

**Perubahan Sifat Fisik, Kimia, dan Komponen Non Volatil Petai (*Parkia Speciosa* Hassk.)
selama Perebusan**

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Abstrak

Petai (*Parkia speciosa* Hassk.) adalah jenis legume dari famili *Mimosae*. Petai mempunyai cita-rasa pahit dan unik. Biji petai sering dikonsumsi sebagai lalapan maupun diolah terlebih dahulu, salah satunya dengan cara direbus. Perebusan dapat mempengaruhi komponen gizi dan cita rasa yang terkandung dalam bahan pangan. Penelitian ini bertujuan untuk mengetahui dan mempelajari akibat variasi waktu perebusan terhadap sifat fisik-kimia dan komponen Non-Volatil petai. Perebusan dilakukan pada dengan variasi waktu 0, 20, 40, 60, dan 90 menit. Analisis komponen non-volatil untuk asam amino bebas, 5-nukleotida, gula terlarut dan asam organik menggunakan *High Performance Liquid Chromatography* (HPLC). Uji mineral menggunakan *Atomic Absorption Spectrophotometer* (AAS).

Hasil penelitian menunjukkan bahwa akibat perebusan menyebabkan terjadinya kenaikan pada bobot hingga 42,1 %, kadar air hingga 224,4 % bk, kadar lemak hingga 9,79 % bk, dan kadar karbohidrat hingga 10,15 % bk. Sedangkan penurunan terjadi pada nilai *hardness* hingga 197 g, kadar protein hingga 50,03% bk, dan kadar abu hingga 16,29% bk. Perebusan juga mengakibatkan penurunan terhadap komponen non-volatil yang berpotensi terhadap rasa petai antara lain sukrosa, glukosa, fruktosa yang memberikan kontribusi rasa manis. Asam oksalat, sitrat, suksinat dan butirat yang memberikan sensasi rasa sedikit asam. Mineral (K, Mg, Ca, P) yang memberikan sensasi rasa asin, asam-asam amino bebas fenilalanin, metionin, dan histidin yang memberikan sensasi rasa pahit, serta asam-asam amino bebas serin, glisin dan arginin yang memberikan sensasi rasa manis. MSG-like dari asam amino bebas (aspartat dan glutamat) dan 5'-nukleotida (AMP, GMP, IMP) memberikan rasa gurih atau umami. Intensitas rasa umami dihitung dengan rumus KEU (Konsentrasi Ekuivalen Umami). Nilai KEU petai segar rendah yaitu 3,99 g/100g atau ekuivalen dengan 0,0399 MSG. Nilai ini turun seiring lamanya perebusan.

Kata kunci: Petai (*Parkia speciosa* Hassk.), perebusan, sifat fisik-kimia, komponen non volatil, konsentrasi ekuivalen umami

Changes in Physical, Chemical Properties, and Non Volatile Petai Compounds (*Parkia Speciosa* Hassk.) during Boiling

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Abstract

Petai (*Parkia speciosa* Hassk.) is a legume of the *Mimosae* family. Petai has a bitter taste and unique. Petai seeds are often consumed as fresh vegetable or processed, one of them by boiling. Boiling can affect the nutritional components and flavors contained in the food. This study aims to determine and study the effects of boiling time variations on physical-chemical properties and Non-Volatile components of Petai. Boiling is done at a time of 0, 20, 40, 60, and 90 minutes. Analysis of non-volatile components for free amino acids, 5-nucleotides, dissolved sugars and organic acids using High Performance Liquid Chromatography (HPLC). Minerals test using Atomic Absorption Spectrophotometer (AAS).

The results showed that the boiling effect caused an increase in weight up to 42.1%, water content up to 224.4% db, fat content up to 9.79% db, and carbohydrate levels up to 10.15% db. While the decline occurred in hardness values up to 197 g, protein levels up to 50.03% db, and ash up to 16.2 9% db. Boiling also results in a decrease in non-volatile components that have potential to taste petai include sucrose, glucose, fructose that contribute sweet taste. Oxalic acid, citric, succinate and butyrate provide a slightly acidic taste sensation. The minerals (K, Mg, Ca, P) provide a salty taste sensation, phenylalanine-free amino acids, methionine, and histidine that provide a bitter taste sensation, as well as serine-free amino acids, glycine and arginine that give the sensation of sweetness. MSG-like of free amino acids (aspartates and glutamates) and 5'-nucleotides (AMP, GMP, IMP) provide a savory or umami taste. The intensity of umami taste is calculated by the formula EUC (Equivalent Umami Concentration). Fresh petai EUC value is low ie 3.99 g / 100g or equivalent with 0.0399 MSG. This value falls with the length of boiling.

Keywords: Petai (*Parkia speciosa* Hassk.), boiling, physical-chemical properties, non volatile compounds, equivalent umami concentrations, umami