Genie-FoodPro Software

7072436

User's Manual

ISO 9001
SYSTEM
CERTIFIED

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The information in this document describes the product as accurately as possible, but is subject to change without notice.

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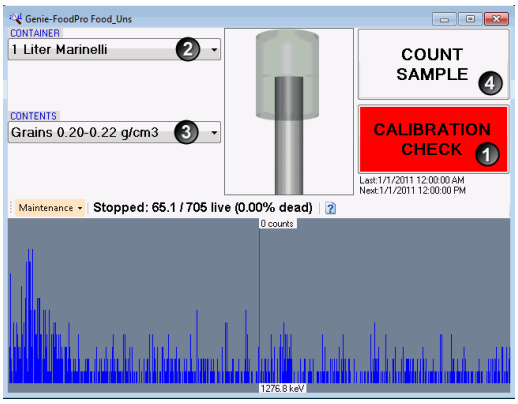
Notes

Basic Genie-FoodPro Operations

Red Calibration Button

If the calibration button is red, a calibration check must be performed, otherwise proceed to Counting Your Sample**.**



To perform a calibration check:

- Press the **Calibration Check** button. ①
- Place your source into the sample chamber.
- Press **OK** to proceed.
- Wait for measurement and report.
- If Calibration check button is Green, go to Counting Your Sample.
- If Calibration Check button is Red, do not proceed.

Counting Your Sample

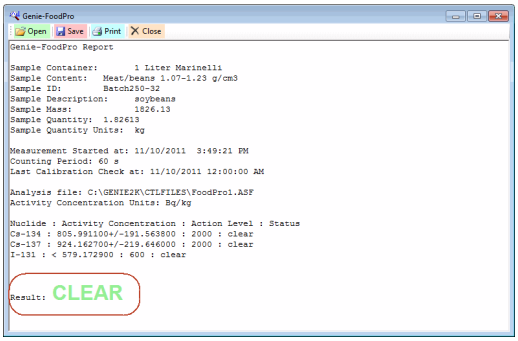
- Select the container type. ②
- Select the container contents. ③
- Press the **Count Sample** button. ④
- Place sample into the sample chamber.
- Enter the sample information.
- Press **Proceed** to begin counting.
- Wait for measurement and report.

Results Information

On completion of the sample count and analysis a report screen, like the one shown below, is displayed.

Note the “CLEAR” indicator.

Use the report results to record your data.



FoodScreen Measurement Guidelines

These guidelines must be followed to ensure correct measurement results.

- The wire basket is intended to be used with all samples excluding the Marinelli beaker. Failure to use the basket results in incorrect spacing and erroneous measurements.

- Samples that do not sit properly (level) on top of the wire basket require a thin plastic disk (provided) to be placed on top of the wire basket prior to measurement. This ensures the proper sample-detector distance.

- The placement of any metal between the container and detector will cause erroneous results.

- Be sure to fill the containers when preparing samples. Grossly under filled containers will lead to erroneous results.

- Center the container on the detector during measurement for proper results.

- The lid of the lead shield should be closed during measurement to reduce background - unless the container is too large.

- Storage of potentially contaminated materials in close proximity to FoodScreen may bias results toward higher activities.

- When moving FoodScreen with an Unstabilized detector between environments with different temperatures, a “Calibration Check” must be performed prior to measurement to avoid erroneous results caused by temperature changes in the detector.

- It is important that FoodScreen remain clean of spills, but also that the detector and digital tube base remain dry. In the event of cleaning wipe with a damp cloth but do not spray the electronics with liquid as this will cause damage.

- FoodScreen contains components (detector and digital tube base) which are susceptible to damage upon impact. Avoid shocks, heavy vibration and dropping of the system parts. In particular be sure to place the detector into the shield carefully when installing the detector.

- The stabilized and unstabilized NaI detectors are used with different adapters (spacers). Use of the incorrect adapter (spacer) will affect sample placement and cause erroneous measurements.

- The use of any detector, adapter (spacer), or wire basket other than those provided with FoodScreen will result in erroneous results. If any of these items are lost or damaged please consult a Canberra representative for a proper replacement.

1. Introduction

The CANBERRA Genie-FoodPro software has a simple operator interface specifically designed for monitoring of food contamination with the FoodScreen system.

About this Manual

The Genie-FoodPro User's Manual is designed for users of all levels of expertise and contains the information to operate the Genie-FoodPro software. The Basic Genie-FoodPro Operations page and the Main User Interface chapter are the most useful for a non-expert user.

Typographic Conventions

The following typographic conventions are used in our standard manuals.

Dialog Box Elements

Window commands are shown in bold type (**OK**). That style is also used to present labels of elements of a dialog box, like check boxes, combo boxes, drop down lists, group boxes, radio options, tabs, text boxes, field names, etc. Note that the font is different from that used for menu commands, soft keys, and buttons.

Menu Commands and Window Commands Buttons

These items are shown in **Special Bold** type. Note that the font is different from that used for Windows commands and dialog box elements.

Cascading items (such as menu commands and sub-commands) are separated by a non-breaking space, a pipe (|), and another non-breaking space, and also shown in special bold type, e.g. **Maintenance | Configuration**.

File Names and Path Names

Names of files and directory path names are shown in capital letters using the Arial font (C:\GENIE2K).

User Entries

Text you are expected to type in is shown in Courier font (`typewriter style`) type.

Titles

Titles of books and of manual chapters and section are shown in *italic*.

2. Main User Interface

This chapter introduces you to the parts of the Genie-FoodPro user interface where you can start a count or calibrate the probe.

To start Genie-FoodPro from the Windows desktop:

- Open the **Start** | **Programs** | **Genie-2000** menu.
- Click on the Genie-FoodPro icon ( ).

The main window (Figure 1) now appears.

