What is new in BioChek II Software version 2018

Elisa Test – Create a plate layout

- Automatic registration of Customers and flocks/herds: Select Customers from a drop-down list
- Add Last Vaccination
- Quick setup – create plate layouts in the spreadsheet below the plate layout grid
- Import plate layouts from LIMS (.xml format)
- Save Plate Layouts: Save controls in the layout and add plate ID
- Show Labcode/House/Bleeding date in well of the plate layout
- Add comments to your plate layout
- Maximum number of samples per flock/herd increased to 400

Reporting

- New: PCR combined report
- Improved Print Plate Layout

Customers

- Automatic registration of Customers and flocks/herds
- List of countries updates

Configurations

- Type of animal: NEW - Slower growing broiler (SGB)
- Vaccination date prediction parameters: NEW -Slower growing broiler (half-life 4 days)
- Flock/Herd codes: make flock/herd codes mandatory
- Assay: NEW - NDV-F protein ELISA
- Report settings: Trend - Show mean titers on Bars
- Readers: NEW - Thermo Fischer Multiskan FC, Dynex DS2

Data Management

- Custom Export: improved export to LIMS (CSV or TXT file)
- Import BioChek 2010 database into BioChek II Software.
- Automatic export to an online database
- Automatic backup service of your server database

PCR-Test

New for this version of the BioChek II software is the addition of a PCR module that will guide the complete PCR process from creating a plate lay-out to the generation of an easy to read report.

- Digital creation of plate lay-outs
- Automatic calculation of reagent volumes (compensated for dead volume)
- Raw data from the PCR cycler* can be directly imported into the BioChek software
- BioChek II software checks the controls and validates the plate if controls are in range.

If the assay is valid the BioChek II software will check for inhibition in the samples using the IC.

- The BioChek II software will generate an individual report for all the assays on the plate.

*supported cyclers: ABI 7500 series, ABI Quantstudio series, BioRad CFX, Agilent Mx3005p, Rotogene, ARIA MX

New features BioChek II Software 2018

ELISA

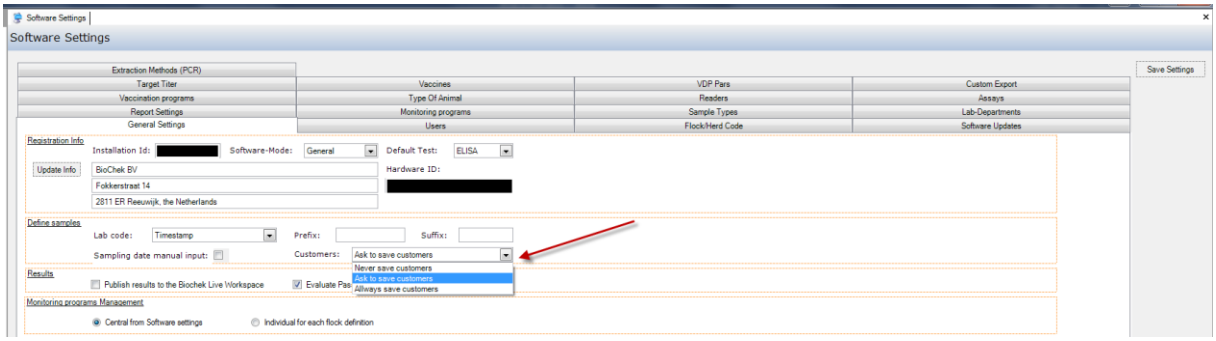
Automatic Registration Customer in plate layout – drop down list

This new version of BioChek II Software allows users to register customers and flock/herds when creating plate layouts. Advantage of this feature is that:

1. Easier to test as Customers are presented in a drop-down menu when creating a plate layout
2. Reduced risks of typo's when filling flock/herd codes.
3. Use of BioChek app – only available for data of register customers and flocks/herds

Setup Automatic Registration Customers and flocks/herds:

