

August 2019 - Version 5.0

Fruit Fly Monitoring System Version 5.0

Quick Reference Guide



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What's New in Version 5.0

The Fruit Fly Monitoring System Version 5.0 has some great features included, all with the goal to assist in management of Traps and Fruit Fly monitoring.

1. The new mapping feature Heat Map Viewer was included. Using this tool, the user is able to view fruit fly concentrations in their country based on a time period or the tool has the capability for displaying concentrations for a chosen fruit fly species.



2. Another mapping feature that has been included is the Online Map. This is an integrated version of the Map Export, meaning that everything is done solely within the system and does

not require third party software (e.g. Google Earth). It also comes with the capability of clustering.



1 Introduction

1.1 Overview

The Fruit Fly Monitoring System is an online centralized database of the Fruit Fly Trapping data for the Caribbean region.

Its goal is to provide a standardized platform for Fruit Fly trapping data from various countries across the region. This will aid in the reporting of the Fruit Fly numbers in the various countries. Built into this system are tools that will aid in the faster data entry of Fruit Fly related data.

1.2 System Introduction

The Fruit Fly Monitoring System uses a secured website interface for access to the data entry forms as well as reports and is secured by a username and password. It allows the authorized user (Inspector or Trapper) to enter trapping data for his/her country related to the following:

- > Trap Registration
- > Inspection
- > Fruit Fly Counts

All aspects of the Fruit Fly Trapping data are captured in relation to the country and can be viewed by the specified authorized users (Inspectors and Viewers) for that particular country.

The system incorporates business rules, standards and validation on the data entered to assist in the data capture process.

1.3 Business Rules

Business Rules are incorporated into the system as follows:

- ➤ A user has to be registered to access the system and will only be able to access their own country data.
- > Trapping related data can only be entered for the country of the registered user.
- A Trap can be relocated at most once per day.
- ➤ Only one inspection per day can be entered against a Fruit Fly type for a particular Trap.
- A Trap can only be of one type.

- A Host can be changed only when the Activity Type for the Inspection is "Rotated".
- An Inspection Record for Installation is created on creation/registration of the new Trap.

1.4 Standards

Implementation of data standardization provides the base of any information system. It provides a starting platform to facilitate collation and analysis of data. As such, certain standards have been implemented to aid in the analysis of inspection trapping data.

Location format type will be captured with respect to the latitude and longitude of the Trap Location.

1.5 Validation

The validity of data plays a key role in the usability of the data; as such certain validation checks (some of which are derived from the business rules) have been included in the system. The following gives an overview of the validation checks included:

- Entry of Inspection related data is restricted to users with those privileges.
- Trapping related data can only be entered for the country of the user.
- > A Trap can be rotated at most once per day.
- ➤ Only one inspection per day can be entered against a Fruit Fly type for a particular Trap.
- A Trap can only be of one type.
- ➤ The Trap ID for a trap can only contain letters, numbers, spaces, dots, and dashes. Anything else is disallowed.
- Required fields on the data entry forms will be tagged with an asterisk (*).
- Inspections can be created using only pre-existing Host, Activity, Trap, Fruit Fly type data.
- A Host can be changed only when the Activity Type for the Inspection is "Rotated".
- An Inspection Record for Installation is created on creation/registration of the new Trap.
- ➤ Inspection data cannot be entered when the Inspection Date is less than the Registration Date of the Trap (Installation Date).
- > Date capture:
 - o Entered in the format 'YYYY-MM-DD'.
 - o Cannot be greater than the current day.

1.6 Maintaining Data Integrity

The system will only be able to validate based on business rules and standards. In order to ensure that Data Integrity is maintained, it is a valued best practice that when performing Data Entry or Inspection checks, *always* double-check the data before continuing onto the next record.

Also, entries of standard data such as Activity, Trap Type, Host and Fruit Fly have been disabled. This can only be modified by the Administrator of the system, once consensus on the modification has been achieved by representatives of the various participating countries.

1.7 System Requirements

The following are the system requirements for using the Fruit Fly Monitoring System

- ✓ Internet Access
- ✓ Internet Browser (Internet Explorer 11, Google Chrome 34+, Mozilla 22+)
 - Google Chrome is highly recommended
- ✓ Javascript enabled

2 Using the Fruit Fly Monitoring System

In order to access the Fruit Fly Monitoring System, one must access the application website page and then log-in to the system using the credentials provided.

2.1 Website access

Open a web browser (Internet Explorer 11, Google Chrome 34+, etc.)

Enter the following URL in the address bar:

http://www.cphdforum.org/fruitfly

The system log-in screen is shown

Fruit Fly Sy Secure Log	ystem jin
Email:	
Password:	Forgot your password?
■ Keep me logged in	Login
You don't have an	account yet? Register here

2.2 Log - in

- 1. In the Email field, enter Email
- In the Password field, enter the Password.
 If the password entered is invalid, then the message The password you have entered is invalid... Access denied... is shown.
- 3. Press **Ok** and enter the password again.

3 About the Website Interface

Once the user has logged in, the user will be taken to the Administration screen. The menu for the Fruit Fly Monitoring System is located on the left of the Administration screen. This menu is used to navigate from one data entry form to another and is grouped as follows:

- ➤ Inspection addition of a new Inspection and modification of Inspection data.
- > Traps addition of a new Trap and modification of Trap data.
- ➤ Districts addition of a new District.
- Fruit Fly View Fruit Fly information such as Name and Gender.
- ➤ Host View Host data. The Host Name is linked to the CABI's Crop Protection Compendium.
- ➤ Activity View Activity descriptions.
- ➤ Trap Type View available Trap Type Codes.

