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Water quality — Determination of the toxic effect of water constituents and waste water on duckweed (*Lemna minor*) — Duckweed growth inhibition test

*Qualité de l'eau — Détermination de l'effet toxique des constituants de l'eau et des eaux résiduaires vis-à-vis des lentilles d'eau (*Lemna minor*) — Essai d'inhibition de la croissance des lentilles d'eau*

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Foreword

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Introduction

The duckweed species *Lemna minor* is used as model organism for higher water plants. Duckweeds are monocotyledonous, free-floating angiosperms and belong to the *Arales* within the subclass of *Aridae*. Duckweeds are fast growing higher plants, spreading from the tropic to the arctic zone. As primary producers they are a food source for waterfowl, fish and small animals and serve as physical support for a variety of small invertebrates.

Duckweed can be damaged by water constituents and effluents (see Annex B). The subsequent inhibition of growth is calculated from the observation parameters (frond number, frond area, chlorophyll, dry weight) by a number of defined calculation methods.

EC values are determined to allow for an assessment of toxic effects of water constituents (e.g. chemicals, plant protection products). The evaluation for at least two observation parameters is based on the average specific growth-rates.

The test is designed for measurement of response of substances dissolved in water. This includes the definition of a fixed dilution step, or a concentration of the test sample at which a parameter of observation (endpoint) is inhibited relative to a control for a defined percentage.