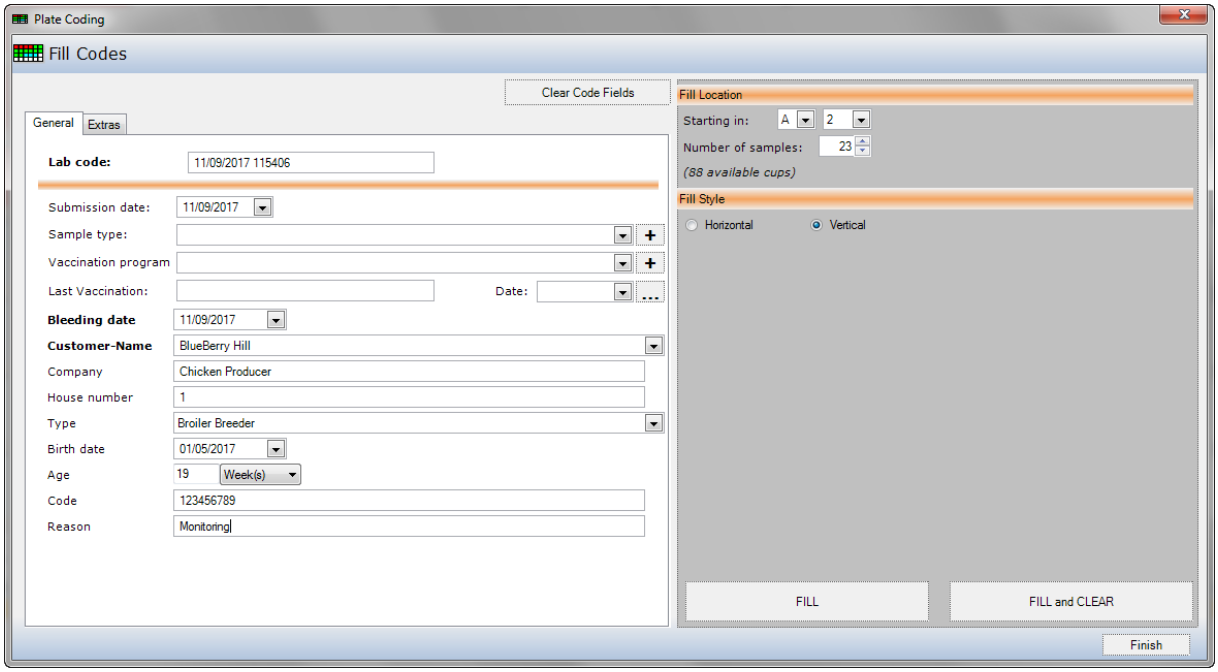
1. **Always save customers** = easiest way to automatically register customers. No popups when registering new customers or houses. If adjustments are made to the previously registered customer or flock/herd it will simply overwrite.
2. **Ask to save customers** = for each new entry of a customer or flock/herd the software will ask if registration is required.
3. **Never save customers** = in case automatic registration is not suitable for your system. Remember that the BioChek app can only be used for data of registered customers.



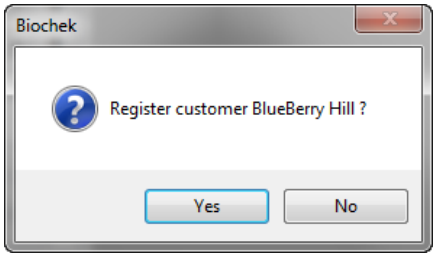
Use Automatic Registration Customers and flocks/herds

1. Go to **Test > ELISA-Test** and click **Create Plate layout**.
2. Start typing the Customer-name. The software will automatically search for customers with that exact letter combination and show it in a drop-down menu

