

NIRSC Program for Using Sample Spectra to Monitor NIRSC Calibrations

1. The goal of this program is to provide a simple means for NIRSC members to monitor the accuracy of their NIRSC calibrations.
2. Spectra of various products collected from a standardized NIRSC instrument are posted on the NIRSC Website and available for download. These products consist of Legume Hay, Fermented Corn Silage, Grass Hay, Legume – Grass Mixed Hay, and Mixed Haylage.
3. Acceptable outputs for constituent values are provided in a table for comparison to calibration results.
4. Instructions for the use of these spectra in the Winisi Software are as follows:

Quick Reference:

- Download the spectra and copy into a folder that is linked to a Project in your Winisi Software.
- Highlight the Project containing the downloaded spectra.
- Click the Monitor Results icon (2 wrenches), and choose the “Compare Predicted and Reference Values” option from the menu.
- Choose Reference File (Winisi Monitor window).
- Choose Project containing downloaded spectra (File IO window).
- Highlight spectra file you want to use and click OK (File IO window).
- Choose Equation File (Winisi Monitor window).
- Choose Project containing corresponding Consortium calibration (File IO window).
- Highlight corresponding calibration and click OK (File IO window).
- Choose Prediction Basis desired (Dry Matter, As Received, Fixed Percent) and Press Calculate (Winisi Monitor window).
- Record values and compare to Table of Acceptable Values.

Pictorial Instructions:

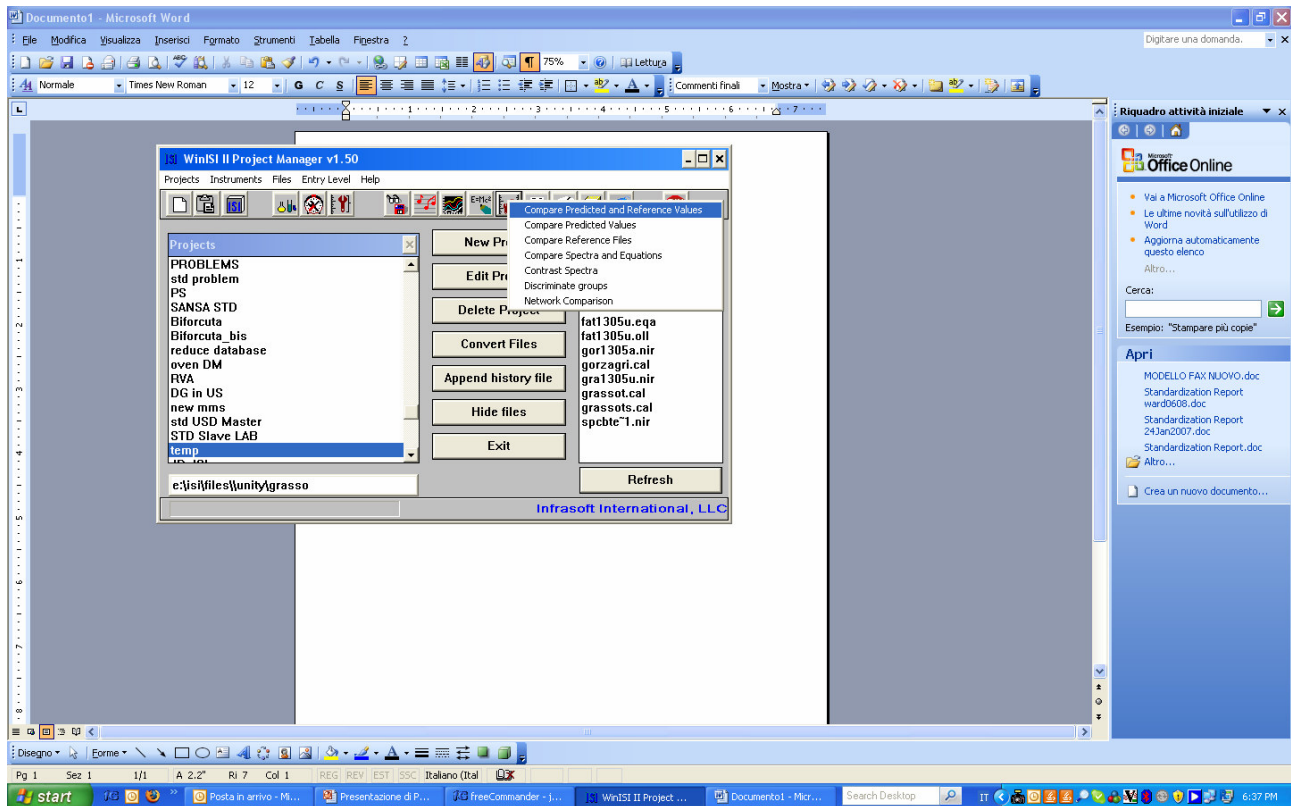
Compare reference value and prediction (Validation)

In this example we will use a file with spectra (1) downloaded from the NIRSC website, or (2) collected on our own instrument plus the corresponding reference analysis. Files used:

- NFTAah.cal – a file that contains spectra of past NFTA Alfalfa hay samples with the RMA values (available from NIRSC website)
- 07ah50-1.eqa – NIRSC equation to predict Alfalfa hay.

