INTISARI

Suci dari najis adalah salah satu syarat sah dalam beribadah. Najis *mughalladzah* merupakan najis berat yang cara menyucikannya dengan dibasuh air tujuh kali dan salah satunya menggunakan tanah. Bentonit merupakan tanah jenis lempung yang dapat digunakan sebagai penyuci najis *mughalladzah*. Bahan dasar pembuatan sabun cair adalah minyak kelapa dan kelapa sawit yang ditambah dengan basa KOH. Penelitian ini bertujuan untuk mendapatkan formula sabun bentonit yang optimum dengan kombinasi minyak kelapa dan minyak kelapa sawit.

Sabun cair bentonit dibuat menggunakan kombinasi minyak kelapa dan minyak kelapa sawit dalam lima formula yaitu FI (100%:0%), FII (75%:25%), FIII (50%:50%), FIV (25%:75%) dan FV (0%:100%) Sabun cair diuji berdasarkan sifat fisika dan kimia antara lain: organoleptik, daya busa, stabilitas busa, viskositas, bobot jenis, pH, alkali bebas dan bahan aktif (asam lemak jumlah). Setiap nilai uji dianalisis menggunakan *simplex lattice design* (SLD) untuk mendapatkan prediksi formula optimum yang selanjutnya dilakukan verifikasi terhadap hasil prediksi menggunakan analisis *one sample t-test*. Interaksi minyak kelapa dan minyak kelapa sawit mampu meningkatkan respon sifat fisika dan kimia seperti stabilitas busa dan bahan aktif, namun dapat menurunkan respon daya busa, viskositas, bobot jenis dan pH pada sabun cair bentonit. Formula optimum sabun cair bentonit diperoleh dengan komposisi minyak kelapa 95,1 % dan minyak kelapa sawit 4,9%.

Kata Kunci: Sabun cair, bentonit, najis *mughalladzah*, minyak kelapa, minyak kelapa sawit, *simplex lattice design*

ABSTRACT

Pure from *najis* is one of the requirements for a valid form of worship. *Najis mughalladzah* is the heaviest najis which is purified by washing it seven times with water and one of which contains the soil. Bentonite is a clay soil type that can be used as the purification of *najis mughalladzah.* The manufactures of liquid soap are coconut and palm oil which are added to the base KOH. This study aimed at obtaining the optimal bentonite soap formula using the combination of oil and palm oil.

Liquid soap Bentonite was made using the combination of coconut oil and palm oil in five formulas which are FI (100%: 0%), FII (75%: 25%), FIII (50%: 50%), FIV (25%: 75%) and FV (0%: 100%). Liquid soap was examined based on the physical and chemical properties, such as organoleptic, power foam, foam stability, viscosity, density, pH, free alkali and active ingredient (total fatty acid). Each test value was analyzed using *Simplex Lattice Design* (SLD) to obtain optimum prediction formula. Then, it was verified to the prediction using the analysis of one sample t-test. The interaction of coconut oil and palm oil could improve the physical and chemical properties of the response such as foam stability and active ingredients, but it decreased the power response of foam, viscosity, specific gravity and pH of the liquid soap bentonite. The optimum formula of liquid soap bentonite was obtained with the composition 95.1% coconut oil and palm oil 4.9%.

Keywords: liquid soap, bentonite, *najis mughalladzah*, coconut oil, palm oil, *Simplex Lattice Design*