study aims to develop isotonic drink products from mature coconut water with the addition of raja banana extract and honey for organoleptic tests and nutritional content in increasing athletes' cardiovascular endurance.

Method

This study applied a true experiment method with a completely randomized design (CRD), which included four variations of mature coconut water formulation with the addition of raja banana extract and honey in isotonic drinks, namely F0 (control formula), F1 (mature coconut water 82% and raja banana extract 12%), F2 (mature coconut water 77% and raja banana extract 17%), and F3 (mature coconut water 72% and raja banana extract 22%) with two replications. Organoleptic tests were carried out by 34 semi-trained panelists. Data analysis used the Kruskal-Wallis test and ANOVA at a significance level of 5% using the Mann-Whitney and Duncan advanced tests for data showing significant differences.

Result

Based on the results of the study, it was shown that the best formulation was F1 with characteristics of brownish white color, slightly fragrant aroma, sweet taste and liquid texture. This formulation has a total sugar content of 7.69%, a pH level of 4.79. Potassium content of 171.46 mg/100 ml, sodium content of 150.92 mg/100 ml, zinc content of 3.77 mg/kg, and copper content of <6.01 mg/kg. The addition of banana extract has been shown to affect the sensory characteristics and nutritional content of the resulting isotonic drink.

Conclusion

Based on each treatment level, the best formula was F1 with 82% mature coconut water and 12% raja banana extract.

References : 89 (2011-2025)

Keywords: athletes, cardiovascular endurance, isotonic, potassium