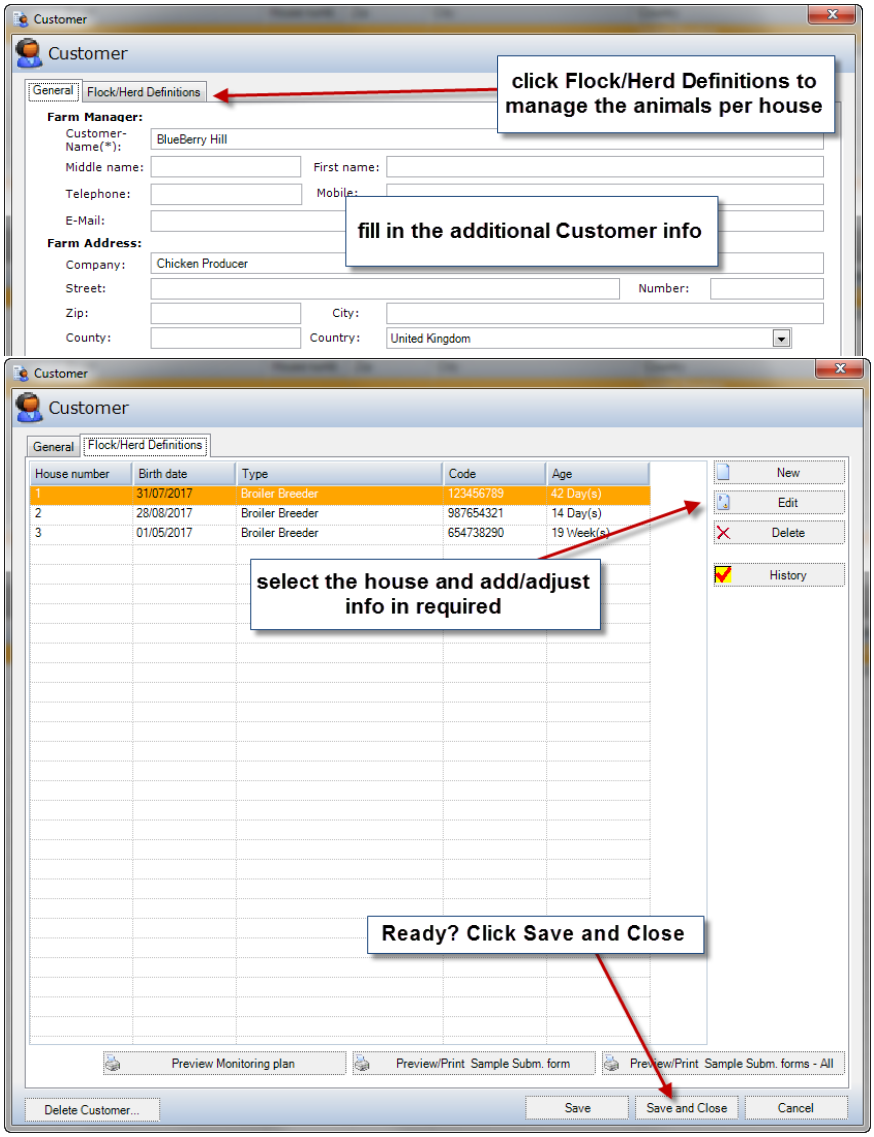
Example Customer- name is **Blueberry Hill** and Company: **Chicken Producer** and Blueberry Hill has multiple houses.



1. Fill all relevant flock codes and click **Fill**.
    a. **Automatic Save**:
        i. The Customer and flock/herd will automatically get registered and one can continue creating the plate layout.
    b. **Ask to save customer**:
        i. The Software will ask if the Customer should get registered or not.

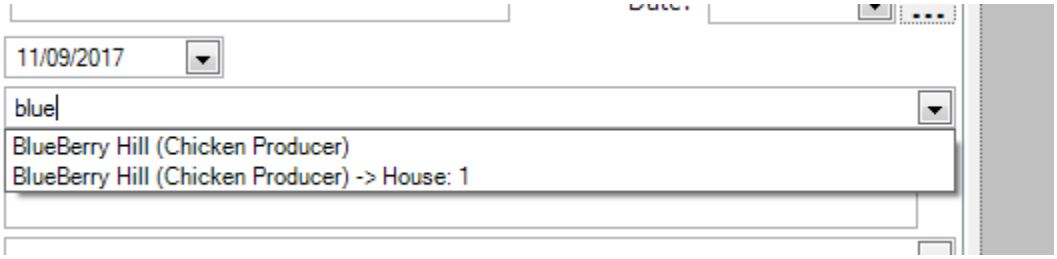


        ii. Click **YES** and the Dialog with customer information will appear allowing the user to add additional customer information. Click on Flock/Herd Definitions to check and add extra information about the flock/herd.

