Rapid turbidimetric potassium test for use with the pressurized hot-water (PHW) extraction. (4186)

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Abstract:

Colorimetric or turbidimetric quantification of potassium K analysis coupled with the pressurized hot-water (PHW) extraction could provide an inexpensive alternative to standard methods for small-scale farmers in developing countries. A method of K analysis using sodium cobaltinitrite was modified for use with the PHW extraction and evaluated for the following requirements: be readable on the spectrophotometer, have minimal equipment requirements, be both rapid and simple as well as comparable in accuracy to proven methods of K analysis. The sodium cobaltinitrite method was simple, inexpensive and produced consistent results. Test results from 38 arid soil samples from the western United States encourage use of sodium cobaltinitrite as an acceptable procedure for K quantification (r^2 of 0.90) compared to AA analysis and when coupled with PHW related (r^2 of 0.67) with ammonium acetate-AA measured K. Use of sodium cobaltinitrite is suited to quantify K as a complement with the PHW extraction on arid soils.

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