On the right of the Administration screen is the area for display of the different aspects of the Fruit Fly Monitoring System. On this area of the screen the following is shown when an action type is clicked:

- Add Displays the Data Entry form for the item clicked. For example, if **Add** is clicked for an Inspection, the Data Entry form for a new Inspection is shown.
- ➤ View Displays a grid layout of all the data related to that grouping, with certain criteria applied, if applicable.
- Edit Displays a grid layout of all the data related to that grouping, with certain criteria applied, if applicable, along with an **Edit** button. The user is then able to navigate to the data
- > to be edited and, on the click of the **Edit** button the **Edit form** for the chosen record is displayed.
- ➤ Delete Displays a grid layout of all the data related to that grouping, with certain criteria applied, if applicable, along with a **Delete** button. The user is then able to navigate to the data to be deleted and on the click of the **Delete** button the record chosen will be deleted.

Please note: Exercise caution for this Delete action. The record chosen for delete should be checked and double-checked before being deleted. This action cannot be reversed once performed.

A **Message** area is displayed at the top of the Add and Edit forms. This is shown to the user, on addition of a new record, or on edit of a pre-existing record and displays the errors encountered. This is shown until the user fixes the issues that resulted in the **Message** being displayed.

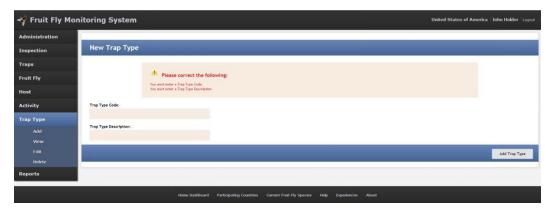


Figure 3-1

3.1 Using the Calendar to Enter a Date

Click in the Date field, for example, Inspection Date.
 The Calendar is displayed.

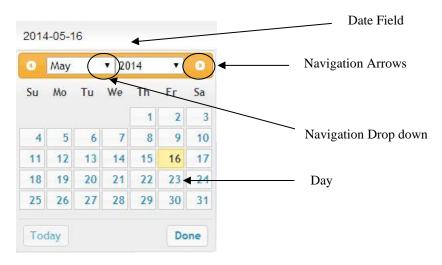


Figure 3-2

- 2. Navigate to the **Month** and **Year** by either choosing from the drop-down list or using the arrows to move between the months and year.
- 3. Once, the **Month** and **Year** has been selected, select the date by clicking on the **Day** (e.g. 16, 10 etc.)
- 4. Click **Done**.

The **Date** field is populated with the Date chosen using the calendar.

4 About the Forms

There are two (2) main menus in the system that is the prime focus of the Fruit Fly Monitoring System and these are:

- > Trap
- > Inspection

There are four (4) other menus that provide access to viewing data that is used in the forms relating to Trap and Inspection.

The main areas (Trap and Inspection) will be covered in this guide.

4.1 About the Trap Menu

The Trap menu allows the user to enter, view, modify/edit and delete Trap data for traps related to country of that logged in user. These actions are available only to users with these privileges granted for the applicable Country and are only available for those records related to that Country.

4.2 About the Inspection Menu

The Inspection menu allows the user to enter, view, modify and delete Inspection data related to country of the logged in user. These actions are available only for the users with these privileges granted for the applicable Country and are only available for those records related to that Country.

5 Adding a Record

A record can be added to the Fruit Fly Monitoring System by performing the following actions:

1. Click on the Navigation menu for the particular item to be added (e.g. Inspection Menu tab, if the Inspection is to be added).

The menu tab expands to show the Sub-Menu items - Add, View, Edit and Delete.

- 2. Click the Add link
 - The Add form for the menu item clicked will open to the right side of the screen
- 3. Enter values in the field of the Add form or choose from dropdown lists where available.
- 4. Once completed, click the Add button located to the bottom-right of the screen.

6 Viewing a Record

1. Click on the Navigation menu for the particular item to be viewed (e.g. Inspection Menu tab, if the Inspection is to be viewed).

The menu tab expands to show the Sub-Menu items - Add, View, Edit and Delete.

2. Click the View link

The View listing for the menu item clicked will open to the right side of the screen.

7 Editing a Record

1. Click on the Navigation menu for the particular item to be edited (e.g. Inspection Menu tab, if the Inspection is to be edited).

The menu tab expands to show the Sub-Menu items - Add, View, Edit and Delete.

- 2. Click the Edit link.
- 3. A listing of all records for the item already in the system for the Country of the user logged in is displayed.
- 4. Click the Edit icon located next to the record to be edited.

 The Edit form for the menu item clicked will open to the right side of the screen
- 5. Enter values in the field of the Edit form or choose from dropdown lists where available.
- 6. Once completed, click the Edit button located to the bottom-right of the screen.

8 Deleting a Record

1. Click on the Navigation menu for the particular item to be deleted (e.g. Inspection Menu tab, if the Inspection is to be deleted).

The menu tab expands to show the Sub-Menu items - Add, View, Edit and Delete.

2. Click the Delete link.

A listing of all records for the item already in the system for the Country of the user logged in is displayed.

3. Click the Delete icon located next to the record to be deleted.

9 Inspection Menu

9.1 Overview

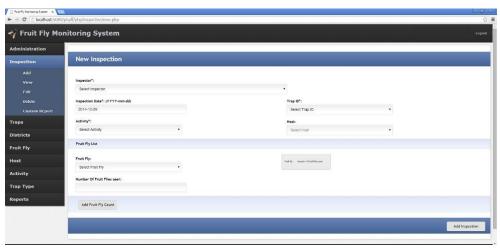
The Inspection menu allows the user to enter, view, modify and delete Inspection data related to the country of the logged in user. These actions are available only for the users with these privileges granted for the applicable Country and are only available for those records related to that Country.

9.2 Add an Inspection

There are two (2) parts to adding an Inspection:

- ➤ Add the Inspection header Inspector, Inspection Date, Trap Id, Host and Activity.
- Add Fruit Fly Trapping Data Fruit Fly species and its number (or count).
- Click on the menu tab **Inspections**.
 The menu expands to display Add, View, Edit and Delete.
- 2. Click on the menu option **Add**.

The New Inspection form is displayed.



