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Publish by Abstract

A Method for the Medium-Term Storage of Plant Tissue Samples at Room Temperature and Successive Cycles of DNA Extraction

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Abstract. Based on the protocol originally described by Stein et al. (2001), we have developed a method that allows for medium-term conservation at room temperature of wheat (*Triticum aestivum*) tissue samples to use for DNA extraction. DNA quality was suitable for analysis by PCR and Southern hybridization, even after 2 months of storage at room temperature. This method allows successive DNA re-extractions from a previously extracted sample and maximization of the DNA yield that can be recovered from precious samples. This method has applications for conservation of leaf samples and management of DNA extraction. Our method can help improve data recovery in many plant molecular genetics research projects.

Full text[†]: This article, in detail, is available only in the electronic version of the *Plant Molecular Biology Reporter.*

Contents: This article includes Introduction, Materials and Methods, Results and Discussion, 10 references, and 1 illustration.

Illustration:

Figure 1. Molecular analysis of DNA extracted with 3 different protocols, by PCR and Southern hybridization. One sample per condition is presented. Protocol 1: Successive extraction on the same sample. Protocol 2: First DNA extraction immediately after grinding and re-extraction after 7, 14, or 21 days of storage of extracted leaf samples at room temperature (samples 2-7, 2-14, 2-21). Protocol 3: Extraction after 21 or 60 days of storage at room temperature. Samples were (3*) or were not (3) initially heated at 65°C. Controls were performed as described by Stein et al. (2001) on fresh material. (A) PCR amplification using cft111 microsatellite. M, 100-bp ladder; T, water control. The arrowhead indicates the expected 111-bp

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[†]Editor's note: Although the scientific content of this article has been reviewed, the full-text Web publication has not been edited in detail.

product. (B) Agarose gel electrophoresis of 12 μg of *Hin*dIII-digested genomic DNA. (C) Southern blot analysis of the *Hin*dIII digest using the Fbb121 RFLP probe. +, For protocol 1, after 7 rounds of extraction, the yield of DNA recovered (6–7 μg) was not sufficient to obtain a signal on Southern blotting.

Key words: DNA extraction, PCR, sample conservation, Southern blot, wheat, yield