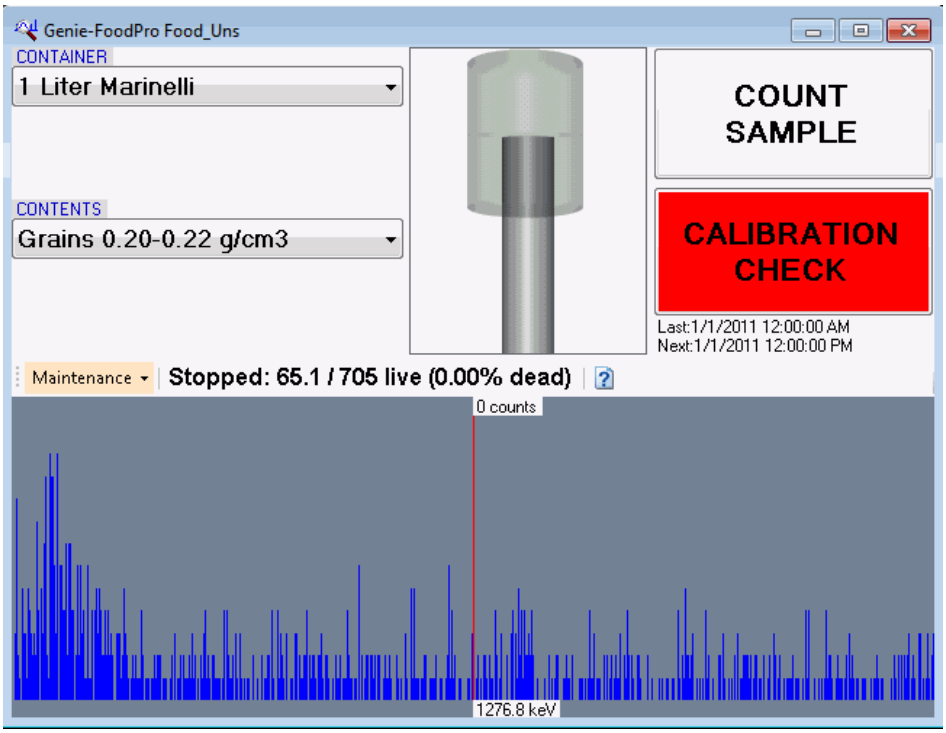


Figure 1: Main User Interface

The main window consists of the following components:

- Drop down menu for food container.
- Drop down menu for food contents (type).
- Image displaying food container on detector.

- **Count Sample** button for initiating a food sample measurement (see *Sample Counting* on page 3).
- **Calibration Check** button for initiating a system calibration check (see *Calibration Check* on page 4).
- Maintenance menu (see *Maintenance* on page 15).
- Spectral Plot with elapsed and current time presented with dead time on a bar. The x-axis shows the energy and counts at the cursor (see Figure 1).
- You can access the user's Manual by clicking on the help button ().

Sample Counting

To begin counting a sample, you must:

1. Select the container type from the **Container** drop down list – a visual representation of the container on the detector is shown for guidance purposes.
2. Select the container contents from the **Contents** drop down list.
3. Initiate a count by pressing the **Count Sample** button.
4. The Sample Information dialog appears as shown in Figure 2.
5. Place sample into the sample chamber in the shield.
6. Enter the sample information and press **Proceed**.
7. The **Count Sample** button changes to 'Counting…(Stop).

   The count initiates. Note that any existing spectral data will be cleared.
8. After the count completed, a simple results screen is displayed. Refer to *Result Reports* on page 12.

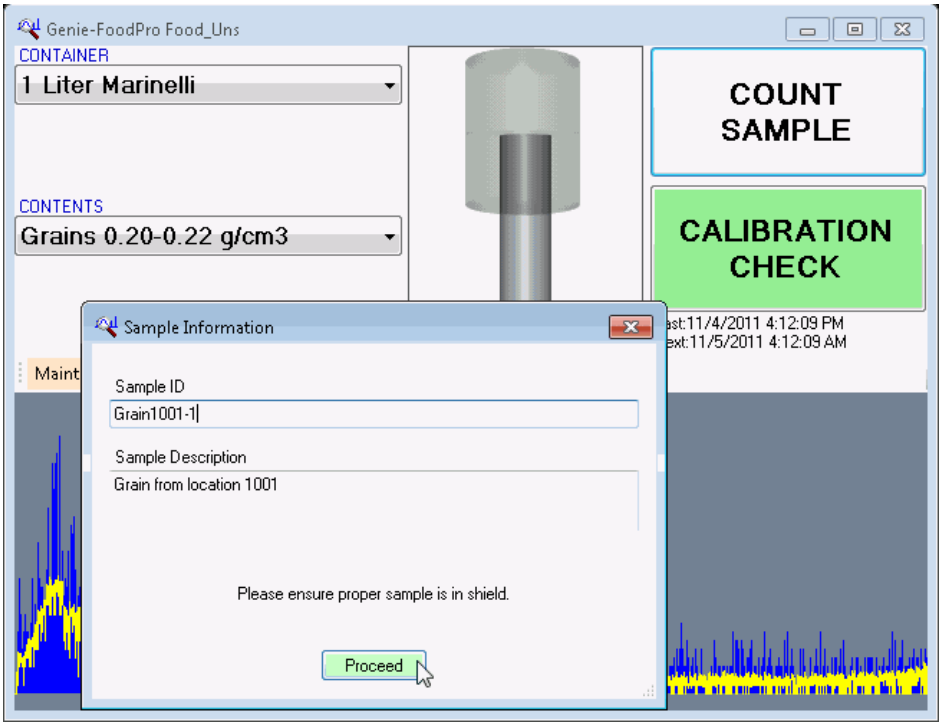


Figure 2: Entering the Sample Information

Calibration Check

The User Interface includes a **Calibration Check** button that is used to initiate calibration check measurements. The button is red if the calibration check is past due.