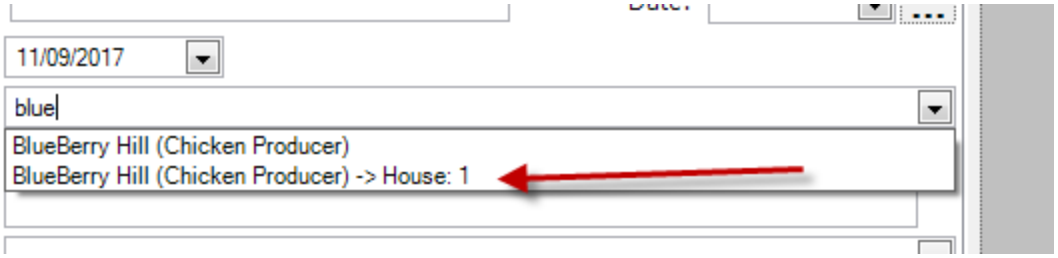


- When ready, click **Save and Close**

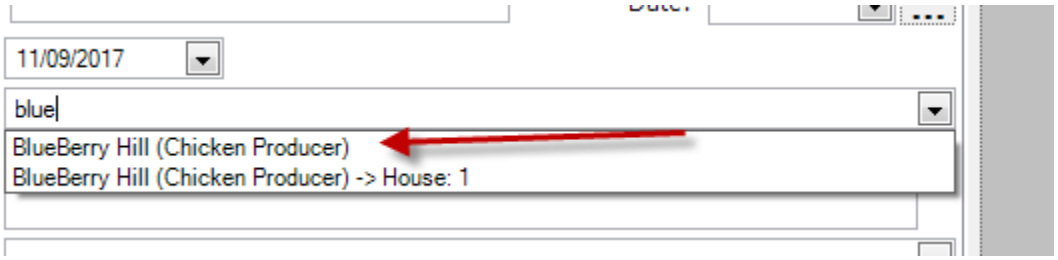
2. The next time the same flock gets tested the technician can start typing the name of the Customer in the Customer-name field and all available registrations with that letter combination will be presented in the drop-down menu:



   a. Now there are several options:
      i. Select the customer + house (e.g. **BlueBerry Hill (Chicken Producer) -> House: 1**)



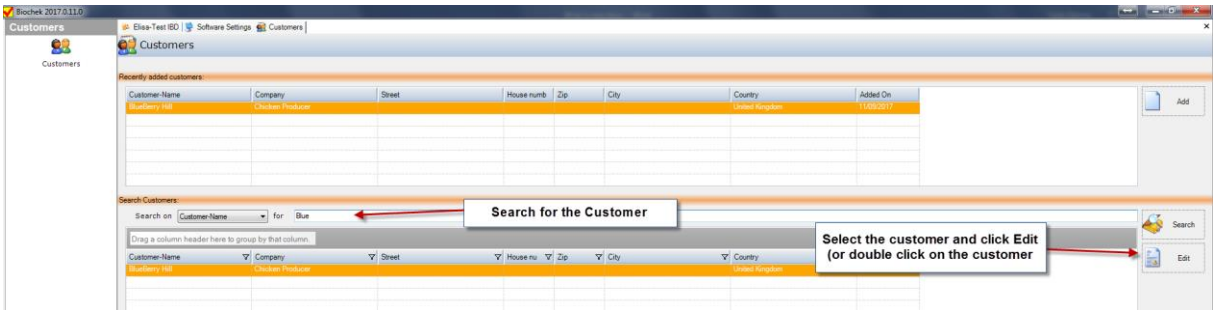
ii. Or, if the customer is already registered but you will test a new house, select the customer (**BlueBerry Hill (Chicken Producer)**) and add the rest of the required information. This new house will be added to this customer.



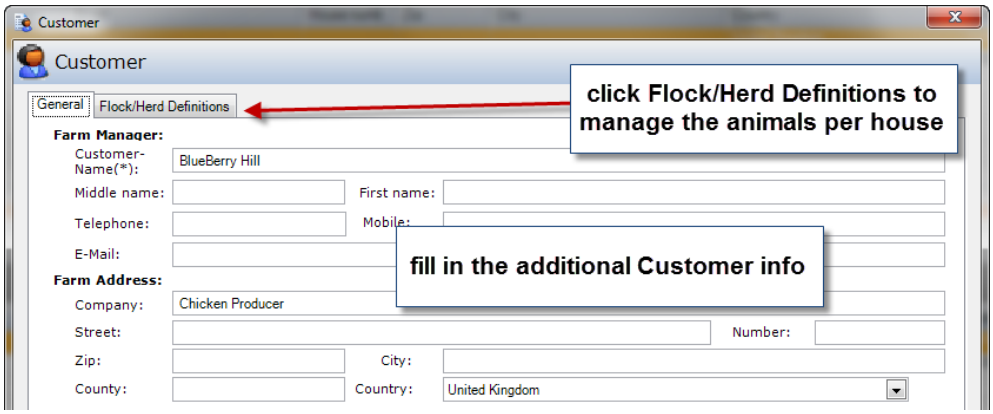
iii. Or, if it is a new customer, just continue typing and move to the next field when ready using **TAB** and fill in the rest of the customer's information. When clicking **Fill** the customer will get registered and it will be in the drop-down list the next time.

Manage Customers and flocks/herds

To manage the customers and flock/herds (add, edit or delete) go to **Customers** and Search the customer.

