Bethlehem University Journal, Vol. 20 (2001)

A Rapid Method for Extraction of High Quality DNA from Single Grape Seeds for PCR Use

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Abstract
A rapid and efficient method for DNA extraction from grape seed is described. The grinding of dry seed tissue with the aid of powdered glass produces very fine tissue fragments, this eases the treatment of the tissue with various buffers and makes them more effective in extracting the contents of the cells including DNA. The purified DNA is of high quality to the extent that only a few samples out of hundreds prepared by this method failed to amplify in PCR.

Introduction

Primer-driven polymerase chain reactions (PCR) technology has become one of the most important in genetics laboratories. Many techniques for the preparation of DNA from plant tissues for the use in PCR have been reported (1, 2 and 3). Beside being time consuming, procedures involve the use of expensive chemicals, and require access to ultracentrifuges. In all these reports, tissues from growing parts of plants are required as a DNA source, which normally takes at least one week.

Genetic identity determinants that are useful in plant breeding and seed production have been used to amplify DNA extracted from other parts than the seeds. From seed testing perspective the best part of the plant to use are dry seeds. Few studies on the extraction of DNA form dry seeds for RAPD analysis have been reported (4 and 5). Such studies have shown that amplification of DNA extracted from dry seeds has proven to be reliable for varietal identification.

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