3. Choose the **Inspector** from the drop-down list.

Notes:

- i. Inspectors are displayed only for the particular country of the user signed in.
- ii. If the Inspector is not in the list, then this is a new Inspector that has to be created in the system first. Please contact the administrator.

4. Enter the **Inspection Date** by either

- i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
- ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)
 Note: The Inspection Date is automatically populated with the date of the last inspection.
- 5. Select a **Trap ID** from the drop-down list.

Notes:

- i. Trap IDs are displayed only for the particular country of the user signed in.
- ii. If the Trap ID is not in the list, then this is a new Trap ID that has to be created in the system first (see section Add a Trap).
- 6. Select an **Activity** from the drop-down list. If the Activity is "Rotated" then go to Step (7) *Note:*
 - i. If the Activity is not in the list, then this is a new Activity that has to be created in the system first. Contact the FFMS administrator.
 - ii. A Host can be chosen Only if the Activity is "Rotated".
- 7. Select a **Host** from the drop-down list.

Note: If the Host is not in the list, then this is a new Host that has to be created in the system first. Contact the FFMS administrator.

8. Select **Fruit Fly** species from the drop-down list

Note: If the Fruit Fly species is not in the list, then this is a new Fruit Fly that has to be created in the system first. Contact the FFMS administrator.

- 9. Enter the **Number** (or **Count**) for the Fruit Fly species chosen in Step (8).
- 10. Click the button **Add Fruit Fly Count**.

The Fruit Fly table (to the right of the screen) is populated with the Fruit Fly counts entered.

- 11. Repeat the addition of Fruit Fly numbers step (8) to (10) for the rest of Fruit Fly trapping data.
- 12. Once all of the Fruit Fly numbers are entered **click the button Add Inspection**, to add the Inspection data into the system.

Note:

- i. The <u>click of the button Add Inspection is very important</u>, the data will not be saved if this button is not clicked and will have to be re-entered!
- ii. Errors with the data entered are displayed at the top of the New Inspection form.

 Please read the messages carefully and fix the appropriate data according to the message content.

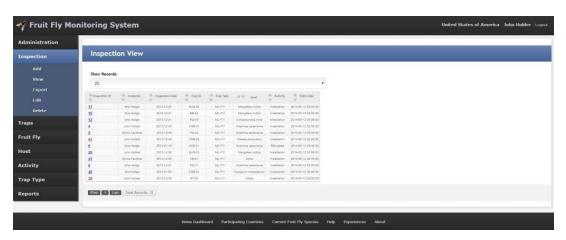
9.3 View Inspections

The View option not only allows the authorized user to view his/her country's Inspection data, but also allows for:

- > Sorting on any of the displayed columns.
- ➤ Addition, Editing, Deleting of Trapping Data (Fruit Fly counts) for an already existing Inspection.
- Click on the menu tab **Inspections**.
 The menu expands to display Add, View, Edit, Delete.
- 2. Click on the menu option **View**.

A listing of all the Inspection data already in the system for the Country of the user logged in is displayed. This includes:

- ➤ Inspection ID (this is generated by the system)
- Inspector (name of the Inspector who captured this data)
- > Inspection Date
- > Trap ID
- > Trap Type
- ➤ Host
- > Activity
- Entry Date of the Record (this is generated by the system)



9.3.1 Sort Inspection data

Click on the **Up** arrow of the particular column to sort that column in **Ascending** Order

Click on the **Down** arrow of the particular column to sort that column in **Descending** Order

Click on the Inspection ID link to Add, Edit or Delete Fruit Fly Counts for this Inspection record. (See sections *Add Fruit Fly, Edit Fruit Fly, Delete Fruit Fly*).

9.4 Edit an Inspection

The Edit option not only allows the user to edit his/her country's Inspection data, but also allows for:

- > Sorting on any of the displayed columns.
- ➤ Addition, Editing, Deleting of Trapping Data (Fruit Fly counts) for an already existing Inspection.

This follows the same steps as detailed in View Inspection (see sections *Add Fruit Fly Counts*, *Edit Fruit Fly Counts*, *Delete Fruit Fly Counts*)

1. Click on the menu tab **Inspections**.

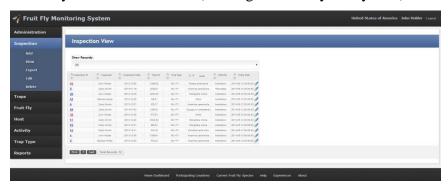
The menu expands to display Add, View, Edit, Delete.

2. Click on the menu option **Edit**.

A listing of all the Inspection data already in the system for the Country of the user logged in is displayed. This includes:

- Inspection ID (this is generated by the system)
- Inspector (name of the Inspector who captured this data)

- > Inspection Date
- > Trap ID
- > Trap Type
- ➤ Host
- Activity
- Entry Date of the Record (this is generated by the system)



Note: To sort Inspection data

Click on the Up \triangle arrow of the particular column to sort that column in **Ascending** Order

Click on the **Down** arrow of the particular column to sort that column in **Descending**Order

- 3. Click on the **Edit** icon is displayed next to Inspection record.

 The Edit Inspection screen is displayed with the existing Inspection data for this record.
- 4. Modify the data as necessary.
- 5. Click the **Edit Row** button to save the changes.

Note: Errors with the data entered are displayed at the top of the Edit Inspection form.

Please read the messages carefully and fix the appropriate data according to the message content.

9.5 Delete an Inspection

The Delete option not only allows the authorized user to delete his/her country's Inspection data, but also allows for:

> Sorting on any of the displayed columns to assist in finding the Inspection record to delete.

➤ Addition, Editing, Deleting of Trapping Data (Fruit Fly counts) for an already existing Inspection.

This follows the same steps as detailed in View Inspection (see sections *Add Fruit Fly Counts*, *Edit Fruit Fly Counts*, *Delete Fruit Fly Counts*)

1. Click on the menu option **Delete**.

A listing of all the Inspection data already in the system for the Country of the user logged in is displayed. This includes:

- > Inspection ID (this is generated by the system)
- Inspector (name of the person who captured this data)
- > Inspection Date
- > Trap ID
- Trap Type
- ➤ Host
- Activity
- Entry Date of the Record (this is generated by the system)



1. Click on the **Delete** icon displayed next to the Inspection record.

The record to be deleted is highlighted in Red and a prompt is shown to verify that the data should be deleted.

