

DDE Supplement / Attachment

DDIdentifier ⁽¹⁰⁾	DDName
700	Nutrient Analysis Method
	All Nutrient DDIs

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Introduction

Nutrient values of harvested crops may be determined using different analytical methods. Local, regional, and international regulations, as well as laboratory standards, specify these methods in detail. Because nutrient values can vary depending on the applied method, it is essential to reference the analysis method when reporting values. This practice ensures transparency, comparability, and compliance with regulatory and contractual requirements. To enable harmonized data exchange across systems, the Nutrient Analysis Method shall be referenced when using Nutrient related DDI.

Usage

To indicate the applicable analysis method, the DDI *Nutrient Analysis Method* shall be added to the same DeviceElement that reports the nutrient value.

The DDI *Nutrient Analysis Method* follows the same pattern as the latency DDIs

[142 - Physical Setpoint Time Latency](#) and

[143 - Physical Actual Value Time Latency](#)

Only one analysis method may be referenced per DeviceElement. The referenced analysis method applies to all nutrient DDIs of that DeviceElement.

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The defined values for the DDI *Nutrient Analysis Method* are:

#	Nutrient Analysis Method	Typically used for	URL for Documentation
0	Undefined		
1	Commission Regulation (EC) No. 152/2009	Starch Ash Crude Fiber Crude Fat Crude Protein Sugar	https://eur-lex.europa.eu/eli/reg/2009/152/oj/eng
2	AOAC 942.05 - Determination of Ash in Animal Feed	Ash	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=2464
3	AOAC 978.10 - Fiber (Crude) in Animal Feed and Pet Food	Crude Fiber	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=366
4	AOAC 2002.04 - Amylase-Treated Neutral Detergent Fiber in Feeds	aNDF	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=2851
5	AOAC 2001.11 - Protein (Crude) in Animal Feed, Forage (Plant Tissue), Grain, and Oilseeds	Crude Protein	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=672
6	AOAC 920.39 - Fat (Crude) or Ether Extract in Animal Feed	Crude Fat Lipids	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=1088
7	AOAC 996.11 - Starch (Total) in Cereal Products	Starch	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=1546
8	AOAC 973.18 - Fiber (Acid Detergent) and Lignin (H ₂ SO ₄) in Animal Feed	ADF ADL	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=1165
9	Wisconsin Procedures for	Crude Protein ADF	https://uwlab.soils.wisc.edu/about-us/lab-procedures-and-methods

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	Soil Testing, Plant Analysis and Feed & Forage Analysis	NDF Ash Crude Fat Starch Potassium ADL	
10	Van Soest Detergent Fiber Method (1963)	NDF ADF ADL	https://academic.oup.com/jaoac/article-abstract/46/5/829/5732052
11	AOAC 982.14 - Glucose, Fructose, Sucrose, and Maltose in Presweetened Cereals	Sugar	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=863
12	AOAC 984.13 - Protein (Crude) in Animal Feed and Pet Food. Copper Catalyst Kjeldahl Method	Crude Protein Nitrogen (TKN)	http://aoacofficialmethod.org/index.php?main_page=product_info&products_id=1044
13	ISO 11885:2007 – ICP-OES for Determination of Selected Elements in Water	Potassium Phosphates	https://iso.org/standard/36250.html
14	Goering & Van Soest Forage Fiber Analysis Method (1970)	uNDFom240	https://govinfo.gov/content/pkg/GOVPUB-A-PURL-gpo24229/pdf/GOVPUB-A-PURL-gpo24229.pdf

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Device Description Object Pool (DDOP)

This section provides three examples of a Device Description Object Pool (DDOP). The final or production design may differ from these simplified examples.

Simple DDOP without Nutrient Analysis Method

Referencing a nutrient analysis method is optional. If the use case does not require documentation of the analysis method, a simple DDOP without it may be used.

DET-1			
xxx		Actual Ash Content	
xxx		Average Ash Content	
xxx		Actual ADF Content	
xxx		Average ADF Content	
...		...	

DDOP with a Single Nutrient Analysis Method

In this sample, the nutrient analysis method is modeled as a *Device Property* (🔒) with a constant value of 1.

Alternatively, the nutrient analysis method could be modeled as *Device Process Data*. However, changing from one analysis method to another during task execution is not.

DET-1			
xxx	🔒	Nutrient Analysis Method	10
xxx		Actual NDF Content	
xxx		Average NDF Content	
xxx		Actual ADL Content	
xxx		Average ADL Content	
...		...	

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Complex DDOP with Multiple Nutrient Analysis Methods

In this sample, the system requires referencing two different nutrient analysis methods: one for ADL (8), and another for NDF (4).

To achieve this, two *DeviceElements* of type *Function* are modeled.