Under the button are the following labels:

- Last calibration check time and date
- Next calibration check due time and date

The maximum allowable time between calibration check measurements is set on the configuration screen (see the "Detector Configuration" section of the Configuration screen on page 17). The length of the calibration check count and the certificate file used are also set here.

The calibration check is carried out with a KCl standard source that is supplied with the system.

Note: The Calibration Check count can be aborted (stopped) during the count by pressing the **Calibration Check** button.

To perform a calibration check, you must:

1. Press the Calibration Check button.

2. A dialog prompts you to place the standard sample into the sample chamber in the shield. Press OK and wait for the count to complete. Note that any existing spectral data will be cleared. The Calibration Check button label changes to 'Checking…(Stop)' and the button's background color changes to yellow.

At the end of the count period the system automatically checks the centroid and count rate for the 1462 keV K-40 peak from the standard sample.

The system uses the 1462 keV K-40 peak to automatically make small corrections to the energy calibration (using an automatic energy calibration adjust) in order to maintain the system.

At the end of the analysis the system overlays a predicted spectrum and produces a calibration report that can be printed by the operator (Figure 3).

The Calibration Check button's background color changes to green.

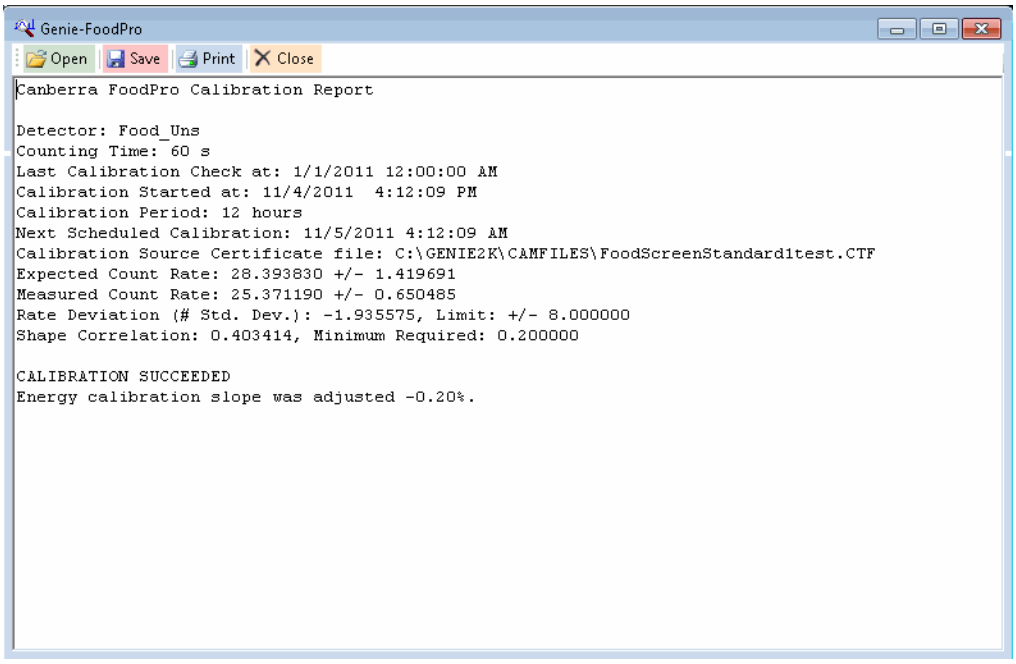


Figure 3: A Sample Calibration Check Report

3. Calibration Analysis

The automated analysis method processes the measured spectrum, elapsed live time, energy calibration, peak shape calibration, efficiency calibration and check source certificate file to estimate the best current energy calibration slope term. The engine uses the measured spectrum, energy and peak shape calibration to perform peak erosion baseline estimation to separate the measured peak spectrum from the underlying continuum. The certificate data is then used in conjunction with the energy, shape and efficiency calibrations to generate an expected peak response model that can be compared to the measured peak spectrum. The energy calibration slope term is varied in very small discrete steps over a range from 50% below to 50% above the initial value. At each step, the peak model is compared to the measured peak spectrum by calculating a Pearson's normalized correlation coefficient. The highest correlation must meet or exceed the specified correlation limit. The total measured peak counts in the regions corresponding to the certificate peak regions when the energy calibration slope term yields the highest correlation is compared to the expected total counts. The expected total counts are obtained by summing all of the certificate emission rates times respective peak efficiencies and the live time. The ratio between the total measured peak counts and the expected certificate peak counts in terms of total number of standard deviations must be less than the specified sigma limit. If both the correlation limit and sigma limit are met, the analysis is deemed successful and the new energy calibration slope term is applied.

In summary, the automated calibration check analysis performs:

- Baseline estimation of measured spectrum to get measured peak spectrum.
- Iteratively step through the range of candidate energy calibration slope terms.
  - -50% to +50% of the initial value.
  - Generate expected certificate peak models at each step.
  - Calculate shape correlation coefficient between each model and the peak spectrum at each step.
- Select the energy calibration slope term with highest correlation.

- If highest correlation achieves the specified correlation limit, continue.
- At the candidate energy calibration slope, tally all of the measured peak counts in the certificate peak regions.
- Tally of all of the expected peak counts per the certificate, live time and efficiency calibration.
- If the ratio of the difference between the expected and measured peak counts to the total standard deviation is less than the specified sigma limit, continue.
- If both the correlation limit and sigma limit are satisfied, the analysis is successful – apply the energy calibration slope term with the highest correlation.