2. Click **OK** to go ahead and **Delete** the record. A message will be displayed, indicating that the record has been deleted.

or

Click Cancel to Cancel the delete process. The Inspection View Screen is displayed.

Note: If an Inspection has Fruit Fly Counts assigned, then it cannot be deleted until those Fruit Fly Counts records assigned to it are deleted.

9.6 Add Fruit Fly Counts

1. Click on the **Inspection ID** link, accessed via the View Inspection screen (see section *View an Inspection*).

The existing Fruit Fly counts are displayed in tabular format.

Note: If Counts were never entered against a Fruit Fly species, then Fruit Fly counts are not displayed.

2. Click the Add New Fruit Fly Count

The screen for addition of Fruit Fly Counts is displayed.



3. Select the **Fruit Fly** from the dropdown list

Note: If the Fruit Fly is not in the list, then this is a new Fruit Fly species that has to be created in the system first.

- 4. Enter the **Number of Fruit Flies Seen**.
- 5. Click the **Add Fruit Fly Counts** button.

Note: Errors with the data entered are displayed at the top of the Add Fruit Flies form.

Please read the messages carefully and fix the appropriate data according to the message content.

9.7 Edit Fruit Fly Counts

1. Click on the **Inspection ID** link, accessed via the View Inspection screen (see section *View an Inspection*).

The existing Fruit Fly counts are displayed in tabular format.



The **Edit** icon is displayed next to the Fruit Fly Count record.

2. Click the **Edit** icon.

The Edit Fruit Fly screen is displayed with the existing Fruit Fly data for this record.

- 3. Modify the data as necessary.
- 4. Click the **Edit Row** button to save the changes.

Note: Errors with the data entered are displayed at the top of the Edit Fruit Flies Count form. Please read the messages carefully and fix the appropriate data according to the message content.

9.8 Delete Fruit Fly Counts

1. Click on the **Inspection ID** link, accessed via the View Inspection screen (see section *View an Inspection*).

The existing Fruit Fly counts are displayed in tabular format.



The **Delete** icon **⋈** is displayed next to the Fruit Fly Count record.

The record to be deleted is highlighted in Red and a prompt is shown to verify that the data should be deleted.

2. Click **OK** to go ahead and **Delete** the record. A message will be displayed, indicating that the record has been deleted.

or

Click Cancel to Cancel the delete process. The View Fruit Fly Counts is displayed.

10 Trap Menu

10.1 Overview

The Trap menu allows the user to enter, view, modify and delete Trap data for traps related to country of that logged in user. These actions are available only for the users with these privileges granted for the applicable Country and are only available for those records related to that Country.

10.2 Add a Trap

Trap Data is composed of the following:

- > Trap ID
- > Trap Type
- > Trap Description
- > Country
- > Trap Registration Date
- > Host
- District

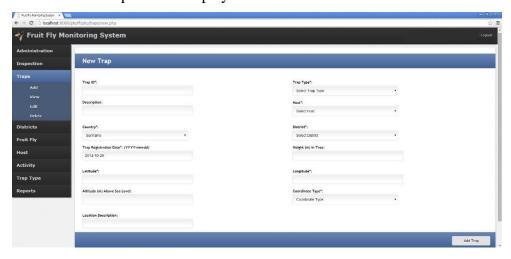
- ➤ Height in Tree
- **Latitude**
- > Longitude
- > Altitude
- Coordinate Type
- Location Description

1. Click on the menu tab **Trap**.

The menu expands to display Add, View, Edit, Delete.

2. Click on the menu option **Add**.

The New Trap form is displayed.



3. Enter a **Trap ID**.

Note: This ID must be unique (does not already exist in the system) and can only be composed of Letters, Numbers, Spaces, Dots (.) and/or Dash (-). If an error is displayed that the Trap ID already exists, then a new Trap ID will have to assigned and then used in the system.

4. Choose a **Trap Type** from the dropdown list.

Note: If the Trap Type is not in the list, then this is a new Trap Type that has to be created in the system first. Contact the Administrator.

- 5. Enter a Description, if available.
- 6. Choose a **Host** from the dropdown list.

Note: If the Host is not in the list, then this is a new Host that has to be created in the system first. Contact the Administrator.

7. Choose a **District** from the dropdown list.

Note: If the District is not in the list, then this is a new District that has to be created in the system first (see section Adding a Record).

- 8. Enter the **Trap Registration Date** by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)

 Note:
 - i. Dates for Inspections for this Trap are checked against this date. Inspections cannot be entered for dates prior to the Trap Registration date.
 - ii. The Trap Registration Date cannot be changed once this record is saved.
- 9. Enter the **Height** (in meters) for the Trap.
- 10. Enter the **Latitude** for the Trap.
- 11. Enter the **Longitude** for the Trap.
- 12. Enter the **Altitude** (in meters) for the Trap.
- 13. Select a **Coordinate Type** from the drop-down list. This will describe the type of Coordinate entered in steps (10) and (11) above
- 14. Enter a Location Description.
- 15. Once all Trap related data are entered, **click the button <u>Add Trap</u>**, to add the Trap data into the system.

Note:

- i. Errors with the data entered are displayed at the top of the New Trap form. Please read the messages carefully and fix the appropriate data according to the message content.
- ii. An inspection record with an Activity "Installation" is created at this point for the new trap.

10.3 View Trap

The View option not only allows the authorized user to view his/her country's Trap data, but also allows for:

- > Sorting on any of the displayed columns.
- ➤ Addition, Editing, Deleting of Location data.
- 1. Click on the menu tab **Trap**.

The menu expands to display Add, View, Edit, Delete.

