

ABSTRAK

MARTA ITO DAULAY. Efektivitas Penerapan Buku Pengakaran Tanaman Nanas (*Ananas comosus* L.) asal Sipahutar Secara *In vitro* pada Pembelajaran Kultur Jaringan Mahasiswa Pendidikan Biologi Universitas Negeri Medan. Program Pascasarjana Universitas Negeri Medan. 2019.

Penelitian ini bertujuan untuk mengetahui efektivitas buku Pengakaran Tanaman Nanas (*Ananas comosus* L.) asal Sipahutar Secara *In vitro* dalam meningkatkan: (1) kemampuan berpikir tingkat tinggi; (2) keterampilan proses sains; (3) kemandirian belajar; dan (4) sikap ilmiah mahasiswa pendidikan biologi Universitas Negeri Medan. Jenis penelitian ini berupa quasi eksperimen dengan menggunakan *Pretest-Posttest Control Group Design*. Populasi dalam penelitian ini adalah seluruh mahasiswa S1 Pendidikan Biologi semester VIII (delapan) tahun ajaran 2018/2019. Sampel terdiri dari 2 kelas yang diambil dengan teknik *cluster random sampling*. Kelas A dibelajarkan dengan buku berbasis riset pengakaran tanaman nanas sedangkan kelas B menggunakan buku ajar kultur jaringan tanaman. Hasil penelitian berdasarkan uji hipotesis yaitu uji t test diperoleh bahwa: (1) buku Pengakaran Tanaman Nanas (*Ananas comosus* L.) asal Sipahutar Secara *In vitro* efektif meningkatkan kemampuan berpikir tingkat tinggi ($t_{hitung}=0,00$; $p=10,68$); (2) buku Pengakaran Tanaman Nanas (*Ananas comosus* L.) asal Sipahutar Secara *In vitro* efektif meningkatkan keterampilan proses sains ($t_{hitung}=9,678$; $p=0,00$); (3) buku Pengakaran Tanaman Nanas (*Ananas comosus* L.) asal Sipahutar Secara *In vitro* efektif meningkatkan kemandirian belajar ($t_{hitung}=5,315$; $p=0,00$); (4) buku Pengakaran Tanaman Nanas (*Ananas comosus* L.) asal Sipahutar Secara *In vitro* efektif meningkatkan sikap ilmiah mahasiswa ($t_{hitung}=3,120$ $p=0,003$).

Kata kunci: Efektivitas, *In vitro*, Kemampuan Berpikir Tingkat Tinggi, Keterampilan Proses Sains, Kemandirian Belajar, dan Sikap Ilmiah.

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ABSTRACT

MARTA ITO DAULAY. Effectiveness of Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.) on Tissue Culture Learning of Biology Education Student's Universitas Negeri Medan. Postgraduate Program State University of Medan. 2019.

This research conducted to find out the effectiveness of Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.) in improving: (1) high order thinking; (2) science process skills; (3) self regulated learning; and (4) science attitude of biology education students at State University of Medan. This research use quasi-experimentl using the *Pretest-Posttest Control Group Design*. The population was all 8th semester undergraduate biology education students in academic year 2018/2019. Two classes (A and B) taken as sample for the Experimental Group by cluster random sampling method. Class A was taught by using of Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.), while Class B was taught by using Plant Tissue Culture Textbook. Hypothesis test result by using t-test obtained that: (1) the Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.) to improving high order thinking ($t_{count}=10.68$; $p=0.00$); (2) the Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.) to improving science process skills ($t_{count}=9.678$; $p=0.00$); (3) the Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.) to improving self regulated ($t_{count}=5.315$; $p=0.00$); (4) the Textbook of *In vitro* Rooting of Sipahutar Pineapple (*Ananas comosus* L.) to improving students science attitude ($t_{count}=3.120$; $p=0.003$).

Keywords: Effectiveness, *In vitro*, High Order Thinking, Scientific Process Skills, Self Regulated Learning, and Science Attitudes.

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