4. Food Sample Data Analysis

Each factory default sample count configuration includes the file path specification for an associated Analysis Sequence File (ASF) that has been configured using standard Genie-2000 software. Each configuration also has an associated efficiency calibration file generated using LabSOCS software.

The standard Genie analysis performed with the analysis sequence file determines the activity and MDA (minimum detectable activity) results for Cs-134, Cs-137 and I-131. Activity must meet or exceed MDA to be considered valid. For each nuclide the activity concentration is calculated to give:

- Cs-134 activity concentration ± 1 standard deviation *or* MDA concentration.
- Cs-137 activity concentration ± 1 standard deviation *or* MDA concentration.
- I-131 activity concentration ± 1 standard deviation *or* MDA concentration.

Concentrations are calculated by dividing the activity (or MDA) by the sample quantity and are given in the quantity units specified. See *Configuration* on page 16.

For each of the three nuclides, the activity concentration is checked against an associated action level as follows:

Where an activity result is calculated:

If activity concentration > action level, then display ‘exceeds action level’

Else

If activity concentration + 3 standard deviations > action level, then display ‘exceeds action level with +3 Std. Dev.’

Where an MDA is calculated:

If MDA concentration > action level then display ‘MDA too high’

The overall result is presented as ‘ABOVE ACTION LEVEL’ if any of the above three conditions is raised for any of the three nuclides. Otherwise the result is given as ‘CLEAR’.

Analysis Sequence File

The Analysis Sequence File (ASF) calls on Genie-2000 algorithms to process the spectrum taken during measurement and produce a result. The ASF is invoked by the FoodPro software and requires no actions from the user to function properly.

The ASF includes five basic analysis steps: Peak Locate, Peak Area, Efficiency Correction, Nuclide Identification, and Minimum Detectable Activity.

The Peak Locate and Peak Area steps use the Gamma-M library analysis algorithm to find peaks in the spectrum and determine their peak area. This algorithm searches for specific peaks that are defined in the FoodPro1.nlb nuclide library.

The Efficiency Correction applies the efficiency calibration file that corresponds to the selected geometry to the measurement. This crucial step insures that the calculated activities of each nuclide correspond to the true rate. **If the incorrect sample geometry is chosen for a measurement the reported activities will be inaccurate.**

The Nuclide Identification step incorporates the peak analysis with the efficiency calibration and calculates the activity of each nuclide in the FoodPro1.nlb library. These values, if above the Minimum Detectable Activity, are then reported on the results screen.

The Minimum Detectable Activity (MDA) step performs an analysis on the spectrum which determines how much of a particular nuclide must be present in order to achieve a statistically significant identification. The MDA is quoted in the report, instead of measured activity concentration, for any nuclide for which there is not significant measured activity.

Efficiency Calibration File

If the incorrect sample geometry (and thus incorrect efficiency file) is chosen for a measurement the reported activities will be inaccurate.

Each factory default efficiency calibration file assumes a particular geometry of the item being measured. A geometry describes a 98% full container with specific composition and dimensions as well as the density of the sample.

If the wrong container or contents (density) is chosen for a measurement or if a sample count configuration specifies an inappropriate efficiency file, an erroneous analysis will result. Furthermore, since each efficiency calibration file describes a range of container sizes and density a certain systematic uncertainty is introduced to the analysis.

In order to fix the measurement at a conservative point the density/container size that gives the maximum activity was chosen. Consequently the activity represents the maximum for that particular geometry with a maximum introduced systematic error of 20-25% when the activity concentration is displayed in terms of mass (Bq/mass). Therefore it is possible that for a given container/density the quoted activity overestimates by 20-25%. However, since mass efficiency files are used the result must be converted in order to display concentrations with respect to volume (Bq/volume). This conversion introduces another systematic uncertainty which adds to the total systematic uncertainty. The maximum total systematic uncertainties associated with each geometry and each concentration type is given in the table below.

Note: if the Mass and Quantity parameters on the Configuration screen are changed for factory default sample count configurations then the maximum systematic uncertainties will change.

Container	Concentration in Bq/mass Max systematic error introduced at 662 keV	Concentration in Bq/volume Max systematic error introduced at 662 keV
1 Liter Marinelli	12.7%	27.7%
Small Deli	22.2%	40.6%
Medium Deli	18.7%	36.6%
Large Deli	18.7%	36.6%
V11	11.2%	26.2%
Can1	23.8%	42.4%
Can 2	21.4%	39.7%
Can 3	25.0%	43.9%
Can 4	24.0%	42.7%
Can 5	23.0%	41.5%
Can 6	22.4%	40.8%
Can 7	25.5%	44.4%
Can 8	25.2%	44.0%
Can 9	23.9%	42.6%
Can 10	21.0%	39.2%
Can 11	23.0%	41.5%

Mass Parameter

The Mass parameter on the Configuration screen is only used with massimetric efficiency calibrations that have an internal EFCALVERS parameter value that starts with the text “MASS”. (The Mass parameter on the Configuration screen is ignored for standard efficiency calibrations.) Massimetric efficiency calibrations generate intermediate activity concentrations that are in units of activity per grams while standard efficiency calibrations generate intermediate values that resemble total activity per whole sample. Genie-FoodPro divides the user-specified Quantity by the Mass parameter when a tagged massimetric efficiency calibration is in use. This allows reporting of the final activity concentrations in terms of the user-specified Units, regardless of the type of efficiency calibration.

Uncertainty Budget

Included in the uncertainty budget for each measurement/analysis are four random uncertainty contributions: uncertainty due to counting statistics, uncertainty due to ISOCS efficiency calibration (5%), uncertainty due to sample positioning error (8%), and uncertainty due to variations in detector dimensions (6%). The uncertainty due to sample position and uncertainty due to detector dimensions are added in quadrature and automatically entered into the calculation. They appear together in the Edit Sample Information window of the Genie-2000 Gamma Acquisition and Analysis program as a 10% random uncertainty. The uncertainty due to counting statistics is purely a function of the number of counts and consequently is computed after data acquisition and added in quadrature (along with the 5% uncertainty attributed to the ISOCS calibration) during analysis to the result of the others. Therefore the total measurement (random) uncertainty is calculated during the analysis process and is reported without the systematic uncertainty mentioned previously.