2. Click on the menu option **View**.

A listing of all the Trap data already in the system for the Country of the user logged in is displayed. This includes:

- ➤ Trap ID
- > Trap Type
- ➤ Host
- ➤ Host Start Date
- District
- **Latitude**
- > Longitude
- ➤ Altitude
- Coordinate Type
- ➤ Location Description
- Entry Date of the Record (this is generated by the system)
- ➤ Entry User of the Record (this is generated by the system and is based on the user logged in)

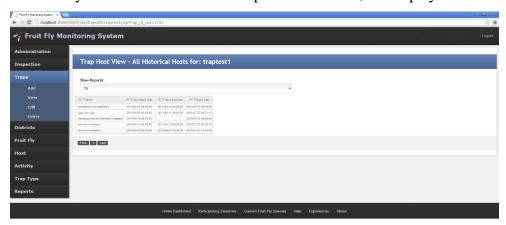
10.3.1 Sort Trap data

Click on the **Up** arrow of the particular column to sort that column in **Ascending** Order

Click on the **Down** arrow of the particular column to sort that column in **Descending** Order

10.3.2 Trap Host Data

1. Click on the **Trap ID** link, accessed via the View Trap screen (see section *View Trap*). The history of Hosts to which this Trap was rotated on, are displayed in tabular format.

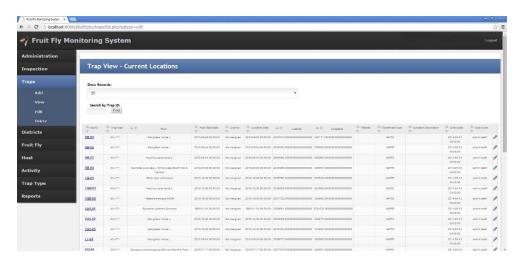


10.4 Edit Trap

The Edit option not only allows the authorized user to edit his/her country's Trap data, but also allows for:

- > Sorting on any of the displayed columns.
- Click on the menu tab **Trap**.
 The menu expands to display Add, View, Edit, Delete.
- 2. Click on the menu option **Edit**.

A listing of all the Trap data already in the system for the Country of the user logged in is displayed.



Note: To sort Trap data

Click on the Up riangleq arrow of the particular column to sort that column in **Ascending** Order

Click on the **Down** arrow of the particular column to sort that column in **Descending**Order

- 3. Click on the **Edit** icon is displayed next to Trap record.

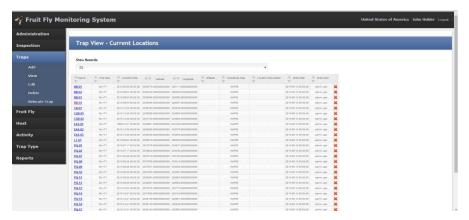
 The Edit Trap screen is displayed with the existing Trap data for this record.
- 4. Modify the data as necessary.
- 5. Click the **Edit Trap** button to save the changes.

Note: Errors with the data entered are displayed at the top of the Edit Trap form. Please read the messages carefully and fix the appropriate data according to the message content.

10.5 Delete Trap

The Delete option not only allows the authorized user to delete his/her country's Trap data, but also allows for:

> Sorting on any of the displayed columns to assist in finding the Trap record to delete.



1. Click on the **Delete** icon **ા** is displayed next to the Trap record.

The record to be deleted is highlighted in Red and a prompt is shown to verify that the data should be deleted.

2. Click **OK** to go ahead and **Delete** the record. A message will be displayed, indicating that the record has been deleted.

or

Click **Cancel** to **Cancel** the delete process. The Trap View Screen is displayed.

Note: If a Trap has Inspections assigned, then it cannot be deleted until those Inspection records assigned to it are deleted.

11 Map Menu

11.1 Map Export

11.1.1 Enhancements to Workflow

The Map Export feature can provide a pictorial representation of the location of Traps along with the number of days that has elapsed since the last Service. The status of these traps service is represented by different colors:

- ➤ Green Under 30 Days
- ➤ Yellow Between 30 and 50 Days
- ➤ Red Over 50 days

It is recommended that Directors and Institution Heads incorporate into their current workflows, the frequent monitoring of the maps to ensure that the Traps are being serviced on time and special focus be placed on insuring that neglected Traps be serviced on a timely basis. Additionally, the map export tool can be key in making strategic decisions on Trap installation along roads etc.

For Data Entry and Trapping staff, the map export tool should be used to validate Trapping data, neglected Traps and GPS coordinates captured in the system.

11.1.2 Generate Map

Once Trap Location Coordinates are entered into the system in an appropriate format, the user can output the traps and the respective coordinates into a KML (Keyhole Markup Language) format, that can then be used to view the trap location in any Earth Browser e.g. Google Earth.

1. Click on the **Map Export** link.

There are a few options for **Map Export**

Option 1: Export using the default of All Currently in System

Exports all the Trap Locations in the System, based on the **Include Eliminated** parameter (see Option 2)

Option 2: Check Include Eliminated

Exports all the Trap Locations in the System, including the Eliminated Traps. Leaving this unchecked will result in the exclusion of Eliminated Traps from the Export File.

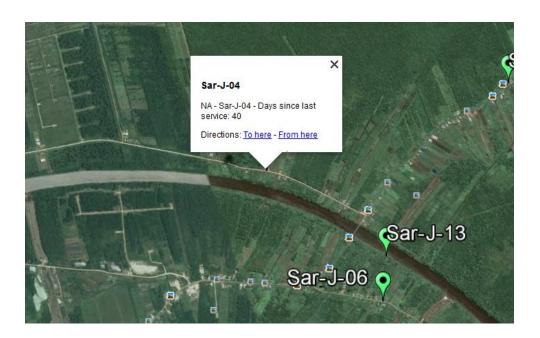
Option 3: Export using Dates

Choose By Dates from the dropdown list Start and End Date parameter fields are displayed.

- 3. Enter the appropriate **Start Date** for the map output, by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)
- 4. Enter the appropriate **End Date** for the map output, by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)** If desired, the option to Include Eliminated traps can be checked.
- 5. Click Export Map

A file with .xml extension is downloaded to the machine.

