

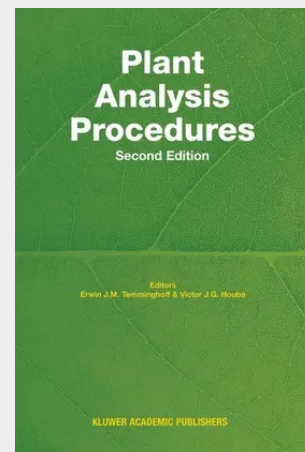
Plant Analysis Procedures

This manual is intended for the practising chemist who has to do a job in analysing plant material. Therefore, the present manual only contains ready-to-hand procedures without any comment. The procedures described are only for inorganic components, which frequently occur in the plant. Most procedures are designed to give a total content value of the element under consideration, regardless of the chemical structure in which it occurs in the plant.

We have chosen for a design in which all digestion procedures are described in one chapter, all extraction procedures in one chapter and all determination procedures in one chapter. As a consequence, one has to choose a suitable digestion method in combination with the intended determination technique; this has been indicated within each individual determination procedure.

For determination of the elements, mainly spectrometric techniques are used here. Depending on the kind of element and the expected concentration level, the following methods are applied: flame atomic emission spectrometry (flame AES), flame atomic absorption spectrometry (flame AAS), inductively coupled plasma optical emission spectrometry (ICP-OES), electrothermal atomisation (graphite furnace) atomic absorption spectrometry (ETA-AAS), inductively coupled plasma mass spectrometry (ICP-MS), spectrophotometry and segmented flow analysis (SFA). Besides, potentiometry (ion selective electrodes (ISE)) and coulometry will be encountered. In many cases, more than one method is described to determine a component. This provides a reference, as well as an alternative in case of instrumental or analytical problems.

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106,99 €

99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9789048167173

Medium: Buch

ISBN: 978-90-481-6717-3

Verlag: Springer Netherlands

Erscheinungstermin: 01.12.2010

Sprache(n): Englisch

Auflage: Softcover Nachdruck of
hardcover 2. Auflage 2004

Produktform: Kartoniert

Gewicht: 300 g

Seiten: 180

Format (B x H): 155 x 235 mm