5. Results Report

On completion of the count and analysis, a report screen displays which includes the following information (as shown in *Figure 4 and Figure 5* starting on page 13).

Header

Genie-FoodPro Report

Sample Information

- Container (selected from drop down menu – See *Main User Interface* on page 2).
- Content (selected from drop down menu – See *Main User Interface* on page 2).
- ID (entered in Sample Information dialog – See *Sample Counting* on page 3).
- Description (entered in Sample Information dialog – See *Sample Counting* on page 3).
- Mass (from Configuration File – See *Configuration* on page 16), if a massimetric efficiency calibration is used.
- Quantity (from Configuration File – See *Configuration* on page 16).
- Quantity Units (from Configuration File – See *Configuration* on page 16).

Measurement Information

- Date and time of measurement initiation.
- Counting period (from Configuration File – See *Configuration* on page 16).
- Last valid calibration check (see *Calibration Check* on page 4).

Note that if a valid calibration check did not exist for the measurement then an indication is shown on the measurement report.

Analysis Information

- Analysis Sequence File (from Configuration File – See *Configuration* on page 16).
- Activity Concentration Units (from Configuration File – See *Configuration* on page 16).

Results Information

- Row for each of the following nuclides: Cs-134, Cs-137, and I-131, by default.

- For each nuclide: Activity concentration result (either an MDA or a result with 1 standard deviation uncertainty quoted).

- For each nuclide: Associated activity concentration action level (from Configuration File – See *Configuration* on page 16).

- For each nuclide: result against action level. This will specify if the result is above the action level, or if the result + 3sd (in the case of a measured activity) is above the action level. In either case this will cause an overall result of 'Above Action Level'.

- Overall result (either 'Clear' or 'Above Action Level'): if any of the three nuclide action levels are exceeded then the overall result will be 'Above Action Level'.

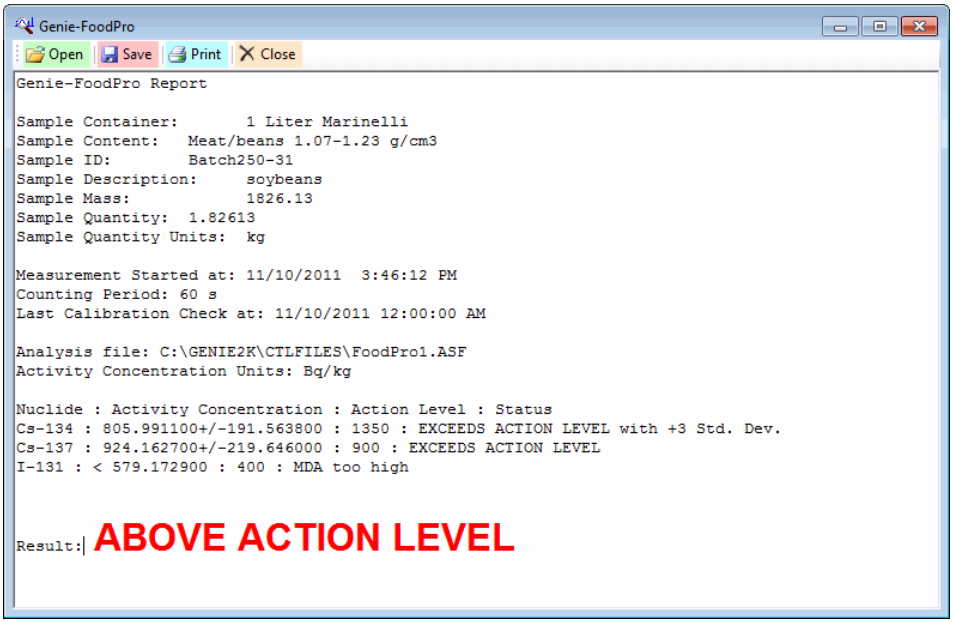


Figure 4: Results Screen - Result Above Action Levels

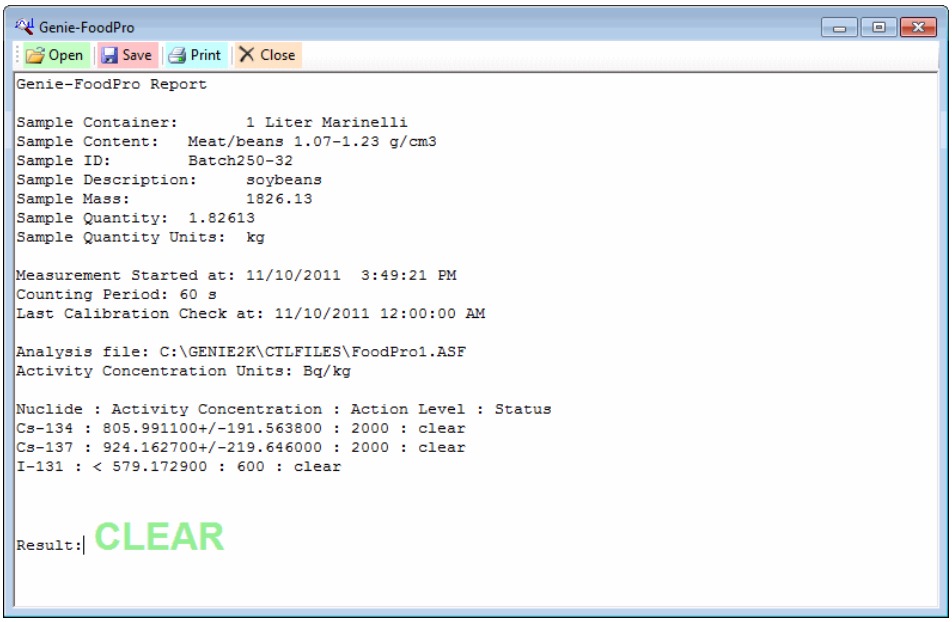


Figure 5: Results Screen - Result Below Action Levels

6. Maintenance

The Maintenance menu is accessed by clicking on the down arrow on the Maintenance toolbar button (Figure 6).