- 6. Open Google Earth.
- 7. Choose File Open and navigate to the location of the file saved in Step 5.
 Google Earth displays the location of the Traps in the country, in color coded format, along with Number of Days since Last Serviced.



Color Codes:

- ➤ Green Under 30 Days
- ➤ Yellow Between 30 and 50 Days
- ➤ Red Over 50 days





11.2 Heat Map Viewer

11.2.1 Enhancements to Workflow

The Heat Map Viewer is an integrated heat map and can provide a pictorial representation of the concentration of Fruit Flies in an area. The "heat" is represented by different colors:

- ➤ Green Low concentration
- ➤ Yellow Concentration is higher
- ➤ Red High Concentration (Critical)

It is recommended that Directors and Institution Heads incorporate the frequent monitoring of the Heat Map into their current workflows, to monitor the concentration and spread of fruit flies in

their country. This can be key in well-informed and targeted control and eradication measures to ensure that the fruit fly population is first contained and then eradicated.

For Data Entry and Trapping staff, the Heat Map Viewer tool should be used to determine new trapping locations in order to monitor the potential spread of the fruit flies into new areas.

11.2.2 Generate Heat Map Viewer

Once Trap Location Coordinates are entered into the system in an appropriate format, and the fruit fly counts entered, the user can then generate the Map Viewer output.

1. Click on the **Heat Map Viewer** link.

A map is displayed to the right of the screen.

- 2. Enter the appropriate **Start Date** for the map output, by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)
- 3. Enter the appropriate **End Date** for the map output, by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*) Once a date is entered, the map automatically refreshes with output from the new parameter chosen.
- 4. Select the Fruit Fly from the dropdown menu, or leave as the default, to display output for all fruit fly species.

Once a Fruit Fly is chosen, the map automatically refreshes with output from the new parameter chosen.

Map Satellite Clabels Map Parameters Start Date* (YYYY-mm-dd): 2018-08-28 End Date* (YYYY-mm-dd): 2019-08-28 Fruit Fly: Select Fruit Fly: Select Fruit Fly:

Color Codes (Concentration):

- ➤ Green Low
- ➤ Yellow Medium
- ➤ Red High (Critical)

11.3 Online Map

11.3.1 Enhancements to Workflow

The Online Map feature provides a pictorial representation of the location of Traps along with the number of days that has elapsed since the last Service. The status of these traps service is represented by different colors:

- ➤ Green Under 30 Days
- ➤ Yellow Between 30 and 50 Days
- ➤ Red Over 50 days

The Online Map is similar to the Map Export, however, it is integrated into the system and has the additional capability of clustering.

It is recommended that Directors and Institution Heads incorporate into their current workflows, the frequent monitoring of the Online Map to ensure that the Traps are being serviced on time and special focus be placed on insuring that neglected Traps be serviced on a timely basis. The clustering feature

offers an at a glance overview of trap clusters and can be key in making strategic decisions on Trap installation along roads etc.

For Data Entry and Trapping staff, the Online Map tool should be used to validate Trapping data, neglected Traps, Trap locations and GPS coordinates captured in the system.

11.3.2 Generate Map

Once Trap Location Coordinates are entered into the system in an appropriate format, the user can view the traps location without the need for 3^{rd} party software.

1. Click on the **Online Map** link.

As with the Map Export, there are a few options for the **Online Map**

Option 1: Export using the default of All Currently in System

Display all the Trap Locations in the System, based on the **Include Eliminated** parameter (see Option 2)

Option 2: Check Include Eliminated

View all the Trap Locations in the System, including the Eliminated Traps. Leaving this unchecked will result in the exclusion of Eliminated Traps from display on the map.

Option 3: View Map using Dates

2. Choose **By Dates** from the dropdown list

Start and End Date parameter fields are displayed.

- 3. Enter the appropriate **Start Date** for the map output, by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)
- 4. Enter the appropriate **End Date** for the map output, by either
 - i. Entering the date, using the keyboard, in the format YYYY-MM-DD or
 - ii. Choosing a date from the calendar (see section *Using the Calendar to Enter a Date*)
 - ** If desired, the option to Include Eliminated traps can be checked.

5. Click the **View Online Map** button

The map showing the location of the traps is displayed. The initial display will show the cluster of all traps.



As the map is zoomed, the cluster distributes accordingly.

Cluster Color Codes:

- ➤ Purple More than 100 traps
- ➤ Pink Between 10 and 100 traps
- ➤ Blue Less than 10 traps



Trap Color Codes (consistent with the color scheme used in the Map Export tool):

- ➤ Green Under 30 Days
- ➤ Yellow Between 30 and 50 Days
- ➤ Red Over 50 days





12 Administration Menu

12.1 Overview

The Administration menu allows the user to enter, view, modify and delete Inspector data for inspectors related to country of that logged in user. These actions are available only for the users with these privileges granted for the applicable Country and are only available for those records related to that Country.

The Inspectors added via this form will **not** be able to access the Fruit Fly Monitoring System. Access to the system will still be provided via an email sent to

fruitflysystemsupport@cphdforum.org

12.2 Add an Inspector/Trapper

Inspector Data is composed of the following:

- > First Name
- ➤ Last Name
- Click on the menu tab **Administration**.
 The menu expands to display Add Inspector, View Inspector, Edit Inspector, Delete Inspector.
- 2. Click on the menu option **New Inspector**.

The New Inspector form is displayed.



3. Enter the **First Name** of the Inspector.

4. Enter the **Last Name** of the Inspector.

Note: The First Name combined with the Last Name must be unique for this country (does not already exist in the system) and can only be composed of Letters, Numbers, Spaces, and/or Dash (-). If an error is displayed that this name already exists, then the data must be re-checked.

5. Once all Inspector related data are entered, **click the button Add Inspector**, to add the Inspector into the system.

