

საქართველოს სტანდარტი

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ფოსფორის და კალიუმის განსაზღვრა ICP-OES მეთოდით
არაორგანულ სასუქებში

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**Fertilizers, soil conditioners
and beneficial substances —
Determination of ammonium citrate,
disodium-EDTA soluble phosphorus
and potassium by ICP-OES in inorganic
fertilizers**

*Engrais, amendements et substances bénéfiques – Détermination
de la teneur en phosphore et potassium solubles dans le citrate
d'ammonium et l'EDTA disodique par ICP-OES dans les engrais
inorganiques*





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Foreword

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Introduction

Inductively coupled plasma-optical emission spectrometer (ICP-OES) instrumentation is becoming increasingly popular in fertilizer testing laboratories (see References [1], [2] and [3]). Because these instruments are automated and can determine multiple elements simultaneously, they offer significant productivity gains. Also, the method does not generate hazardous wastes. The ammonium citrate disodium ethylenediamine tetraacetic acid (EDTA) organic solvent and samples containing high phosphorus and/or potassium concentrations pose some analytical challenges for the instrumentation, which must be addressed. Due to the increasing use of this technology, this document was created.

For organic fertilizers and for liquid fertilizers containing phosphorous acid (H_3PO_3 or phosphite), an alternative method that specifically measures PO_4 is preferred since the ICP-OES measures all elemental phosphorus, which can result in a high bias for these types of fertilizer materials (see Reference [1]).

Due to the inability of the ICP-OES to differentiate between phosphorus species, under normal operating conditions, this method is primarily intended for fertilizer materials in which the source(s) of phosphorus is known. While this document can be used with minimal bias, the repeatability and reproducibility is not consistent with other standards routinely used for inspection at this time, such as EN 15959[4], EN 15477[5] or ISO 22018[6].

As a result, this document is intended for screening purposes, where a large number of fertilizer phosphorus and potassium results must be obtained as efficiently as possible.