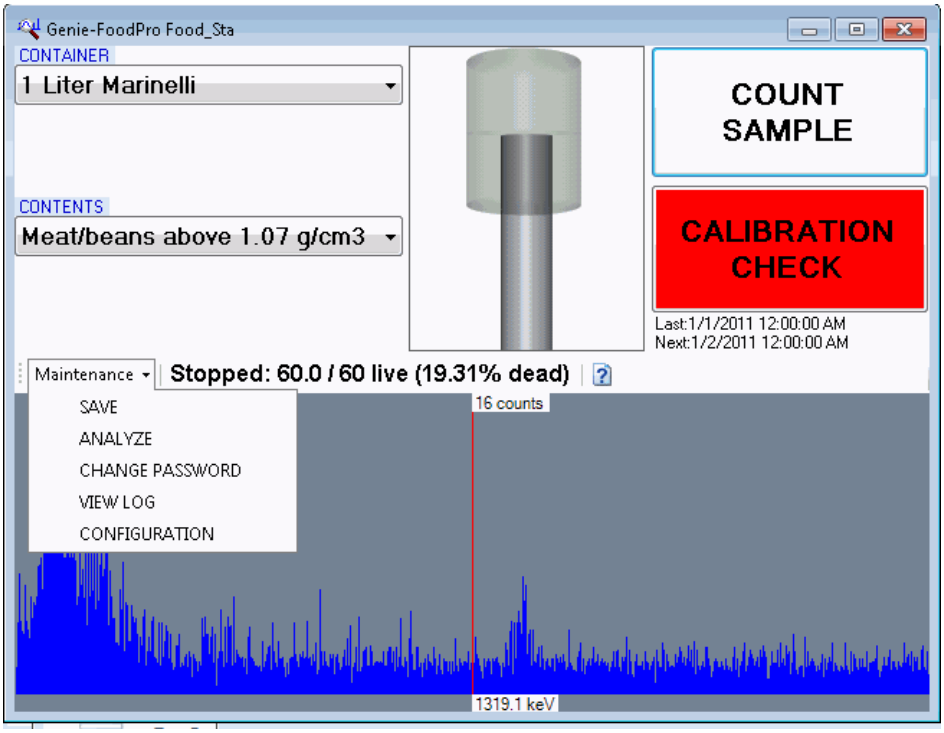


Figure 6: Main User Interface Showing Maintenance Menu

And includes the following menu options:

Save – Saves the current spectral data to a CAM file.

Analyze – Runs the analysis sequence associated with the current Container / Content combination on the current spectral data (for troubleshooting purposes).

Change Password – Changes the password that restricts access to the Configuration screen.

Note that the default password is blank. A blank password results in no password protection of access to the Configuration screen.

View Log – Brings up the event log which is used to log actions taken (see Figure 7). This view includes options for printing, saving, and opening other log files.

Configuration – Opens the Configuration screen (Figure 8) that displays and allows modification of detector and sample count configurations, as well as selection of the active detector configuration, activity units, and enabling of autosave.

View Log

The **View Log** menu option opens the Event Log report (Figure 7).

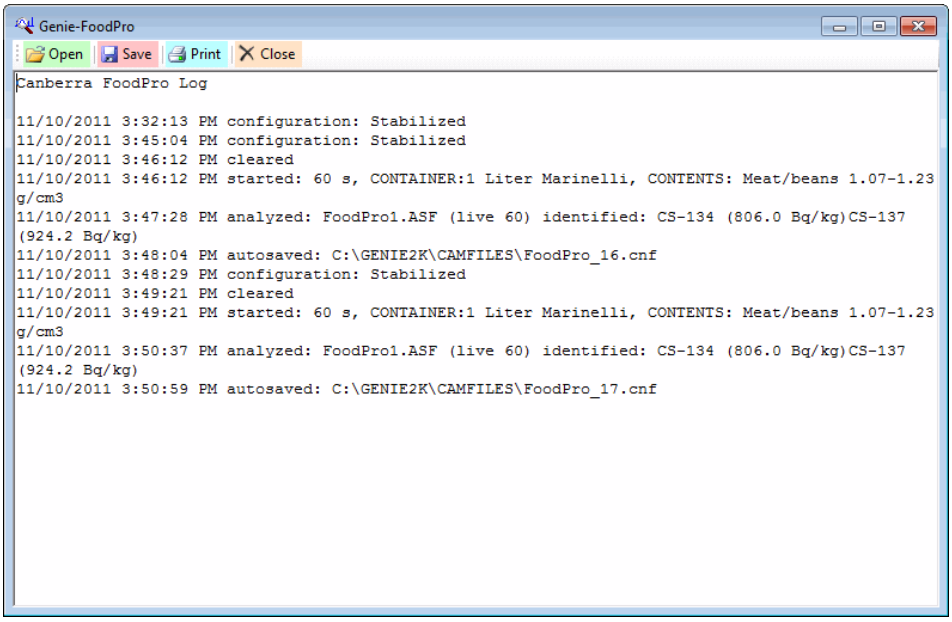


Figure 7: Sample Event Log Report

Configuration

The **Configuration** menu option opens a screen with the following options. Note that the cells that require file paths require either full path specifications or just file names, when the files are located in the default directories used by Genie-FoodPro. These directories are themselves based on the default directories used by Genie-2000. A default Genie-2000 installation uses the following directories.