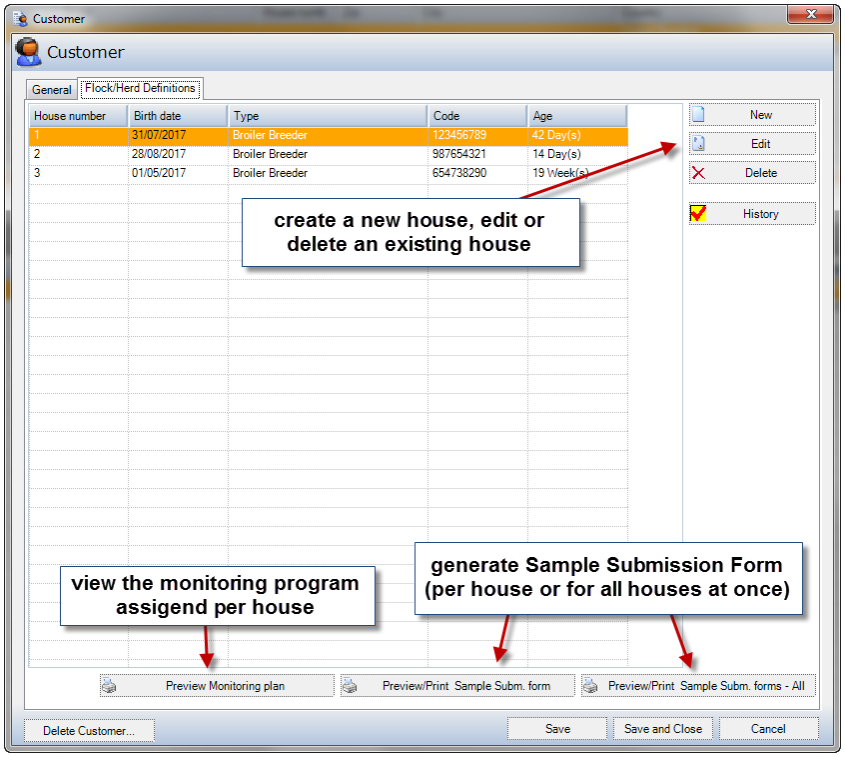


Click **Edit** (or double click on the Customer) and a dialog with customer details is presented.



Click on the **Define Flocks/Herds tab** to manage the flocks/herds per house (double click on the house or click **Edit**).

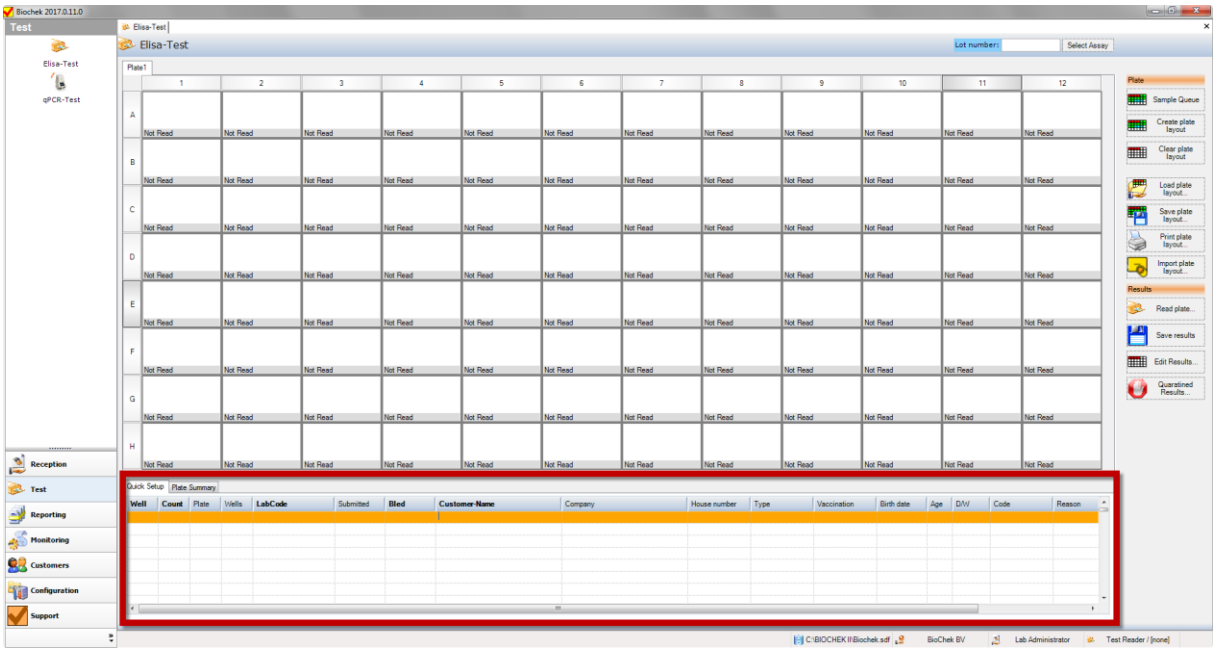
From here also the **Monitoring Programs** can be **printed** as well as **Sample Submission Forms.**



Quick Setup – create plate layouts in BioChek's Quick setup – spreadsheet

The 2018 version of BioChek II software allows users to setup a plate layout using the spreadsheet below the plate layout grid.

