

## INTISARI

Maksud dan tujuan dari penelitian ini adalah untuk mengetahui dan memperoleh formulasi yang optimal *hard candy* ekstrak daun *mulberry* dengan menggunakan program *design expert* versi 7.0 metode *mixture d-optimal* berdasarkan respon kimia yang meliputi kadar air dan aktivitas antioksidan. Respon fisika meliputi uji kekerasan (tekstur) dengan alat penetrometer, dan respon organoleptik meliputi warna, kilap, rasa, dan tekstur (*mouthfeel*).

Penentuan optimalisasi formulasi ini dilakukan dengan menggunakan *Design Expert* metode *d-optimal*. Rancangan yang dilakukan adalah dengan menentukan batas bawah (*low*) dan batas atas (*high*) disetiap bahan baku yang digunakan yaitu ekstrak daun *mulberry* 0,50%-1,0%, sukrosa 45,00%-48,75%, glukosa 15,00%-16,25%, dan air 34,00%-38,00% sehingga didapat 8 formulasi.

Hasil penelitian utama menunjukkan bahwa penggunaan program *design expert* versi 7.0 metode *mixture d-optimal* dapat memberikan formulasi optimal *hard candy* ekstrak daun *mulberry* dengan penggunaan ekstrak daun *mulberry* 0,843%, sukrosa 45,750%, glukosa 15,00%, air 35,407%, dan telah diprediksikan oleh program *design expert* versi 7.0 metode *mixture d-optimal* dengan aktivitas antioksidan 0,95%, kadar air 2,94%, uji kekerasan (tekstur) 0,36%, skor atribut mutu warna 4,26 (agak kuat), skor atribut mutu kilap 4,33 (agak kuat), skor atribut mutu rasa 4,5 (kuat), dan skor atribut mutu tekstur (*mouthfeel*) 4,36 (agak kuat).

## **ABSTRACT**

*The purpose and goal of this study was to determine and obtain the optimal formulation of mulberry leaf extract of hard candy using expert design program version 7.0 d-optimal mixture method based on the chemical response that includes the water content and antioxidant activity. Response physics include hardness (texture) with a penetrometer, and sensory responses include color, gloss, flavor, and texture (mouthfeel).*

*Determination of formulation optimization is performed using Design Expert d - optimal methods . The draft is done by determining the lower limit (low ) and upper (high ) in each raw material used is the mulberry leaf extract 0.50% -1.0% , 45.00 % -48.75 % sucrose, glucose 15.00 % -16.25 % and 34.00 % -38.00 % water thus obtained 8 formulation*

*The main research results show that the use of expert design program version 7.0 d-optimal mixture method can provide an optimal formulation of hard candy with the use of mulberry leaf extract mulberry leaf extract 0.843%, 45.750% sucrose, glucose 15.00%, 35.407% water, and has been predicted by expert design program version 7.0 d-optimal mixture method with antioxidant activity of 0.95%, 2.94% moisture content, hardness (texture) of 0.36%, 4.26 color quality attribute scores (rather strong), attribute scores 4.33 luster quality (rather strong), balanced flavor quality attributes 4.5 (strong), and scores of quality attributes of texture (mouthfeel) 4.36 (rather strong).*