

INTISARI

Biji lamtoro mlanding [*Leucaena leucocephala* (Lam.) de Wit] merupakan komoditas legum subfamili Fabaceae yang memiliki kandungan protein yang tinggi. Namun biji lamtoro mlanding juga mengandung senyawa antigizi mimosin, tanin, dan asam fitat yang dapat menurunkan kecernaan protein serta memberikan dampak negatif bila dikonsumsi. Proses perkecambahan berpotensi menurunkan senyawa antigizi dan meningkatkan senyawa gizi serta kecernaan proteinnya, namun kulit biji lamtoro mlanding yang keras dan impermeabel mempersulit proses perkecambahan. Penelitian ini bertujuan untuk mengetahui suhu dan durasi skarifikasi proses perkecambahan terbaik yang dapat menghasilkan persen imbibisi, persen perkecambahan, dan kecepatan perkecambahan biji yang paling tinggi, serta mengetahui bagaimana karakteristik senyawa gizi, antigizi dan kecernaan protein *in vitro* biji lamtoro mlanding selama proses perkecambahan.

Penelitian ini dilakukan dalam 2 tahap. Tahap pertama bertujuan untuk mengetahui suhu dan durasi skarifikasi yang dapat menghasilkan persen imbibisi, persen perkecambahan, dan kecepatan perkecambahan biji yang paling tinggi. Skarifikasi perkecambahan dilakukan pada suhu 50, 70, dan 90°C selama 5, 10, dan 15 menit. Suhu dan durasi skarifikasi perkecambahan terbaik digunakan pada penelitian tahap kedua untuk mengetahui karakteristik senyawa gizi, antigizi dan kecernaan protein *in vitro* biji lamtoro mlanding pada proses perkecambahan selama 0, 24, 48, dan 72 jam.

Hasil penelitian menunjukkan bahwa suhu dan durasi skarifikasi perkecambahan biji lamtoro mlanding terbaik adalah 70°C selama 15 menit. Selama proses perkecambahan terjadi peningkatan signifikan kadar air dan protein kasar serta penurunan kadar abu, lemak, dan protein terlarut. Selain itu proses perkecambahan menurunkan senyawa antigizi mimosin, tanin dan asam fitat serta meningkatkan nilai kecernaan protein *in vitro* biji lamtoro mlanding dengan signifikan.

Kata kunci : Biji lamtoro mlanding, perkecambahan, gizi, antigizi, kecernaan protein *in vitro*.

ABSTRACT

Lamtoro mlanding seeds [*Leucaena leucocephala* (Lam.) De Wit] are belong to legumes Fabaceae subfamily which have a high protein content. However, lamtoro mlanding seeds also contain anti-nutritional compounds mimosin, tannins, and phytic acid which can reduce the protein digestibility and have a negative impact when it consumed. The germination process is potential to reduce anti-nutritional compounds, increase nutritional compounds and increase the protein digestibility. However, the hard and impermeable skin layer of lamtoro mlanding seeds complicates the germination process. This study aims to determine the best temperature and duration of germination scarification process that can produce the highest imbibition percentage, percent germination, and seeds germination speed, as well as to determine the characteristics of nutritional, anti-nutritional compounds and in vitro protein digestibility of lamtoro mlanding seeds during the germination process.

This research was conducted in 2 stages. The first stage aims to determine the best temperature and duration of germination scarification. Germination scarification was carried out at temperatures of 50, 70, and 90 ° C for 5, 10, and 15 minutes. The best temperature and duration of germination scarification were used in the second phase of this research to determine the characteristics of nutritional, anti-nutritional compounds and in vitro protein digestibility of lamtoro mlanding seeds in the germination process for 0, 24, 48, and 72 hours. The results showed that the best temperature and duration of germination scarification of lamtoro mlanding was 70 ° C for 15 minutes. During the germination process, there was a significant increase in the total water and protein content and a decrease in the ash, fat, and soluble protein content. The germination process also significantly reduced the anti-nutritional compounds mimosin, tannins and phytic acid and increased the in vitro protein digestibility value of lamtoro mlanding seeds.

Key words: Lamtoro mlanding seed, germination, nutrition, anti-nutrition, in vitro protein digestibility.

