ABSTRAK

ANALISIS KANDUNGAN MUTU EKSTRAK PEKTIN DARI KULIT PISANG KASTROLI (*Musa paradisiaca* var. Kastroli) SEBAGAI *EMULSIFIER* MENGGUNAKAN METODE SONIKASI

Penambahan pektin ke dalam emulsi dapat mengubah karakteristik emulsi dan kestabilan emulsinya. Namun, sumber pektin secara industri masih terbatas sehingga diperlukan sumber pektin berbiaya rendah seperti kulit pisang yang merupakan produk sampingan industri rumahan yang kaya akan pektin. Pada penelitian ini digunakan jenis kulit pisang yang keberadaanya masih awam di telinga masyarakat yaitu pisang kastroli sebagai sumber ekstrak pektin. Penelitian ini bertujuan untuk menentukan suhu dan waktu ekstraksi sonikasi terbaik untuk menghasilkan rendemen pektin tertinggi dan kualitas yang paling baik sesuai standar mutu pektin menurut IPPA (*International Pectin Producers Association*), serta mengidentifikasi kestabilan gel pektin sebagai emulsifier. Metode ekstraksi dilakukan dengan memanfaatkan gelombang ultrasonik 37 kHz dari Elmasonic S30H menggunakan pelarut asam sitrat 5%. Ekstrak pektin KPK (Kulit Pisang Kastroli) selanjutnya diuji kandungan mutunya sesuai dengan parameter pektin menurut IPPA untuk mengetahui kualitas pektin terbaik. Hasil pengujian menunjukkan bahwa ekstraksi pada suhu 70℃ selama 15 menit memberikan hasil rendemen yang tinggi yaitu 12,96% namun tidak memberikan kualitas pektin yang baik. Hasil ekstrak pektin KPK kualitas terbaik yaitu pada perlakuan suhu 60℃ selama 30 menit. Selanjutnya pektin terbaik dilakukan karakterisasi FTIR dan uji kestabilan emulsi. Hasil karakterisasi FTIR menunjukkan bahwa gugus fungsi yang dihasilkan sesuai dengan gugus fungsi pektin standar. Hal ini menunjukkan bahwa hasil ekstraksi adalah benar senyawa pektin. Gel pektin dapat stabil sebagai pengemulsi pada konsentrasi rendah yaitu 5 mg. Hasil penelitian secara umum menunjukkan bahwa pektin dari kulit pisang kastroli telah memenuhi standar mutu IPPA, pektin KPK juga dapat dimanfaatkan sebagai pengemulsi pada industri, seperti industri pangan.

Kata- kata kunci: FTIR; kulit pisang kastroli; kestabilan emulsi; pektin; standar mutu IPPA.

ABSTRACT

ANALYSIS OF THE QUALITY CONTENT OF PECTIN EXTRACT FROM KASTROLI BANANA PEEL (Musa paradisiaca var. Kastroli) AS AN EMULSIFIER USING SONICATION METHOD

The addition of pectin to the emulsion can change the emulsion and the emulsion stability. However, the industrial sources of pectin are still limited, so a low cost source of pectin is needed, such as banana peels, which are a byproduct of the home industry which is rich in pectin. In this study, a type of banana peel that is still common in the ears of the community was used, namely the kastroli banana as a source of pectin extract. This study aims to determine the best sonication extraction temperature and time to produce the highest pectin yield and the best quality according to the pectin quality standard according to IPPA (International Pectin Producers Association), as well as to identify the stability of the pectin gel as an emulsifier. The extraction method was carried out using 37 kHz ultrasonic waves from Elmasonic S30H using 5% citric acid as a solvent. The pectin extract of the KPK (Kastroli Banana Peel) was then tested for its quality content according to the pectin parameter according to IPPA to see the best pectin quality. The test results showed that extraction at a temperature of 70 °C for 15 minutes gave a high yield of 12,96% but did not provide good pectin quality. The best quality KPK pectin extract results were at a temperature of 60 perlakuan for 30 minutes. Furthermore, the best pectin was carried out by FTIR characterization and emulsion stability test. The results of FTIR characterization showed that the functional groups produced were in accordance with the standard pectin functional groups. This shows that the extraction yield is true of pectin compounds. Pectin gel can be stable as an emulsifier at a low concentration of 5 mg. The results of general research indicate that the pectin from the banana peel of castor oil has met the IPPA quality standard. The Pectin KPK can also be used as an emulsifier in industries, such as the food industry.

Keywords: FTIR; kastroli banana peel; emulsion stability; pectin; IPPA quality standards.