ABSTRAK

AYU YUSNA. Pengembangan Buku Kultur Jaringan Berbasis Riset Induksi Kalus Manggis (*Garcinia mangostana* L.) dan Deteksi Alkaloid dan Flavonoid. Tesis. Program Pascasarjana Universitas Negeri Medan. 2019.

Penelitian ini bertujuan untuk mengetahui kelayakan buku kultur jaringan berbasis riset induksi kalus manggis dan deteksi alkaloid dan flavonoid. 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 semester VII 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 persentase sebesar 92,27% dengan kategori sangat baik, (2) penilaian dua orang ahli desain pembelajaran berdasarkan kesesuaian materi, sistematika penyampaian materi, efisiensi buku kultur jaringan, dan kebahasaan diperoleh skor rata-rata persentase sebesar 94,05% dengan kategori sangat baik, (3) penilaian oleh dosen ahli desain layout buku berdasarkan ukuran buku, desain sampul dan desain isi buku diperoleh skor rata-rata persentase sebesar 100% dengan kategori sangat baik, (4) penilaian oleh dosen pengampu matakuliah kultur jaringan diperoleh skor rata-rata persentase sebesar 94,77% dengan kategori sangat baik dan (5) penilaian oleh mahasiswa termasuk kategori sangat baik yang terdiri dari uji coba perorangan diperoleh 94,18%, uji coba kelompok kecil diperoleh 95,23% dan uji coba kelompok lapangan diperoleh 83,15%. 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 dan deteksi alkaloid dan flavonoid dapat digunakan sebagai buku pendamping/tambahan bagi dosen, mahasiswa, pembaca secara umum dan peneliti yang tertarik di bidang kultur jaringan.

Kata kunci : *Pengembangan, buku referensi, riset, induksi kalus manggis (Garcinia mangostana L.), alkaloid dan flavonoid.*

ABSTRACT

AYU YUSNA. Development of Research Based Tissue Book on Induction of Mangosteen Callus (*Garcinia mangostana* L.) and Detection of Alkaloids and Flavonoids. Thesis. Postgraduate Program in Medan State University. 2019.

This aims of this study was to determine the feasibility of research based tissue culture book of mangosteen callus induction and detection of alkaloids and flavonoids. 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 92.27% with very good categories, (2) the assessment of two experts for instructional design based on material suitability, systematic delivery of material, efficiency of tissue culture book, and linguistic scores obtained an average percentage of 94.05% with very good categories, (3) the assessment by book layout design expert lecturers based on book size, cover design and design of book content obtained average scores the average percentage of 100% is very good, (4) the assessment by the tissue culture lecturers is obtained an average score of 94.77% with a very good category and (5) the assessment by students includes a very good category consisting of individual trials were obtained 94.18%, small group trials were obtained 95.23% and field trials were obtained 83.15%. So it can be concluded that the research-based tissue culture books are feasible according to material expert lecturers, instructional design, book layout design, lecturer tissue culture and students so research-based tissue culture book on the topic of mangosteen callus induction and detection alkaloids and flavonoids 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, induction of mangosteen callus (Garcinia mangostana L.), alkaloids and flavonoids.