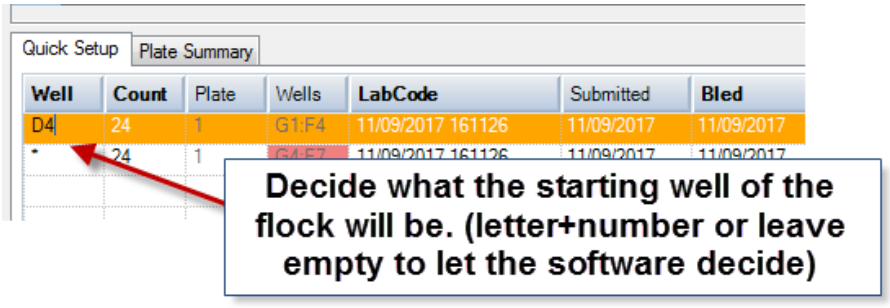
1. Go to **Test > Elisa-Test** and put the indicator one of the cells of the first row.



2. The moment you start typing the software will first ask to Select the Assay. After the assay is selected the technician can start filling all flock information.
3. You can navigate through the columns and rows in a similar way as it is done in Excel. Some key actions:

TAB or right arrow	Move right
Left arrow	Move left
Upward arrow	Move upwards (previous flock)
ENTER or downward arrow	Move to next row (next flock)
CTRL+C	Copy value (1 well at the time)
CTRL+V	Paste value (1 well at the time)
CTRL+X	Cut value (1 well at the time)
SHIFT+ENTER	Duplicate whole row

4. Choose the starting well of the flock by specifying the location of the well in the first column of the spreadsheet named "**Well**" (**letter** for the row followed by a **number** for the column). To use the first available well the field can be left **empty**. The software will automatically fill the well with an asterisk (*) and choose the first available well on the plate layout.



NOTE: one can only use the Quick Setup during the initial create plate layout step. After clicking **Saving plate layout**, or **Saving results** or when **Editing Results**, the user can only use the classical to make modifications to the plate layout.

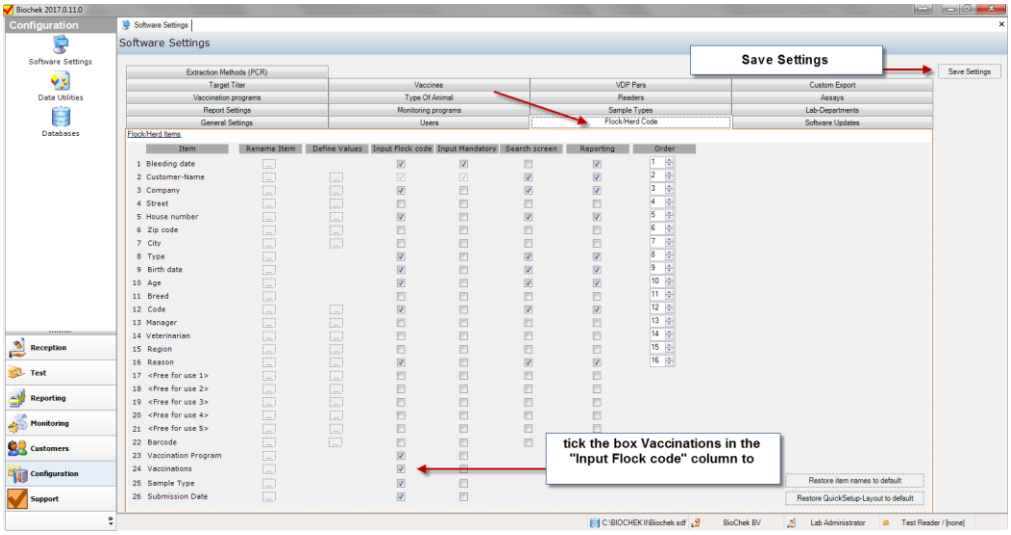
Add Last Vaccination when creating the plate layout

In the previous versions of BioChek Software it was already possible to add complete vaccination programs. Now it is also possible to add single (Last) vaccinations while creating the plate layout.

