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Interested committees:

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Introduction

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 19254

Soil quality — Simultaneous determination of multi-class pesticide residues in soil using GC- MS/MS and LC-MS/MS analysis

ICS: 13.080.10

ISO/TC 190/SC 3

Secretariat: **DIN**

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Voting terminates on:
2025-05-20

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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This document was prepared by ISO/TC 190, *Soil quality*, Subcommittee SC 3 *Chemical and physical characterization*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Pesticides are primarily used to protect plant and enhance crop yields. The global average consumption of pesticides sprayed on cultivated land is approximately 2,69 kg/ha. This value reflects an increase compared to that of the past few decades. This upward trend in pesticide consumption contributed to continuous exposure of pesticides in environmental matrices such as soil, water, and air. The presence of pesticide residues in soils can degrade soil quality and have adverse effects on soil biodiversity, impacting non-target biota, as well as other ecosystem through the off-site transport of contaminated soil particles and soil pore water into air or water. Pesticide residues in soil can potentially move downward to groundwater through leaching process or run off to surface water resulting in water contamination.

Information at the national level regarding the presence of pesticides residue in soil has been limited due to low number of soil samples, monitoring project, and primarily focusing on the high toxic pesticides used in the past. However, some recent studies have reported the detection of various types of current fungicides, herbicides and insecticides in arable soil, playground, urban park areas, ground water, and surface water.

US EPA provides RSL (regional screening level) values used in risk assessment for contaminated sites. Out of 842 compounds in the RSL, approximately 264 are pesticides and each pesticide has its own threshold in soil, water, and air. Developing a standard analytical method targeting currently used pesticides in soil is crucial for conducting risk assessment at pesticide contaminated sites. A method available in analyzing multi-class pesticide residues in soil simultaneously would be very effective due to the variety of pesticide used. In this context, QuEChERS (quick Easy Cheap Effective Rugged Safe) method could be an alternative method to analyze a number of pesticide residues simultaneously in soil with relatively simple pretreatment applicable to both GC-MS/MS and LC-MS/MS.

The QuEChERS methods has already been incorporated into EN 15662 “Foods of plant origin-Multimethod for the determination of pesticide residues using GC- and LC-based analysis following acetonitrile (MeCN) extraction/partitioning and clean-up by dispersive SPE-Modular QuEChERS-method”. The proposed standard will play a pivotal role in setting up the analytical framework for various pesticide residues in soil and extending its scope to include other pesticide residues not presently listed as target analytes of this standard.