C:\GENIE2K\CALFILES for calibration files

C:\GENIE2K\CAMFILES for certificate and .cnf files

C:\GENIE2K\CTLFILES for analysis sequence files

In addition, the default directory for Genie-FoodPro image files is C:\GENIE2K\FoodPro\Images.

Global Settings

Active Det Ctg; active detector configuration.

Activity Units: for calculating and reporting the activity concentration results.

Autosave: true/false value that defines whether spectral data is saved after a sample count.

Detector Configuration

Cfg Name: detector configuration name.

Detector Name: valid MCA input definition name, as specified via Genie-2000 MCA Input Definition Editor.

.cal File for Cal Check: file from which an efficiency calibration will be imported.

Cal Check(s): the duration of measurement, in seconds.

.ctf File: file with certificate information that includes the target energy and emission rate for the K-40 calibration check peak.

Validity (h): number of hours for which a system is considered validated after a successful calibration check.

Cal Sigma Limit: maximum number of standard deviations between the measured and expected calibration check peak areas to validate a successful calibration check. The expected calibration counts are based on the emission rates specified in the calibration certificate. Typical limit values might range from 4 to 10, with a default value of 8.

Correlation Limit: minimum correlation coefficient that will validate a successful calibration check. The correlation coefficient value ranges from 0 to 1 and is a measure of how closely the calibration spectrum matches the shape of the calibration certificate peak model. Typical limit values might range from 0.3 to 0.9, with a default value of 0.6. The Sigma Limit is also used to validate the calibration check.

Autosave Path: full directory path and an optional filename prefix. This will be appended by an incremented integer for the storage of sample count data.

Sample Configuration for Detector Configuration

Note: The visible sample (count) configurations only apply to the highlighted detector configuration in the Detector Configurations table. Highlighting a different detector configuration results in the display of a different set of sample configurations.

Container: container in which a food sample is measured.

Contents: a food category based on density, usually with a representative food type in the name.

.cal File: file containing an efficiency calibration.

Quantity: amount of food in the sample in terms of the quantity Units. This should correspond to the Mass value for the factory default sample count configurations as long as the Units parameter is a unit of mass. Note: if the Quantity parameter is changed for a factory default sample count configuration then the associated maximum systematic uncertainty will change.

Units: quantity units used to represent the quantity of food and activity concentration; for example “kg”.

Mass, g: mass in grams, preset for each specific sample configuration to give the correct activity concentration. This is only used with massimetric efficiency calibrations. This should not be changed for the factory default sample count configurations or the maximum systematic uncertainties will change.

Acquisition (s); measurement period in seconds.

.asf File: analysis sequence file path.

Image File: path of a .png file containing an image that represents the container.

Selectable: whether or not this sample configuration will be displayed in the main screen's Container and Contents drop-down lists.

Limits Category: category name that corresponds to a set of limits from the Nuclide Activity Concentration Limits table.

Nuclide Activity Concentration Limits

Category: name used to group a set of limits together; for reference by sample configurations.

Nuclide Name: name that (exactly) matches a nuclide name in the (.nlb) nuclide library file specified in the analysis sequence.

Activity/Unit: activity concentration action level, in terms of global activity units per sample configuration quantity units.

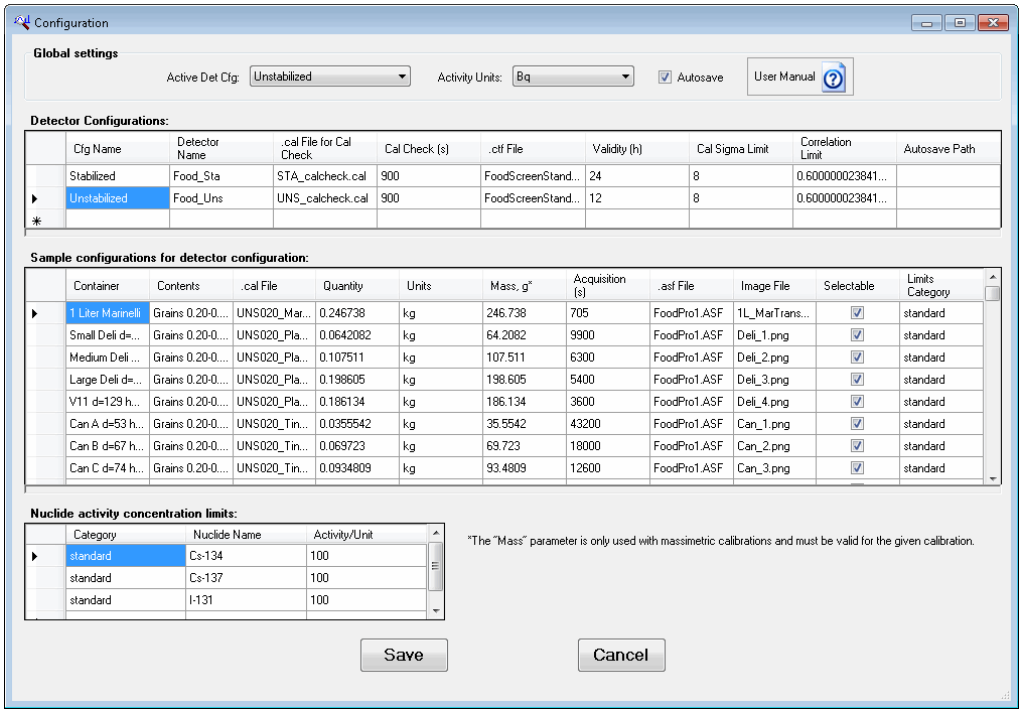


Figure 8: The Configuration Screen

A. System Software Installation

This appendix describes the Genie-FoodPro software installation and setup process.

