
Guidelines for treated wastewater use for irrigation projects —

Part 5: Treated wastewater disinfection and equivalent treatments

*Lignes directrices pour l'utilisation des eaux usées traitées dans les
projets d'irrigation —*

*Partie 5: Désinfection des eaux usées traitées et traitements
équivalents*



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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 282, *Water reuse*, Subcommittee SC 1, *Treated wastewater reuse for irrigation*.

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

Disinfection of treated wastewater (TWW) is a critical phase in the process of TWW use. Its purpose is to reduce or eliminate major health risks to the wastewater treatment plant's operators and to anybody who may come in contact with TWW or with crops that were irrigated with TWW.

This document provides a guideline for the available methods of disinfection, their effectiveness and the factors impacting those methods, along with their advantages and disadvantages, regarding technical and environmental aspects and effective inactivation or removal of various pathogens in wastewater and TWW for use in irrigation.

Guidelines for treated wastewater use for irrigation projects —

Part 5:

Treated wastewater disinfection and equivalent treatments

1 Scope

This document provides a guideline for the application of various available methods of treated wastewater (TWW) disinfection for an effective inactivation or removal of pathogens from TWW, which is intended for irrigation purposes.

This document deals with:

- chemical and physical technologies, principles of operation, and establishment of effective doses to be applied, possible interferences, and technical guidance for design and monitoring;
- comparison of the advantages and disadvantages of various disinfection methods suitable for TWW;
- potential environmental effects of the disinfection methodologies and ways to minimize those impacts;
- disinfection at different locations in the TWW use system, including in the wastewater treatment plant, within the distribution system and at the point of use.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20670, *Water reuse — Vocabulary*

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20670 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1.1

advanced oxidation process

AOP

process that generates hydroxyl radicals in sufficient quantity to remove organics by oxidation