Setup of Last Vaccination

To add vaccines to the BioChek II Software:

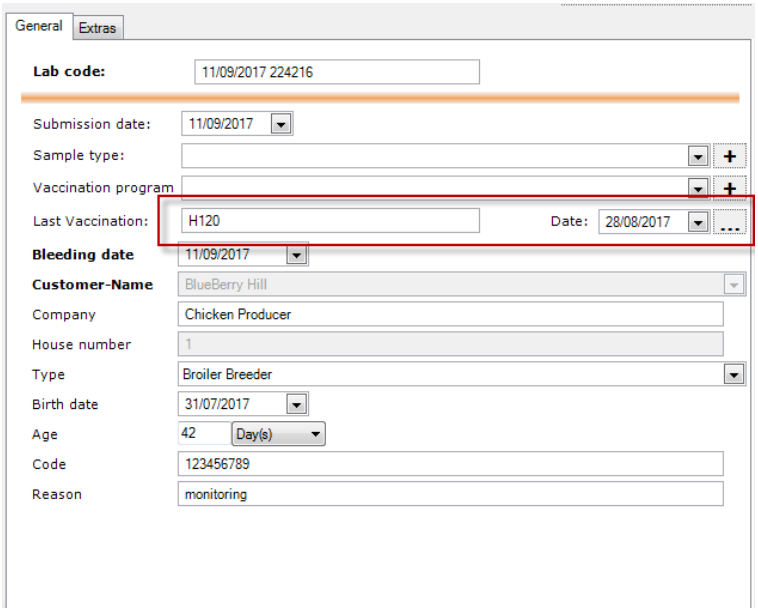
1. Create Vaccines in BioChek II software by either:
    a. Downloading the predefined vaccines via **Configurations > Software Settings > Software Updates > Update Vaccines**.
    b. Manually creating new vaccines (see section Add Vaccine in BioChek II Software manual)
2. Activate the flock code **Last Vaccination** in **Configuration > Software Settings > Flock/Herd Codes**



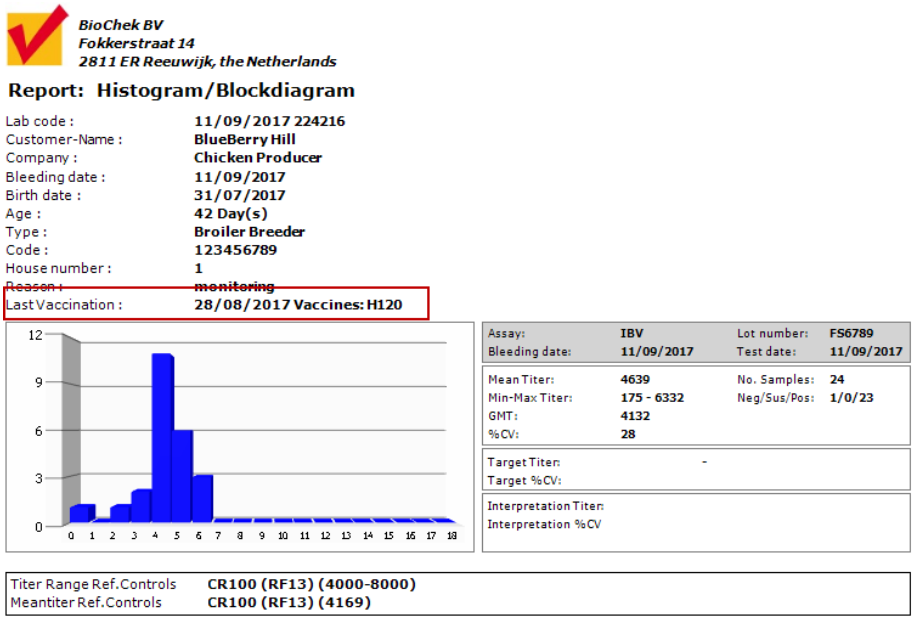
Use Last Vaccination when creating the plate layout

1. Go to **Test > Elisa-Test (or qPCR-Test)** and click **Create Plate Layout**.
2. Move the mouse over the field **Last Vaccinations** and a drop-down menu appears with all available vaccines for the selected disease.

3. Select the Vaccines of interest.
4. Optional: enter the vaccination date or age
    a. To switch from date to age and vice versa, click on the ... button.



5. Fill in the rest of the flock/herd information and click **Fill**.
6. When the Combined report is generated, the code Last Vaccination will appear in the list of flock codes



Import Plate layout into BioChek II Software from LIMS (.XML).