PC Specifications

Genie-FoodPro Application Software system requires a personal computer with at least:

- 2.0 GHz Dual Core Pentium® highly recommended.
- 2 GB memory, 200 GB hard disk; CD ROM, USB.
- 1024 x 768 video adapters.
- 32-bit Windows® 7 SP1 or Windows XP Professional SP3

Installing the Software

The following steps describe how to install the Genie-FoodPro onto a 32-bit Microsoft Windows 7 SP1 or Windows XP SP3 system. See Appendix A, Software Installation, of the Genie 2000 Spectroscopy Software Operations Manual for further details on installing Genie-2000 software.

Note: Do not create a new MCA Input Definition (MID) for the detector since a preexisting one will be used (see below).

1. Install V3.2.1 or later of the Model S500/502/504 Genie-2000 Basic Spectroscopy software. The installation of a pdf file reading application is strongly recommended for the Genie-FoodPro software. If Adobe Acrobat Reader is not installed, the Genie installation process will present a prompt for installation.

2. Install V3.2.3 or later of the Model S501 Genie-2000 Gamma Analysis Option software.

3. Install V1.0.2 or later of the Osprey Program disc via the setup.exe program application if the installation is not automatically launched when the disc is inserted. The FoodScreen is configured for USB connectivity by default. See the section “Setting Up a USB Connection” in appendix B of the Osprey User’s Manual for information on configuring a PC for TCP/IP connectivity over USB.

4. A MID file and folder are provided with each FoodScreen detector. Copy these items to the Genie-2000 MIDFILES folder. The default location for the MIDFILES folder in a Genie-2000 installation is C:\GENIE2K\MIDFILES. Load the MID definition into the runtime database, per the instructions in the Genie-2000 Spectroscopy Software Operations manual

5. Connect the Osprey. Note that any Osprey IP address changes require corresponding changes in the MID.

6. Install the Genie-FoodPro software from the installation disc via the setup.exe program application if the installation is not automatically launched when the disc is inserted.

7. Launch Genie-FoodPro. Select the correct detector configuration if not already selected by default. Execute a calibration check to automatically adjust the energy calibration.

B. Troubleshooting

This appendix provides troubleshooting information for the FoodScreen System.

Problem

Samples too tall to fit in shield.

Solution

In the case of a Marinelli beaker remove the wire basket to allow the beaker to surround the detector. For all other sample types the basket must remain in place, and the lid of the shield may remain open if necessary.

Problem

Samples too wide to fit in shield.

Solution

If containers do not fit in the shield due to a large diameter they cannot be measured accurately. Transfer sample into a container that fits, such as a Marinelli beaker.

Problem

Consistently elevated measurement results.

Solution

It may be worthwhile to test whether there may be system surface contamination from a previous measurement/spill. Perform a measurement with no sample present and select the "Can A (Raw vegetables 0.53-0.60 g/cm3)" configuration. Verify that there is no measureable activity reported by checking that "< n" is listed for every nuclide (where n is a number that represents the MDA of the nuclide measurement).

The Genie-2000 software package is useful for advanced troubleshooting. Exit the FoodPro application before using the FoodScreen detector with Genie-2000 (and vice-versa).

The "Genie-2000 Operations Manual.pdf" and "Osprey User's Manual.pdf" documents are available on the Genie-2000 installation media for reference.

For further assistance, contact the Canberra Service Department.

Restoration of Default Configuration

The original detector configurations and their associated sample count configurations may be found in the Unstabilized.txt and Stabilized.txt files, albeit in another format, in the GENIE2K\FoodPro directory. One may copy values from these simple text files and copy them into the appropriate areas of the Genie-FoodPro Configurations screen if undesired changes have been made.

Consider reinstallation of the application if complete reversion to all default application settings is acceptable. Alternatively, one may contact the Canberra Service department for assistance with more complicated scenarios.

Notes

Warranty

Canberra (we, us, our) warrants to the customer (you, your) that for a period of ninety (90) days from the date of shipment, software provided by us in connection with equipment manufactured by us shall operate in accordance with applicable specifications when used with equipment manufactured by us and that the media on which the software is provided shall be free from defects. We also warrant that (A) equipment manufactured by us shall be free from defects in materials and workmanship for a period of one (1) year from the date of shipment of such equipment, and (B) services performed by us in connection with such equipment, such as site supervision and installation services relating to the equipment, shall be free from defects for a period of one (1) year from the date of performance of such services.

If defects in materials or workmanship are discovered within the applicable warranty period as set forth above, we shall, at our option and cost, (A) in the case of defective software or equipment, either repair or replace the software or equipment, or (B) in the case of defective services, reperform such services.

LIMITATIONS

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EXCLUSIONS

Our warranty does not cover damage to equipment which has been altered or modified without our written permission or damage which has been caused by abuse, misuse, accident, neglect or unusual physical or electrical stress, as determined by our Service Personnel.

We are under no obligation to provide warranty service if adjustment or repair is required because of damage caused by other than ordinary use or if the equipment is serviced or repaired, or if an attempt is made to service or repair the equipment, by other than our Service Personnel without our prior approval.

Our warranty does not cover detector damage due to neutrons or heavy charged particles. Failure of beryllium, carbon composite, or polymer windows, or of windowless detectors caused by physical or chemical damage from the environment is not covered by warranty.

We are not responsible for damage sustained in transit. You should examine shipments upon receipt for evidence of damage caused in transit. If damage is found, notify us and the carrier immediately. Keep all packages, materials and documents, including the freight bill, invoice and packing list.

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