

Method code updates, 8/7/19

Phosphorus change approved at Magruder meeting in Feb 2019 in Albuquerque, NM

Make 041.60 obsolete and inform labs using that method code to use 041.11, 041.21, or 041.31 instead. Information is lost on the method of detection of P in method 041.60. Method codes 041.11, 041.21, and 041.31 are more specific because they specify the method of extraction being citrate-EDTA in addition to the method of detection.

Make the update on August 16 after reporting of sample 190711. Inform the labs using 041.60 of the change to begin with sample 190811.

041.10	Direct Available Phosphorus as P2O5	Gravimetric Quinolinium	%	960.03	Prep as 960.03B, Detect as 960.03E
041.11	Direct Available Phosphorus as P2O5	Gravimetric Quinolinium, Citrate-EDTA Ext.	%	993.31	Prep as 993.31C, Detect as 962.02 C
041.20	Direct Available Phosphorus as P2O5	Spectrophotometric	%	960.03	Prep as 960.03B, Detect as 960.03D
041.21	Direct Available Phosphorus as P2O5	Spectrophotometric, Citrate-EDTA Ext.	%	993.31	Prep as 993.31C, Detect as 960.03 D
041.30	Direct Available Phosphorus as P2O5	Alkalimetric Quinolinium MolybdoP	%	960.03	Prep as 960.03B, Detect as 960.03C
041.31	Direct Available Phosphorus as P2O5	Automated Method, Citrate-EDTA Ext	%	993.31	Prep as 993.31C, Detect as 978.01 D-H
041.40	Direct Available Phosphorus as P2O5	Automated	%	978.01	
041.50	Direct Available Phosphorus as P2O5	ICP	%		
041.51	Direct Available Phosphorus as P2O5	ICP, Citrate-EDTA Ext.	%		ICP: Bartos et al.: JAOACI Vol. 97, No. 3, 2014, pg 687-699
041.60	Direct Available Phosphorus as P2O5	Citrate-EDTA Ext.	%	993.31	
041.99	Direct Available Phosphorus as P2O5	Other	%		

Proposed method codes for Humic acid, hydrophobic fulvic acid, and soluble silicon

There are several products on the market with guarantees for humic acid, hydrophobic fulvic acid, and soluble silicon. The following method codes are proposed so labs can assess their proficiency in determining these analytes in samples sent out.

References:

ISO 19822:2018(E), Fertilizers and Soil Conditioners – Determination of Humic and Hydrophobic Fulvic Acids Concentrations in Fertilizer Materials.

JAOAC 96(2):251-259, A 5-day Method for Determination of Soluble Silicon Concentrations in Nonliquid Fertilizer Materials Using a Sodium Carbonate-Ammonium Nitrate Extractant Followed by Visible Spectroscopy with Heteropoly Blue Analysis: Single-Laboratory Validation

Method Code	Analyte	Method Description	Unit	Method Reference	Further Description
327.00	Humic acid	Gravimetry, Ash-free material dissolved in alkali and precipitated in acid	%	ISO 19822:2018	
327.99	Humic acid	Other	%		
329.00	Hydrophobic fulvic acid	Gravimetry, Material dissolved in acid that binds to hydrophobic resin	%	ISO 19822:2018	
329.99	Hydrophobic fulvic acid	Other	%		
331.00	Soluble Silicon	Soluble Silicon in nonliquid fertilizer via spectrophotometry	%	JAOAC 96(2):251-259	
331.99	Soluble Silicon	Other			

Proposed method codes for Slow- and Controlled-Release N

References:

AOAC 2015.15, Nitrogen, Phosphorous and Potassium Release Patterns of Slow- and Controlled-Release Fertilizers

Method Code	Analyte	Method Description	Unit	Method Reference	Further Description
011.10	AR(ext1)	N released during extraction 1	%	AOAC 2015.15	Alternative B
011.20	AR(ext2)	N released during extraction 2	%	AOAC 2015.15	Alternative B
011.30	AR(ext3)	N released during extraction 3	%	AOAC 2015.15	Alternative B
011.40	AR(ext4)	N released during extraction 4	%	AOAC 2015.15	Alternative B
011.50	TAR	Total N released	%	AOAC 2015.15	Alternative B

Proposed method codes for Urea

References:

AOAC 983.01, Urea and Methyleneureas (Water-Soluble) in Fertilizers

AOAC 2003.14, Urea in Water-Soluble Urea-Formaldehyde Fertilizer Products and in Aqueous Urea Solutions

Method Code	Analyte	Method Description	Unit	Method Reference	Further Description
005.10	Urea N	HPLC (as N), H ₂ O mobile phase	%	AOAC 983.01	
005.20	Urea N	HPLC (as N), 85% acetonitrile mobile phase	%	AOAC 2003.14 / ISO 19746	
007.10	Urea	HPLC, H ₂ O mobile phase	%	AOAC 983.01	
007.20	Urea	HPLC, 85% acetonitrile mobile phase	%	AOAC 2003.14 / ISO 19746	