Optimisation of Soil DNA Extraction Using QIAGEN DNeasy PowerSoil Pro Kit

Izzatul Afina Daud, Yuwana Podin*

*Universiti Malaysia Sarawak

In this study, two extraction methods are employed; indirect extraction where bacterial cells are removed from soil prior to using the extraction kit, and direct extraction which does not require any initial steps prior to using the extraction kit. To further lyse bacterial cells in the soil, enzymatic lysis using proteinase K is used. The two methods are then divided into groups using proteinase K at the lysis step or without proteinase K. DNA concentration and purity ratio are then measured using NanoDrop 1000 Spectrophotometer and recorded into IBM Statistics SPSS 29 for further analysis using correlation, ANOVA and Tukey's post hoc test. This study demonstrates whether an indirect or direct method with or without proteinase K is the most suitable to produce an excellent DNA quality which can save cost and time whilst using QIAGEN DNeasy PowerSoil Pro Kit for soil DNA extraction.