

ABSTRAK

Nazahah Mafkhorotul Fuadah Pengembangan Lembar Kerja Berbasis
Projek Pada Fermentasi Minuman Herbal
Kefir Untuk Mengembangkan
Kemampuan Proses Sains

Penelitian ini bertujuan untuk mengembangkan media pembelajaran sebagai alternatif dalam pelaksanaan praktikum mata kuliah kimia fermentasi yaitu pada materi pemanfaatan metode fermentasi untuk mendapatkan produk-produk yang bernilai ekonomis tinggi. Tujuan dari penelitian ini pula yaitu untuk mendeskripsikan tampilan lembar kerja berbasis projek, mendeskripsikan proses dan hasil uji validasi lembar kerja dan menganalisis hasil optimasi pembuatan minuman herbal kefir menggunakan fermentasi kefir *whey*. Metode percobaan pada penelitian menggunakan metode *DBR (design based research)*, dengan subjek mahasiswa yang pernah atau sedang mengikuti mata kuliah kimia fermentasi yang berjumlah 10 orang, Serta dilakukan karakterisasi produk meliputi organoleptik, pH,kekentalan dan aktivitas antioksidan. Lembar kerja disusun dengan menggunakan metode *DBR (design based research)* dengan tahapan analisis, perancangan dan pengembangan.. Lembar kerja yang disusun memperoleh nilai r_{hitung} 0,75 yang dikategorikan valid. Tampilan lembar kerja sesuai dengan karakteristik dan tahapan pembelajaran berbasis proyek serta layak diterapkan pada mata kuliah kimia fermentasi.

Kata kunci: Lembar Kerja berbasis projek, fermentasi minuman, herbal, kefir

ABSTRACT

Nazahah Mafkhorotul Fuadah *Development of a Project-Based Worksheet on Fermentation of Herbal Kefir Drinks to Develop Science Process Skills*

This study aims to develop learning media as an alternative in the implementation of laboratory work on fermentation chemistry courses, specifically on the use of fermentation methods to obtain products with high economic value. The objectives of this study are also to describe the appearance of a project-based worksheet, describe the process and results of the worksheet validation test, and analyze the results of optimizing the manufacture of herbal kefir drinks using kefir whey fermentation. The experimental method in this study used the DBR (design-based research) method, with 10 students who had or were currently taking fermentation chemistry courses. Product characterization was also carried out including organoleptic, pH, viscosity, and antioxidant activity. The worksheet was prepared using the DBR (design-based research) method with the stages of analysis, design, and development. The prepared worksheet obtained an r -value of 0.75, which is categorized as valid. The worksheet appearance is in accordance with the characteristics and stages of project-based learning and is suitable for application in fermentation chemistry courses.

Keywords: *Project-based worksheet, beverage fermentation, herbal, kefir*