Note:

Errors with the data entered are displayed at the top of the New Inspector form. Please read the messages carefully and fix the appropriate data according to the message content.

12.3 View Inspector

The View option not only allows the authorized user to view his/her country's Inspector listing data, but also allows for:

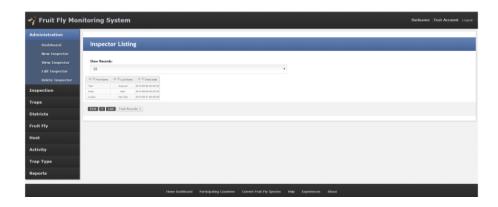
- > Sorting on any of the displayed columns.
- 1. Click on the menu tab **Administration**.

The menu expands to display Add Inspector, View Inspector, Edit Inspector, Delete Inspector.

2. Click on the menu option **View Inspectors**.

A listing of all the Inspectors already in the system for the Country of the user logged in is displayed. This includes:

- > First Name
- ➤ Last Name
- Entry Date of the Record (this is generated by the system)



12.3.1 Sort Inspector data

Click on the **Up** arrow of the particular column to sort that column in **Ascending** Order

Click on the **Down** arrow of the particular column to sort that column in **Descending** Order

12.4 Edit Inspector

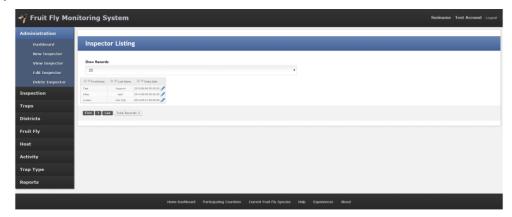
The Edit option not only allows the authorized user to edit his/her country's Inspector data, but also allows for:

- > Sorting on any of the displayed columns.
- 1. Click on the menu tab **Administrator**.

The menu expands to display Add Inspector, View Inspector, Edit Inspector, Delete Inspector.

2. Click on the menu option **Edit Inspector**.

A listing of all the Inspectors already in the system for the Country of the user logged in is displayed.



Note: To sort Inspector data

Click on the Up Arrow of the particular column to sort that column in Ascending Order

Click on the **Down** arrow of the particular column to sort that column in **Descending**Order

- 3. Click on the **Edit** icon is displayed next to Inspector record.
 - The Edit Inspector screen is displayed with the existing Inspector data for this record.
- 4. Modify the data as necessary.
- 5. Click the **Edit Inspector** button to save the changes.

Note: Errors with the data entered are displayed at the top of the Edit Inspector form.

Please read the messages carefully and fix the appropriate data according to the message content.

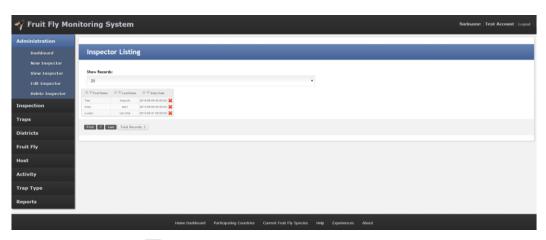
12.5 Delete Inspector

The Delete option not only allows the authorized user to delete his/her country's Inspector data, but also allows for:

- > Sorting on any of the displayed columns to assist in finding the Inspector record to delete.
- 1. Click on the menu option **Delete Inspector**.

A listing of all the Inspectors already in the system for the Country of the user logged in is displayed. This includes:

- > First Name
- ➤ Last Name
- Entry Date of the Record (this is generated by the system)



2. Click on the **Delete** icon **¥** is displayed next to the Inspector record.

The record to be deleted is highlighted in Red and a prompt is shown to verify that the data should be deleted.

3. Click **OK** to go ahead and **Delete** the record. A message will be displayed, indicating that the record has been deleted.

or

Click Cancel to Cancel the delete process. The Inspector Listing Screen is displayed.

Note: If an Inspector has Inspections assigned, then it cannot be deleted until those Inspection records assigned to it are deleted.

13 Host Common Names

The Fruit Fly Monitoring System is a Regional system and as such, common names for Hosts can differ from country to country or may represent different hosts in different countries. Thus, to enable standardization of Host tracking, a Host list detailing the Scientific Host Name along with the English Name and Common names in the various countries was incorporated into the Fruit Fly Monitoring System.

13.1 Enhancements to Workflow

With the new Host Name References which shows the different Common Names within each country, it is now much easier to determine and match Common Names to Scientific Names.

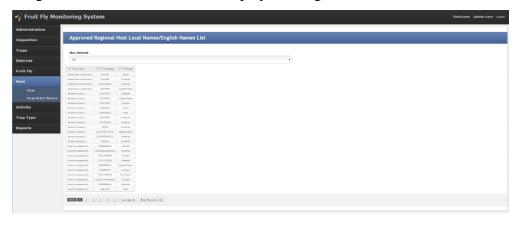
When entering a new Trap record with an unknown Scientific Name, the user can refer to the Approved Regional Host Local Names/English Names List.

13.2 View Host Common Names

Click on the menu option **Host**.
 Two menu items are displayed: View and View Other Names

2. Click on the **Host** menu option **View Other Names**

A listing of Host Scientific Name is displayed along with the Local Name and Country.



This list also displays the English Name for the Host.

13.2.1 Sort Host Common Names data

Click on the **Up** arrow of the particular column to sort that column in **Ascending** Order

Click on the **Down** arrow of the particular column to sort that column in **Descending** Order

14 Dashboard

14.1 Overview

The Dashboard provides an interactive view and graphical view of the Fruit Fly status for the country of the logged in user.

