

ABSTRAK

RIRIN DWI ASTUTI. Pengembangan Buku Kultur Jaringan Berbasis Riset Induksi Kalus Manggis (*Garcinia mangostana* L.) secara *In Vitro* dengan Pemberian Zat Pengatur Tumbuh. Tesis. Program Pascasarjana Universitas Negeri Medan. 2020.

Penelitian ini bertujuan untuk mengetahui kelayakan buku kultur jaringan berbasis riset induksi kalus manggis (*Garcinia mangostana* L.) secara *in vitro* dengan pemberian zat pengatur tumbuh. Subjek dalam penelitian ini adalah (1) dua orang dosen ahli materi, (2) dua orang dosen ahli desain pembelajaran, (3) satu orang dosen ahli desain *layout* buku, (4) satu orang dosen pengampu matakuliah kultur jaringan dan (5) mahasiswa jurusan Biologi Universitas Negeri Medan. Penelitian ini merupakan penelitian pengembangan dengan model 4-D modifikasi dengan 3 tahap yaitu *define*, *design* dan *development*. Hasil penelitian menunjukkan bahwa (1) penilaian dua orang dosen ahli materi berdasarkan kelayakan isi, kelayakan penyajian dan keterbacaan diperoleh skor rata-rata sebesar 4,51 atau persentase 90,31% dengan kriteria sangat baik, (2) penilaian dua orang dosen ahli desain pembelajaran berdasarkan kesesuaian materi, sistematika penyampaian materi, efisiensi buku kultur jaringan dan kebahasaan diperoleh skor rata-rata sebesar 4,35 atau persentase 87,01% dengan kriteria sangat baik, (3) penilaian oleh dosen ahli desain *layout* buku berdasarkan ukuran buku, desain sampul dan desain isi buku diperoleh skor rata-rata sebesar 5,00 atau persentase 100% dengan kriteria sangat baik, (4) penilaian oleh dosen pengampu matakuliah kultur jaringan diperoleh skor rata-rata sebesar 4,27 atau persentase 85,38% dengan kriteria sangat baik dan (5) penilaian oleh mahasiswa termasuk kriteria sangat baik yang terdiri dari uji coba perorangan diperoleh skor rata-rata 4,58 atau persentase 91,61%, uji coba kelompok kecil diperoleh skor rata-rata 4,44 atau persentase 88,74% dan uji coba kelompok lapangan diperoleh skor rata-rata 4,26 atau persentase 85,12%. Sehingga dapat disimpulkan bahwa buku kultur jaringan berbasis riset yang dikembangkan telah layak menurut dosen ahli materi, desain pembelajaran, desain *layout* buku, dosen pengampu matakuliah kultur jaringan dan mahasiswa sehingga buku kultur jaringan berbasis riset pada topik induksi kalus manggis (*Garcinia mangostana* L.) secara *in vitro* dengan pemberian zat pengatur tumbuh dapat digunakan sebagai buku pendamping/tambahan bagi dosen, mahasiswa, pembaca secara umum dan peneliti yang tertarik dibidang kultur jaringan.

Kata kunci: *Pengembangan, buku referensi, riset, induksi kalus manggis (Garcinia mangostana L.), in vitro, zat pengatur tumbuh.*

ABSTRACT

RIRIN DWI ASTUTI. Development of Research Based Tissue Culture Book on Callus Induction of Mangosteen (*Garcinia mangostana* L.) In Vitro with Addition of Growth Regulators. Thesis. Postgraduate Program in Medan State University. 2020.

This aims of this study was to determine the feasibility of research based tissue culture book on callus induction of mangosteen (*Garcinia mangostana* L.) in vitro with addition of growth regulators. The subjects of this study were (1) two material lecturers, (2) two instructors of learning design experts, (3) one expert lecturer of book layout design, (4) one lecturer of tissue culture and (5) students seventh semester in Biology Majoring, Medan State University. This research is a development research with a modified 4-D model with 3 stages, namely define, design and development. The results of research showed that (1) the assessment of two expert for learning material based on the feasibility of material content, presentation and readability obtained an average score of 4.51 or 90.31% with very good criteria, (2) the assessment of two experts for instructional design based on material suitability, systematic delivery of material, efficiency of tissue culture book and linguistic score obtained an average score of 4.35 or 87.01% with very good criteria, (3) the assessment by book layout design expert lecturers based on book size, cover design and design of book content obtained an average score of 5.00 or 100% with very good criteria, (4) the assessment by the tissue culture lecturers is obtained an average score of 4.27 or 85.38% with very good criteria and (5) the assessment by students includes a very good criteria consisting of individual trials were obtained an average score 4.58 or 91.61%, small group trials were obtained an average score 4.44 or 88.74% and field trials were obtained an average score 4.26 or 85.12%. So it can be concluded that the research-based tissue culture books are feasible according to material expert lecturers, intruactional design, book layout design, lecturer tissue culture and students so research-based tissue culture book on the topic of callus induction of mangosteen (*Garcinia mangostana* L.) in vitro with addition of growth regulators can be used as a supplementary book for lecturers, students, readers in general and researchers interested in the field of tissue culture.

Keywords: Development, reference books, research, callus induction of mangosteen (Garcinia mangostana L.), in vitro, plant growth regulator.