

ABSTRAK

ELITA ASRI. Pengembangan Buku Ajar Berbasis Riset Induksi Pertumbuhan Tunas Tanaman Manggis (*Garcinia mangostana* L.) secara *In Vitro* pada Mata Kuliah Kultur Jaringan. Tesis. Medan: Program Pascasarjana Universitas Negeri Medan, 2025.

Pengembangan buku kultur jaringan berbasis riset perlu dilakukan karena buku kultur jaringan berbasis riset masih sangat terbatas. Penelitian ini bertujuan untuk menghasilkan buku ajar berbasis riset induksi pertumbuhan tunas manggis (*Garcinia mangostana* L.) secara *In Vitro* pada mata kuliah kultur jaringan. Penelitian ini merupakan penelitian pengembangan dengan model 4-D. Data dikumpulkan menggunakan kuesioner terstruktur dengan skala Likert untuk mengetahui penilaian ahli materi, ahli desain pembelajaran, ahli desain *layout*, respon dosen dan respon mahasiswa. Teknik analisis berupa analisis kuantitatif dan analisis kualitatif. Hasil validasi dari dua ahli materi menunjukkan perolehan skor 83,8% dan dikategorikan sangat baik, hasil validasi ahli desain pembelajaran memperoleh skor 93,9% dan dikategorikan sangat baik, validasi ahli desain *layout* memperoleh skor 94,8% dikategorikan sangat baik, hasil tanggapan dosen memperoleh skor 94,1% dikategorikan sangat baik dan hasil tanggapan mahasiswa menunjukkan perolehan nilai yang terdiri dari uji coba individu sebesar 86,8%, uji coba kelompok kecil sebesar 85,2% dan uji coba kelompok lapangan terbatas sebesar 89,3% dikategorikan sangat baik. Efektivitas buku berdasarkan hasil perhitungan uji N-Gain skor dinyatakan cukup efektif untuk meningkatkan hasil kognitif mahasiswa dalam matakuliah kultur jaringan. Dapat disimpulkan bahwa buku kultur jaringan berbasis riset sterilisasi eksplan dan induksi pertumbuhan tunas manggis (*Garcinia mangostana* L.) secara *in vitro* sangat layak dan cukup efektif digunakan sebagai salah satu sumber buku penunjang dalam mata kuliah kultur jaringan.

Kata Kunci: Buku Ajar Berbasis Riset, Manggis, *In Vitro*, Kultur Jaringan

ABSTRACT

ELITA ASRI. Development of a Research-Based Textbook on In Vitro induction of shoot growth of Mangosteen (*Garcinia mangostana* L.) for the Tissue Culture Course. Thesis. Medan: Postgraduate Program, State University of Medan, 2025.

The development of a research-based tissue culture textbook needs to be carried out because such textbooks are still very limited. This study aims to produce a research-based textbook on induction of shoot growth of mangosteen (*Garcinia mangostana* L.) in vitro for the tissue culture course. This research is a development study using the 4-D model. Data were collected using a questionnaire with a Likert scale to assess the evaluation of subject matter experts, instructional design experts, layout design experts, lecturers, and student responses. The analysis techniques used were quantitative and qualitative analysis. The validation results from two subject matter experts showed a score of 83.8%, categorized as very good. The validation from the instructional design expert obtained a score of 93.9%, categorized as very good. The layout design expert validation obtained a score of 94.8%, categorized as very good. The lecturers' feedback resulted in a score of 94.1%, categorized as very good. The students' responses indicated the following scores: individual trials, 86.8%; small group trials, 85.2%; and limited field trials, 89.3%, all categorized as very good. The effectiveness of the book, based on N-Gain test calculations, was found to be quite effective in improving students' cognitive outcomes in the tissue culture course. It can be concluded that the research-based tissue culture book on explant sterilization and induction of mangosteen shoot growth (*Garcinia mangostana* L.) is very feasible and sufficiently effective to be used as one of the supporting textbook for the tissue culture course.

Keywords: Research-Based Textbook, Mangosteen, In Vitro, Tissue Culture