Click on monitor 

Then select Compare predicted vs. reference values – 1st option



The dialog box opens like in the following example. You'll have to select a 'Reference' file and then the eqa. Click on 'Reference File'

WINISI Monitor [X]

Reference File []

Equation File []

Auxiliary File []

Current Comparison Type:
Compare Predicted and Reference Values

Selected Files:

[]

Clear Selected

Clear All

Prediction Basis:
Dry Matter [v]

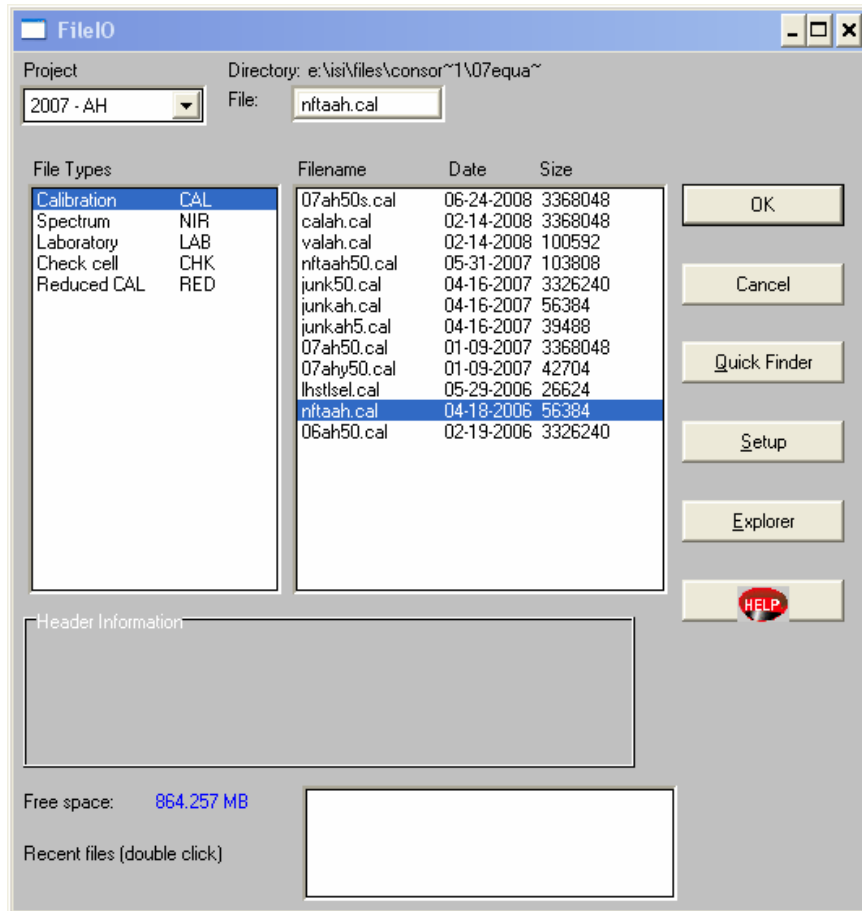
Missing Value:
0.000

Ignore Negative Values

Calculate **Output Options** **Select Pairs** **Control Limits** **Math Treatment**

Close **Exit to Project Manager** **HELP** **Product Options**

Then select the reference file (NFTAah.cal). Make sure the windows on the left highlights 'Calibration CAL' or you won't see the list of files available



Click on 'Equation File' and select the appropriate eqa.

WINISI Monitor

Reference File: nftaah.cal

Equation File: 07ah50-1.eqa

Auxiliary File:

Current Comparison Type: Compare Predicted and Reference Values

Selected Files:

- e:\isi\files\consor~1\07equa~1\legume~1\nftaa
- e:\isi\files\consor~1\07equa~1\legume~1\07ah

Prediction Basis: Dry Matter

Missing Value: 0.000

Ignore Negative Values

Buttons: Calculate, Output Options, Select Pairs, Control Limits, Math Treatment, Close, Exit to Project Manager, HELP, Product Options

If names of the constituents in the cal file are IDENTICAL to the names in the eqa, the software matches chemistry and predictions calculating all of the stats to evaluate eqa performance

Predict Constituents Statistics							
NDF vs. NDF							
SEP:	1.070	Number of Samples:		11			
Means:	38.052 38.157	Standard Deviations:		6.777 6.156			
Bias:	-0.105	Bias Limit:		1.050			
SEP(C):	1.117	SEP(C) Limit:		2.274			
Slope:	1.089	RSQ:		0.979			
Ave. Global H:	0.754	Ave. Neighbor. H:		0.269			
Pos.	Sample #	LAB	ANL	Residual	Bias	Global H	Neigh. H
1	98-AH-05	50.590	49.950	0.640	0.745	0.623	0.405
2	99-AH-01	25.930	27.857	-1.927	-1.822	1.198	0.192
3	99-AH-04	46.490	45.683	0.807	0.912	0.785	0.363
4	99-AH-06	40.360	39.933	0.427	0.532	0.705	0.236
5	2000-AH-01	37.450	38.678	-1.228	-1.122	0.495	0.246
6	2000-AH-03	41.880	42.010	-0.130	-0.025	0.414	0.193
7	2000-AH-04	36.260	35.991	0.269	0.374	0.816	0.221
8	2000-AH-06	31.610	33.244	-1.634	-1.529	0.594	0.205
9	2001-ah-01	37.870	37.770	0.100	0.206	0.719	0.142
10	2001-ah-03	34.380	34.670	-0.290	-0.185	1.271	0.495
11	2001-ah-04	35.750	33.941	1.809	1.914	0.669	0.261

Close Output Options XY Plot Residual Plot Correct Redo (0) Undo Undo All HELP

5. If the values received from the previous process are as listed in the output table, the Consortium calibration and standardizations are performing as intended.
6. If the values fall out of the acceptable output, Contact Paolo Berzaghi through the NIRS Consortium technical website (<http://144.92.64.146/Login.jsp>).