INTISARI

PENGARUH MALTODEKSTRIN DAN *Carboxymethyl Cellulose* SEBAGAI BAHAN PENGISI TERHADAP KARAKTERISTIK GRANULA FIKOSIANIN *Arthrospira platensis*

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan maltodekstrin dan *Carboxymethyl Cellulose* (CMC) sebagai bahan pengisi terhadap karakteristik granula ekstrak fikosianin A.platensis. Rancangan yang digunakan yakni Rancangan Acak Lengkap Pola Faktorial 2x3. Faktor yang diamati yaitu CMC dan maltodekstrin, dengan konsentrasi *Carboxymethyl Cellulose* 0,2%; 0,3%; dan 0,4% b/b) dan maltodekstrin (5% dan 7,5% b/b). Parameter yang diamati meliputi ukuran, rendemen, kadar air, pH, kemampuan ikat air (water holding capacity), total padatan terlarut, kelarutan, kadar fikosianin, dan aktivitas antioksidan. Hasil penelitian menunjukkan bahwa kadar air berkisar 2-5% dan pH ±7 (netral). Penambahan maltodekstrin dan *Carboxymethyl Cellulose* berinteraksi secara signifikan terhadap kelarutan, kadar air, dan WHC (water holding capacity) ($p<0,05$), sedangkan faktor CMC berpengaruh terhadap kadar air, kelarutan dan WHC (*water holding capacity)* ($p<0,05$) serta faktor maltodekstrin berpengaruh terhadap *yield*, kadar air, kelarutan, WHC (water holding capacity), dan aktivitas antioksidan ($p<0,05$). Perlakuan CMC konsentrasi 0,4% (C3) dan maltodekstrin konsentrasi 5% (M1) merupakan perlakuan terbaik dengan ukuran granula 406,17 µm, aktivitas antioksidan 79,19%, kelarutan 90,13%, kadar air 4,84%, yield 57,13%,dan kadar fikosianin 33,86%.

Kata kunci: granula, ekstrak fikosianin, *Arthrospira platensis*, CMC, maltodekstrin

ABSTRACT

THE EFFECT OF MALTODEXTRIN AND *Carboxymethyl Cellulose* AS FILLER MATERIALS ON THE CHARACTERISTICS OF PHYCOCYANIN GRANULA OF *Arthrospira platensis*

This study aims to determine the effect of adding maltodextrin and Carboxymethyl Cellulose as fillers on the characteristics of *A. platensis* phycocyanin extract granules. The design used was a Completely Randomized Design with a 2x3 Factorial Pattern. The factors observed were CMC and maltodextrin, with concentrations of Carboxymethyl Cellulose 0,2%; 0,3%; and 0,4% w/w) and maltodextrin (5% and 7.5% w/w). The parameters observed included size, yield, water content, pH, water holding capacity, total dissolved solids, solubility, phycocyanin content, and antioxidant activity. The results showed that the water content ranged from 2-5% and pH ±7 (neutral). The addition of maltodextrin and Carboxymethyl Cellulose interacted significantly with solubility, water content, and WHC (water holding capacity) ($p<0.05$), while the CMC factor affected water content, solubility and WHC (water holding capacity) ($p<0.05$) and the maltodextrin factor affected yield, water content, solubility, WHC (water holding capacity), and antioxidant activity ($p<0.05$). The treatment of CMC concentration of 0.4% (C3) and maltodextrin concentration of 5% (M1) was the best treatment with a granule size of 406.17 µm, antioxidant activity of 79.19%, solubility of 90.13%, water content of 4.84%, yield of 57.13%, and phycocyanin content of 33.86%.

Keywords: granules, phycocyanin extract, *Arthrospira platensis*, CMC, maltodextrin