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FORMULASI DAN UJI AKTIVITAS ANTIOKSIDAN SIRUP SARI BUAH NAGA MERAH (Hylocereus polyrhizus) DENGAN METODE DPPH (2,2 -diphenyl-1- picrylhydrazyl)

ABSTRAK

Latar belakang: Kandungan nutrisi penting yaitu senyawa antioksidan bahan alam. Antioksidan buah naga merah (*Hylocereus polyrhizus*) yaitu betasianin dan antosiani. Tujuan penelitian untuk analisis karakteristik fisik dan IC_{50} formula sediaan sirup dengan perbedaan konsentrasi.
Metode: Peneliatian eksperimental, dengan jumlah 4 sampel dengan teknik kuantitatif, variable bebas (perbedaan konsentrasi sari buah naga merah tiap formula) dan variable terikat (karakteristik fisik dan aktivitas antioksidan). Analisis *SPSS ver* 26, uji (*One way* ANOVA) post *hoc LSD*, uji *Kurskal Wallis* dan uji *Man Whitney*.
Hasil: Hasil analisis karakteristik fisik uji organoleptis meliputi warna ungu, aroma khas buah naga merah, (F1) rasa lebih manis, (F2) rasa manis dan (F3) rasa lebih manis, homogen, pH 4 dan stabil, tidak memisah dengan komponen lain. Tidak ada perbedaan tiap formula. Uji bobot jenis (F1) 1,322; (F2) 1,327; (F3) 1,330. Viskositas (F1) 45,72 cP; (F2) 47,28 cP; (F3) 49,48 cP. Uji aktivitas antioksidan sediaan sirup (F1) 48,860 *ppm*; (F2) 45,154 *ppm*; (F3) 40,821 *ppm* dan sari buah 34,747 *ppm* naga merah (*Hylocereus polyrhizus*), kategori nilai IC_{50} sangat kuat. Terdapat perbedaan bermakna yang signifikan tiap formula.
Kesimpulan: Konsentrasi sari buah naga merah (*Hylocereus polyrhizus*) tidak berpengaruh pada karakteristik fisik sediaan sirup sari buah naga, tetapi berpengaruh pada bobot jenis dan viskositas. Nilai IC_{50} sediaan sirup dan sari buah naga merah (*Hylocereus polyrhizus*) memiliki kategori sangat kuat.

Kata kunci: Sirup, antioksidan, naga merah (*Hylocereus polyrhizus*), IC_{50}.

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FORMULATION AND ANTIOXIDANT ACTIVITY TEST OF RED DRAGON FRUIT SYRUP (*Hylocereus polyrhizus*) USING DPPH METHOD
(*2,2 -diphenyl-1- picrylhydrazyl*)

ABSTRACT

Background: *Important nutritional content, namely antioxidant compounds from natural ingredients. Antioxidants of red dragon fruit (Hylocereus polyrhizus) are betacyanin and anthocyani. The aim of the study was to analyze the physical characteristics and IC_{50} of the syrup formulation with different concentrations.*
Methods: *Experimental study, with a total of 4 samples using quantitative techniques, independent variables (differences in the concentration of red dragon fruit juice for each formula) and dependent variables (physical characteristics and antioxidant activity). SPSS analysis ver 26, LSD post hoc (One way ANOVA) test, Kurskal Wallis test and Man Whitney test.*
Results: *The results of the analysis of the physical characteristics of the organoleptic test include purple color, distinctive aroma of red dragon fruit, (F1) sweeter taste, (F2) sweeter taste and (F3) sweeter taste, homogeneous, pH 4 and stable, not separated from other components. There is no difference between each formula. Specific gravity test (F1) 1.322; (F2) 1.327; (F3) 1,330. Viscosity (F1) 45.72 cP; (F2) 47.28 cP; (F3) 49.48 cP. Syrup antioxidant activity test (F1) 48.860 ppm; (F2) 45.154 ppm; (F3) 40.821 ppm and red dragon fruit juice 34.747 ppm (Hylocereus polyrhizus), the IC_{50} value category is very strong. There are significant significant differences in each formula.*
Conclusion: *The concentration of red dragon fruit juice (Hylocereus polyrhizus) has no effect on the physical characteristics of the dragon fruit juice syrup preparation, but it does affect the specific gravity and viscosity. The IC_{50} value of syrup and red dragon fruit juice (Hylocereus polyrhizus) has a very strong category*.

Keywords: *Syrup, antioxidant, red dragon (Hylocereus polyrhizus), IC_{50}.*