There are three (3) main Fruit Fly analysis charts presented in the Dashboard:

- 1. Fruit Fly Counts
- 2. FTD Rates
- 3. Trap Service

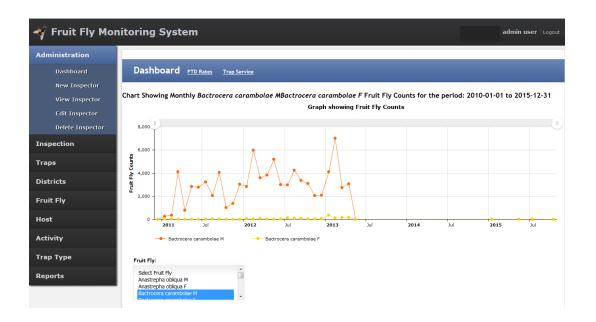
14.2 Enhancements to Workflow

Approved users can view the trend in Fruit Fly data that will assist in decision making and Fruit Fly monitoring management.

It is recommended that on a weekly basis, data entered into the system be validated using the charts provided via the Dashboard, to ensure that data entry errors did not occur as well as to monitor the status of Fruit Fly presence (or absence) in the country.

14.3 Fruit Fly Counts Graph

The Fruit Fly Counts Graph displays the total number of Fruit Flies recorded by month based on a date range. The user is able to select multiple Fruit Flies to view on the Graph (by holding the Ctrl or Shift keyboard button and clicking on the desired Fruit Fly) as well as change the period using the FFMS calendar tool (see section *Using the Calendar to Enter a Date*).



Each selected Fruit Fly is displayed as a line differentiated by line color. If the mouse is hovered over the graph, the Fruit Fly counts recorded for that timeline is displayed.

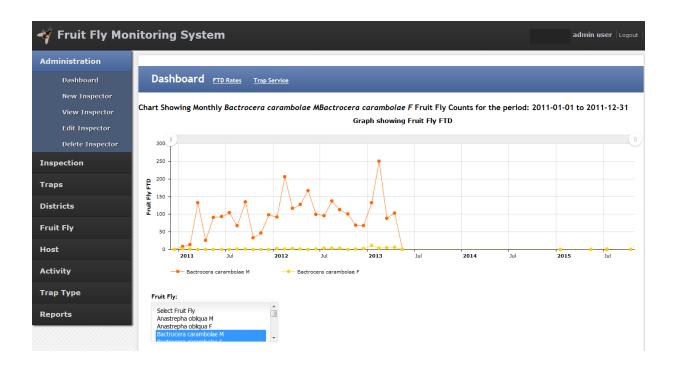


Using the Scroll icon 2 zooms the graph into the period selected as shown below.

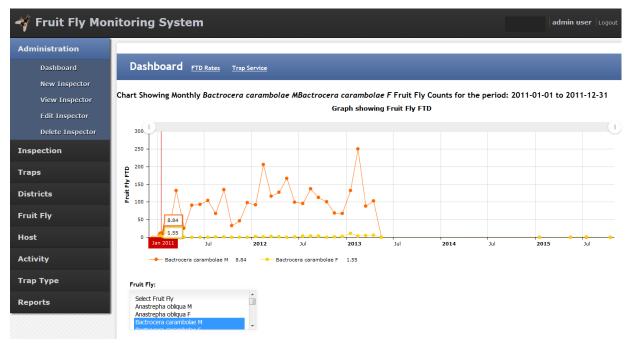


14.4 FTD Rates Graph

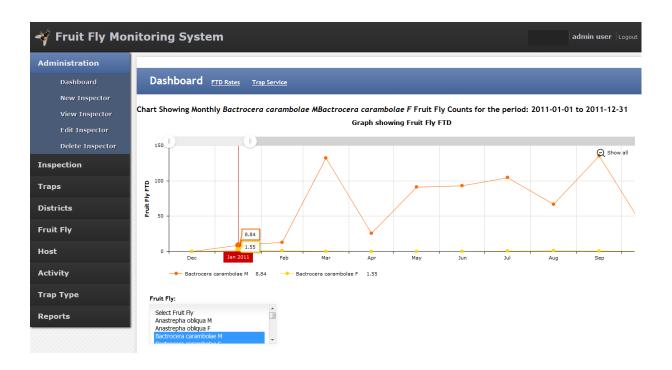
The Fruit Fly FTD Graph displays the average number of Fruit Flies Trapped per Day. The user is able to select multiple Fruit Flies to view on the Graph (by holding the Ctrl or Shift keyboard button and clicking on the desired Fruit Fly) as well as change the period using the FFMS calendar tool (see section *Using the Calendar to Enter a Date*).



Each selected Fruit Fly is displayed as a line differentiated by line color. If the mouse is hovered over the graph, the Fruit Fly Trapped Per Day calculated for that timeline is displayed.

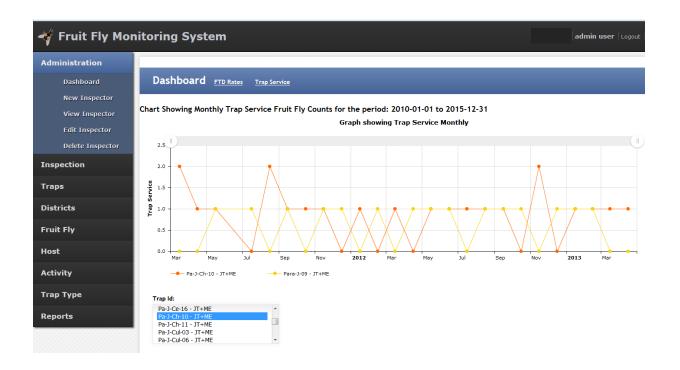


Using the Scroll icon 2 zooms the graph into the period selected as shown below.



14.5 Trap Service Graph

The Trap Service Graph displays the number of service done for a trap or multiple traps by month. The user is able to select multiple Trap Locations to view on the Graph (by holding the Ctrl or Shift keyboard button and clicking on the desired Trap Id) as well as change the period using the FFMS calendar tool (see section *Using the Calendar to Enter a Date*).



Each selected Trap is displayed as a line differentiated by line color. If the mouse is hovered over the graph, the number of services for that timeline is displayed.



Using the Scroll icon 2 zooms the graph into the period selected as shown below.



15 System Administration Contact Information

For any issues, clarifications or requests, System Administration can be contacted via the email address:

fruitfly@cphdforum.org