

ABSTRAK

ANITA RASUNA SARI SIREGAR. Pengembangan Buku Kultur Jaringan Berbasis Riset Induksi Pembentukan *Protocorm-Like Body* (PLB) dan Regenerasi Anggrek *Cattleya* sp. Secara *In Vitro*. Tesis. Medan: Program Pascasarjana Universitas Negeri Medan, Oktober 2023

Pengembangan buku kultur jaringan berbasis riset perlu dilakukan sebab buku kultur jaringan berbasis riset masih sangat terbatas. Penelitian ini bertujuan untuk menghasilkan buku referensi berbasis riset induksi pembentukan *Protocorm-Like Body* (PLB) dan regenerasi anggrek *Cattleya* sp. secara *in vitro*. Penelitian ini merupakan penelitian pengembangan dengan model 4-D. Data dikumpulkan menggunakan kuesioner berstruktur 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 menunjukkan, dari dua ahli materi diperoleh skor 86,45% dikategorikan sangat baik, validasi ahli desain pembelajaran diperoleh skor 94% dikategorikan sangat baik, validasi ahli desain *layout* diperoleh skor 97,6% dikategorikan sangat baik, hasil tanggapan dosen diperoleh skor 93,42% dikategorikan sangat baik dan hasil tanggapan mahasiswa diperoleh yang terdiri dari uji coba individu sebesar 89,12%, uji coba kelompok kecil diperoleh 90,39% dan uji coba kelompok lapangan terbatas diperoleh 90,46% dikategorikan sangat baik. Keefektifitas 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 induksi pembentukan *Protocorm-Like Body* (PLB) dan regenerasi anggrek *Cattleya* sp. secara *in vitro* sangat layak dan cukup efektif digunakan sebagai salah satu sumber buku penunjang dalam pembelajaran kultur jaringan.

Kata Kunci : Buku pengembangan, Berbasis riset, Kultur jaringan, Anggrek *Cattleya* sp.

ABSTRACT

ANITA RASUNA SARI SIREGAR. Development of a Research-Based Tissue Culture Book on the Formation of Protocorm-Like Body (PLB) and Regeneration of *Cattleya* sp. In Vitro. Thesis. Medan: Postgraduate Program, State University of Medan, October 2023

The development of research-based tissue culture books needs to be done because research-based tissue culture books are still very limited. This study aims to produce a reference book based on induction research on the formation of a Protocorm-Like Body (PLB) and the regeneration of the *Cattleya* sp. in vitro. This research is a development research with a 4-D model. Data was collected using a structured questionnaire with a Likert scale to determine the assessment of material experts, learning design experts, layout design experts, lecturer responses and student responses. The analysis technique is in the form of quantitative analysis and qualitative analysis. The results of the validation showed that from two material experts a score of 86.45% was categorized as very good, the validation of learning design experts obtained a score of 94% which was categorized as very good, validation of layout design experts obtained a score of 97.6% which was categorized as very good, the results of the lecturer's responses obtained a score of 93.42% was categorized as very good and the results of student responses were obtained which consisted of individual trials of 89.12%, small group trials obtained 90.39% and limited field group trials obtained 90.46% which were categorized as very good. The effectiveness of the book based on the results of calculating N-Gain test scores is stated to be quite effective in improving students' cognitive results in tissue culture courses. It can be concluded that this tissue culture book is based on research into the induction of Protocorm-Like Body (PLB) formation and regeneration of *Cattleya* sp. in vitro is very feasible and effective enough to be used as a supporting book source in learning tissue culture.

Keywords: Book development, Research based, Tissue culture, *Cattleya* sp.