

## Intisari

### PENGARUH KOMBINASI ISOLAT PROTEIN KEDELAI DAN MALTODEKSTRIN SEBAGAI *FILLER* TERHADAP SIFAT FISIKOKIMIA DAN AKTIVITAS ANTIOKSIDAN GRANULA BERBAHAN BAKU *PRESS CAKE* *Arthrospira platensis*

Granula merupakan kumpulan partikel kecil dengan bentuk bervariasi dan menjadi partikel tunggal yang lebih besar. Penambahan isolat protein kedelai dan maltodekstrin berperan sebagai bahan pengisi pada granula. Penelitian ini bertujuan untuk mengetahui pengaruh pembuatan granula *Arthrospira platensis* dengan metode granulasi basah serta kombinasi isolat protein kedelai dan maltodekstrin terhadap sifat fisikokimia dan aktivitas antioksidan granula. Rancangan yang digunakan adalah Rancangan Acak Lengkap Pola Faktorial 3x3 dengan faktor isolat protein kedelai (0%; 2,5%; 5% b/b) dan faktor maltodekstrin (0%; 5%; 7,5% b/b). Pengujian granula meliputi pengukuran granula, sifat fisikokimia (*yield*, pH, WHC, OHC, total padatan terlarut, kelarutan, dan kadar air), kadar protein serta aktivitas antioksidan dengan metode DPPH IC<sub>50</sub>. Hasil penelitian menunjukkan kadar air granula sesuai dengan standar 3-5% dan pH netral  $\pm 7$ . Proses pembuatan granula dari *press cake Arthrospira platensis* dapat meningkatkan ukuran granula, *yield*, WHC, OHC, total padatan terlarut, kelarutan, kadar protein, dan aktivitas antioksidan. Isolat protein kedelai berpengaruh terhadap WHC, kadar protein, dan aktivitas antioksidan ( $p < 0,05$ ), sedangkan penambahan maltodekstrin berpengaruh terhadap kelarutan dan aktivitas antioksidan ( $p < 0,05$ ). Perlakuan terbaik berdasarkan ukuran granula, *yield*, WHC, dan aktivitas antioksidan adalah konsentrasi isolat protein kedelai sebesar 5% dan konsentrasi maltodekstrin sebesar 7,5% (I3M3).

Kata kunci: granula, *Arthrospira platensis*, sifat fisikokimia, maltodekstrin, isolat protein kedelai

*Abstract*

**EFFECT OF SOY PROTEIN ISOLATE AND MALTODEXTRIN AS FILLERS TO THE PHYSICOCHEMICAL PROPERTIES AND ANTIOXIDANT ACTIVITY OF GRANULES FROM PRESS CAKE OF *Arthrospira platensis***

Granules are composed of small particles with various shapes that aggregate into larger individual particles. The addition of soy protein isolate and maltodextrin serves as filling agents in granules. This study aims to determine the effect of making *Arthrospira platensis* granules using the wet granulation method and the combination of soy protein isolate and maltodextrin on the physicochemical properties and antioxidant activity of *Arthrospira platensis* granules. The design used was a Completely Randomized Design with 3x3 factorial pattern with soy protein isolate (0%, 2.5%, 5% w/w) and maltodextrin (0%, 5%, 7.5% w/w). Physicochemical properties (yield, pH, WHC, OHC, total dissolved solids, solubility, moisture content), protein content and antioxidant activity using the DPPH IC<sub>50</sub> method of granules were determined to evaluate the product characteristic. The results showed that the moisture content of the granules was within the standard range of 3-5% and had a neutral pH of approximately 7. The process of producing granules from press cake of *Arthrospira platensis* increased the granule size, yield, WHC, OHC, total dissolved solids, solubility, protein content, and antioxidant activity. Isolated soy protein had an effect on WHC, protein content, and antioxidant activity ( $p < 0,05$ ), while the addition of maltodextrin had an effect the solubility and antioxidant activity ( $p < 0,05$ ). The best treatment based on granule size, yield, WHC, and antioxidant activity was a concentration of 5% isolated soy protein and 7.5% maltodextrin (I3M3).

**Key world:** granules, *Arthrospira platensis* physicochemical properties, maltodextrin, soy protein isolate