

ABSTRAK

Maradistha Cheva Tryawan : Penerapan Lembar Kerja Berbasis Proyek pada Pembuatan *Hand Cream* dari Ekstrak Kulit Jeruk Lemon untuk Meningkatkan Literasi Sains Mahasiswa

Penelitian ini bertujuan untuk mengkaji penerapan lembar kerja berbasis proyek pada pembuatan *hand cream* dari ekstrak kulit jeruk lemon dalam meningkatkan literasi sains mahasiswa dan menghasilkan produk yang memenuhi karakteristik yang diharapkan. Penelitian menggunakan metode *pre-experiment* dengan desain *One Group Pretest–Posttest*. Subjek penelitian adalah mahasiswa Program Studi Pendidikan Kimia yang mengampu mata kuliah Kimia Organik Bahan Alam Lanjut. Instrumen penelitian meliputi lembar observasi keterlaksanaan pembelajaran, lembar kerja mahasiswa, tes literasi sains, angket sikap, lembar uji karakteristik, lembar penilaian poster, dan lembar penilaian presentasi. Data dianalisis menggunakan uji Wilcoxon dan uji *N-Gain*. Hasil penelitian menunjukkan bahwa penerapan lembar kerja berbasis proyek terlaksana dengan sangat baik pada setiap tahapan *Project Based Learning*. Hasil uji Wilcoxon menunjukkan terdapat perbedaan yang signifikan antara nilai pretest dan posttest dengan nilai signifikansi 0,002 ($<0,05$), sedangkan hasil uji *N-Gain* sebesar 0,833 yang termasuk dalam kategori tinggi. Selain itu, *hand cream* yang dihasilkan memiliki karakteristik yang baik berdasarkan uji organoleptik, tipe krim, daya sebar, pH, kelembapan, dan uji iritasi sehingga memenuhi persyaratan mutu sediaan. Berdasarkan hasil penelitian dapat disimpulkan bahwa penerapan lembar kerja berbasis proyek pada pembuatan *hand cream* dari ekstrak kulit jeruk lemon efektif dalam meningkatkan literasi sains mahasiswa serta menghasilkan *hand cream* dengan karakteristik yang baik.

Kata kunci: lembar kerja berbasis proyek, *Project Based Learning*, literasi sains, *hand cream*, ekstrak kulit jeruk lemon.

ABSTRACT

Maradistha Cheva Tryawan : The Implementation of Project-Based Worksheets in the Production of Hand Cream from Lemon Peel Extract to Improve Students' Science Literacy

This study aims to examine the implementation of project-based worksheets in the production of hand cream from lemon peel extract to improve students' scientific literacy and to produce a hand cream with desirable characteristics. The study employed a pre-experimental method with a One-Group Pretest–Posttest design. The participants were students of the Chemistry Education Study Program enrolled in the Advanced Natural Products Organic Chemistry course. The research instruments included a learning implementation observation sheet, student worksheets, a scientific literacy test, an attitude questionnaire, a product characteristic evaluation sheet, and poster and presentation assessment sheets. The data were analyzed using the Wilcoxon test and N-Gain analysis. The results showed that the project-based worksheets were implemented very well throughout the stages of Project-Based Learning. The Wilcoxon test showed a significant difference between the pretest and posttest scores, with a significance value of 0.002 (<0.05), while the N-Gain score was 0.833, indicating a high level of improvement. In addition, the resulting hand cream showed good characteristics based on organoleptic properties, cream type, spreadability, pH, moisture, and irritation tests, indicating that the formulation met the required quality criteria. Overall, the implementation of project-based worksheets in hand cream production using lemon peel extract was effective in improving students' scientific literacy while producing a hand cream with favorable characteristics.

Keywords: project-based worksheet, project-based learning, literacy science, hand cream, lemon peel extract