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 menunjukan 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).