

ABSTRAK

HARIFAH INSANI. Pengembangan Buku Ajar Berbasis Riset Perbanyak Tanaman Nanas (*Ananas comosus* L.) Asal Sipahutar Secara *In Vitro* Pada Matakuliah Kultur Jaringan. Tesis. Program Pascasarjana Universitas Negeri Medan. 2018.

Penelitian ini bertujuan untuk mengetahui kualitas dan kelayakan pengembangan buku ajar kultur jaringan tanaman berbasis riset pada topik perbanyak tanaman nanas asal Sipahutar secara *in vitro*. Subjek dalam penelitian ini adalah (1) dua orang dosen ahli materi, (2) satu orang dosen ahli desain pembelajaran, (3) satu orang dosen ahli desain *layout* buku, (4) dua orang dosen pengampu matakuliah kultur jaringan dan (5) mahasiswa semester VIII kelas A reguler jurusan Pendidikan 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 95% dengan kategori sangat baik, (2) penilaian oleh dosen ahli desain pembelajaran berdasarkan kesesuaian materi dengan SK dan KD, evaluasi, ketersediaan latihan, efisiensi buku ajar dalam pembelajaran, dan bahasa diperoleh skor rata-rata persentase sebesar 95% dengan kategori sangat baik, (3) penilaian oleh dosen ahli desain *layout* buku berdasarkan tampilan buku dan keterbacaan diperoleh skor rata-rata persentase sebesar 93% dengan kategori sangat baik, (4) penilaian oleh dua orang dosen pengampu matakuliah kultur jaringan diperoleh skor rata-rata persentase sebesar 81% dengan kategori sangat baik dan (5) penilaian oleh mahasiswa termasuk kategori sangat baik yang terdiri dari uji coba perorangan diperoleh 82%, uji coba kelompok kecil diperoleh 85% dan uji coba kelompok lapangan diperoleh 86%. Sehingga dapat disimpulkan bahwa buku ajar berbasis riset yang dikembangkan telah layak menurut dosen ahli materi, desain pembelajaran, desain *layout* buku, dosen pengampu matakuliah kultur jaringan dan mahasiswa sehingga buku ajar berbasis riset pada topik perbanyak tanaman nanas asal Sipahutar secara *in vitro* dapat digunakan sebagai sebagai bahan untuk memperoleh informasi lain selain buku pedoman mahasiswa.

Kata kunci : *Pengembangan, buku ajar, riset, Nanas (Ananas comosus L.) Sipahutar, in vitro*

ABSTRACT

HARIFAH INSANI. The Development of Research-based Textbook on Sipahutar Pineapple (*Ananas comosus* L.) *In Vitro* Micropropagation for the Course of Tissue Culture. Thesis. Postgraduate Program of Universitas Negeri Medan. 2018.

The aims of this study were to determine the quality and feasibility of research-based tissue culture textbook for the topic of Sipahutar pineapple *in vitro* micropropagation. The subjects of this study were (1) two experts for learning material, (2) one expert for instructional design, (3) one expert for book layout design, (4) two lecturers of tissue culture course, and (5) eighth semester students of class A regular, Biology Education at Universitas Negeri Medan. This study employed a 4-D Research and Development modified with 3 main stages, namely define, design and develop consecutive stages. The results showed that (1) the assessment of two experts for learning material based on the feasibility of material content, presentation and readability has obtained the percentage mean score of 95% in a very good category, (2) the assessment of two experts for instructional design based on the conformity of learning material with Competence Standard and Basic Competence, evaluation, exercise availability, learning textbook efficiency, and language has obtained the percentage mean score of 95% in a very good category, (3) the assessment of two experts for book layout design based on book appearance and readability has obtained the percentage mean score of 93% in a very good category, (4) the assessment of two lecturers of tissue culture has obtained the percentage mean score of 81% in a very good category, and (5) the assessment of biology students was entirely included in a very good category consisting of individual trial obtained the mean score of 82%, small group trial obtained the mean score of 85% and field group trial obtained the mean score of 86%. Thus, it could be concluded that the developed research-based textbook has been properly applied according to the experts for learning material, instructional design, and book layout design, the lecturers of tissue culture as well as biology students, so the research-based textbook for the topic of Sipahutar pineapple *in vitro* micropropagation could be used as the source of obtaining other information instead of students' guide books.

Keywords : *Development, textbook, research, Sipahutar pineapple (Ananas comosus L.), in vitro*