ABSTRACT

The purpose of this research is to find out optimal formulation process of marshmallow using black mulberry leaf extract. The formulation is determined using design expert program mixture d-optimal method.

The research consists of four stages: the first stage of preparation of raw materials, the second stage is preliminary research, the third stage is determining the formulation, and the fourth stage is primary research. Chemical response includes the analysis of protein content, pH, water content analysis. Response organoleptic include color, flavor, aroma, texture. Determination of formulation optimization is performed using Design Expert method D-Optimal. The design is done by determining the lower and upper limit of black mulberry leaf extract 2.5 - 3%, gelatin 7.5 to 8%, and pectin of 1 - 1.5%. as change variable. Fixed variable are 45% water, 14% sucrose, corn syrup 29%, 7 formulation obtained and only one formulation is chosen as optimal formulation.

The main research results show that the use of expert design program with mixture design method can provide optimal formulation for marshmallow black mulberry leaf extract. With the optimal formulation is 0.285%, 7.71% gelatin, pectin 1.42%. the program predicted an of 0.285% protein content, 49.49% moisture content, hardness 1471.3 g / force2, springness 1.490, pH 4.61, 3.01 Aroma, color 1.93, 4.17 texture, flavor 3.63.

Keyword: Marshmallow, leaf extract black mulberry, design expert