

**PROFIL SENYAWA GIZI, ANTIGIZI, DAN KECERNAAN PROTEIN SECARA IN
VITRO BIJI JENGKOL (*Pithecellobium jiringa*) REBUS, KUKUS, DAN GORENG**

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INTISARI

Biji Jengkol (*Pithecellobium jiringa*) merupakan legum khas Indonesia dengan kandungan protein dan senyawa anti gizi yang tinggi, sehingga dapat menurunkan nilai cerna protein serta memberikan dampak negatif bila dikonsumsi secara berlebihan. Proses pengolahan dapat menurunkan senyawa anti gizi dan meningkatkan nilai cerna protein biji jengkol, tetapi akan berdampak pada komponen gizi lainnya. Penelitian ini bertujuan untuk menentukan pengaruh proses pengolahan (kukus, rebus, goreng) terhadap perubahan senyawa gizi (air, abu, protein, lemak, karbohidrat, profil asam amino), anti gizi (asam jengkolat, tannin, tripsin inhibitor) dan nilai cerna protein biji jengkol secara *in vitro*.

Penelitian dilakukan dalam 2 tahap. Tahap pertama bertujuan untuk memperoleh waktu optimum dari setiap proses pengolahan, yang menghasilkan biji jengkol dengan karakteristik fisik terbaik. Perebusan selama 30, 40 dan 50 menit pengukusan dilakukan selama 30, 40 dan 50 menit, dan penggorengan dilakukan selama 6, 8, dan 10 menit. Biji jengkol dengan waktu optimum dari setiap proses pengolahan dikeringkan dan dibubukkan hingga lolos ayakan 40 mesh. Bubuk biji jengkol selanjutnya dianalisis lebih lanjut senyawa gizi, anti gizi, dan nilai cerna protein *in vitro*.

Hasil penelitian menunjukkan bahwa karakteristik biji jengkol terbaik yaitu biji jengkol rebus 40 menit, kukus 40 menit, dan goreng 8 menit berdasarkan parameter tekstur. Pengukusan dan perebusan signifikan menurunkan kadar abu dan protein biji jengkol. Penggorengan signifikan meningkatkan kadar lemak biji jengkol dan menurunkan parameter gizi lainnya. Secara umum, ketiga proses pengolahan signifikan menurunkan profil asam amino, asam jengkolat, tannin dan tripsin inhibitor. Perebusan, pengukusan, dan penggorengan tidak menyebabkan perubahan signifikan terhadap nilai cerna protein *in vitro* biji jengkol.

Kata kunci:

Biji jengkol, proses pengolahan, komponen gizi, senyawa anti gizi, nilai cerna protein *in vitro*

**PROFILE OF NUTRITIONAL, ANTINUTRITIONAL, AND IN VITRO PROTEIN
DIGESTABILITY IN BOILED, STEAMED, AND FRIED JENGKOL SEEDS
(*Pithecellobium jiringa*)**

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ABSTRACT

Jengkol Seed (*Pithecellobium jiringa*) is an Indonesian indigenous legume with high value of protein and rich of some antinutrient compounds which cause of decreasing protein digestibility and have a negative impact when it consumed excessively. Some of processing can decrease their antinutrient compounds and increase digestibility of protein, but they influence other nutrient compounds. The aim of this research is to determine the effect of processing methods (boiling, steaming, and frying) on nutrient compounds (moisture, ash, protein, fat, carbohydrate, total amino acids), antinutrient compounds (djenkolic acid, tannin, trypsin inhibitor) and in vitro protein digestibility of Jengkol Seed.

The study was conducted in 2 stages. The first stage aims to obtain the optimum time of any processing, which produces jengkol seeds with the best physical characteristics. Boiling for 30, 40 and 50 minutes, steaming for 30, 40, and 50 minutes, and frying done for 6, 8, and 10 minutes. Jengkol Seeds with the optimum time of each processing are dried and powdered to pass 40 mesh sieve. The powder of jengkol seed then further analyzed the nutritional and antinutritional compounds, and in vitro protein digestibility.

The results showed that the best characteristics of jengkol seeds were boiled for 40 minutes, steamed for 40 minutes, and fried for 8 minutes based on texture parameters. Steaming and boiling significant decrease ash and protein levels. Frying significantly increases the fat content of jengkol seed and lowers other nutritional parameters. In general, all the processing significant decrease amino acid profile, djenkolic acid, tannin and trypsin inhibitor. Boiling, steaming, and frying do not cause significant changes to the in vitro protein digestibility.

Keywords:

Jengkol seeds, processing, nutritional components, antinutritional compounds, in vitro protein digestibility