

ISO 20130:2018 (E)

Soil quality — Measurement of enzyme activity patterns in soil samples using colorimetric substrates in micro-well plates

Contents

| | |
|---------|--|
| | Foreword |
| | Introduction |
| 1 | Scope |
| 2 | Normative references |
| 3 | Terms and definitions, symbols and abbreviated terms |
| 3.1 | Terms and definitions |
| 3.2 | Symbols and abbreviated terms |
| 4 | Principle |
| 5 | Reactives |
| 5.1 | Buffers and reagents |
| 5.2 | Substrates and standards |
| 5.2.1 | Preparation of standard solutions |
| 5.2.2 | Preparation of substrate solutions |
| 6 | Apparatus and materials |
| 7 | Procedure |
| 7.1 | Establishment of calibration curves |
| 7.1.1 | General |
| 7.1.2 | Solution of PNP |
| 7.1.3 | Solution of β -naphthylamine |
| 7.1.4 | Solution of ammonium chloride |
| 7.2 | Sampling |
| 7.2.1 | Sample preparation |
| 7.2.1.1 | Homogenization |
| 7.2.1.2 | Preparation of sample plates |
| 7.2.2 | Addition of substrate |
| 7.2.3 | Absorbance measurements |
| 7.2.3.1 | Measurements of enzyme activities with PNP as reaction product (ARS, β -GAL, α -GLU, β -GLU, NAG, PHOS, PAC, PAK) |
| 7.2.3.2 | Measurements of arylamidase activities (ARN) |
| 7.2.4 | Measurements of urease activities |
| 8 | Calculation of results |
| 9 | Expression of results |
| 10 | Validity criteria |
| 11 | Interlaboratory validation |
| 12 | Test report |
| Annex A | (informative) Validation of the method and intralaboratory tests for evaluating soil enzymatic activities with colorimetric method |
| A.1 | Aim |
| A.2 | Background |

A.3 Test materials and methodology

A.4 Data analysis

A.5 Validation parameters

Annex B (informative) International ring test for evaluating soil enzymatic activities with colorimetric method

B.1 Aim

B.2 Background

B.3 Test materials and methodology

B.4 Evaluation of the standard curve results

B.5 Evaluation of the soils enzymatic activities results

Page count: 29