



## Biotechnology People Can Use

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### NECi Sample Preparation Protocol for Nitrate Analysis in SOIL SAMPLES

Using NECi NTK-TTLR-25 or NTK-TTLR-100 *Low Range* Test Tube Kit

Or NECi NTK-MPLR *Low Range* Microplate Kit

\*\*\*\* **Low Range: 0.05 - 1.0 ppm Nitrate-N [0.25 - 5.0 ppm nitrate or 3.5 - 70 µM nitrate]**

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#### Protocol I: Screening Method

***Prepare extracts of soil samples while FD-NaR is being reconstituted (per kit instructions).***

1. Place 1/4 teaspoon soil sample into a 15 ml tube.
2. Add 10 ml deionized or distilled (de-I) water.
3. Cap tube and shake ~1 min
4. Allow to settle for 10 min.
5. Repeat steps 3 & 4.
6. Use this extract for assay.
7. If results are > 1.0 ppm, dilute extract 1:10 and 1: 100 with de-I water and repeat assay.

#### Protocol II: Semi-Quantitative Method

***Prepare extracts of soil samples while FD-NaR is being reconstituted (per kit instructions).***

1. Place 1 gram of soil sample into a 15 ml tube.
2. Add 10 ml de-I water.
3. Cap tube and shake ~1 min.
4. Allow to settle for 10 min.
5. Repeat steps 3 & 4. Filter sample if desired.
6. Use 500 µl (for L-NTK) or 50 µl (for M-NTK) of this extract for assay.
7. If results are > 1.0 ppm, dilute extract 1:10 and 1:100 and repeat assay.

#### Protocol III: Quantitative Method *Note: See Instructions for drying samples to constant weight.*

As Protocol II, except:

1. Use pipet for sample addition (500µl or 50 µl)).
2. Prepare nitrate standard curve using supplied nitrate standards. Read absorbance of standards at  $A_{540} \pm 20\text{nm}$ .
3. Read sample absorbance. Calculate nitrate content from the Standard Curve results. Calculation instructions are included with the kits.

Our studies indicate that most of the nitrate is recovered from soil samples with water only. However, if you are already using a soil extraction method with 2M KCl, etc., you can still use NECi's NTK's. Simply make the nitrate standard solutions *in your extraction solution* instead of water, and then use these standards as directed in the kit instructions. This will compensate for any interference that may be caused by your extraction solution.

**If additional information is required, please visit our website.  
Or call our tech line for help at 906/296-1115.**