Setup Import plate layout

With BioChek II Software version 2018 it is possible to import plate layouts created in laboratory information management systems (LIMS).

The plate layout should be presented as .XML file, which can be created by designing an export tool in LIMS. This .XML file should follow a certain structure, described in the .XSD file here: https://server.biochekonline.com/Tools/examples/import.xsd.

An example of a valid .XML file can be found here: https://server.biochekonline.com/Tools/examples/example.xml

Verify the correctness of the export tool by uploading the .XML file here: https://server.biochekonline.com/Tools/ImportValidator.aspx

The information required to get across from LIMS to BioChek is mentioned below.

Plate codes	Description	Mandatory	criteria
Description	Name of plate layout	Yes	Max 50 char
Assay	Abbreviation from Assays list in BCII	Yes	From list
Fill direction	Fill direction on the plate (HORIZONTAL or VERTICAL)	Yes	HORIZONTAL or VERTICAL
Controls	NEGATIVE and POSITIVE (specify location on the plate, per well)	Yes	
Refcontrols	Ref controls used must match the abbreviation of ref control list in BCII (per assay) (specify location on the plate, per well)	NO	From list

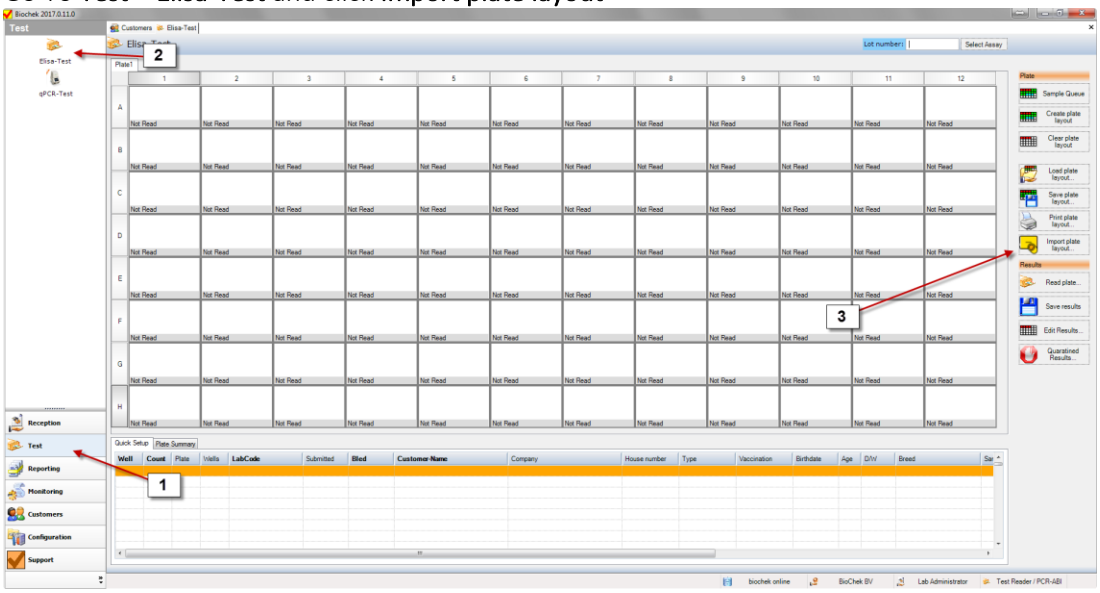
Flockscodes	Description	Mandatory	criteria
Labcode	Any code	Yes	Max 50 char
CustomerID	CODE created in LIMS	Yes	Max 50 char
Vaccine	Name from list Vaccine in the BioChek II Software	NO	Max 50 char
Vaccination program	Use CODE of the vaccination program from list BCII software	No	Max 50 char
Sample type	Use CODE of the vaccination program from list BCII software	No	Max 50 char
Submission date	DD/MM/YYYY or MM/DD/YYYY (see Windows Settings)	No	
Bleeding date (Flockcode 1)	DD/MM/YYYY or MM/DD/YYYY (see Windows Settings)	No	
Customer name (Flockcode 2)	DD/MM/YYYY or MM/DD/YYYY (see Windows Settings)	Yes	Max 50 char
TypeofChicken	Use CODE of Type of animal from list BCII software		From list
Breed	Name from Breed list in BioChek II Software		From list
Other codes	See Software Settings > Flock/Herdcode to check which code is use in which field	No	Max 50 char

*Check **BioChek II Software > Configuration > Software Settings > Flock/herd codes** which codes have been activated for Input in the plate layout (see below).*

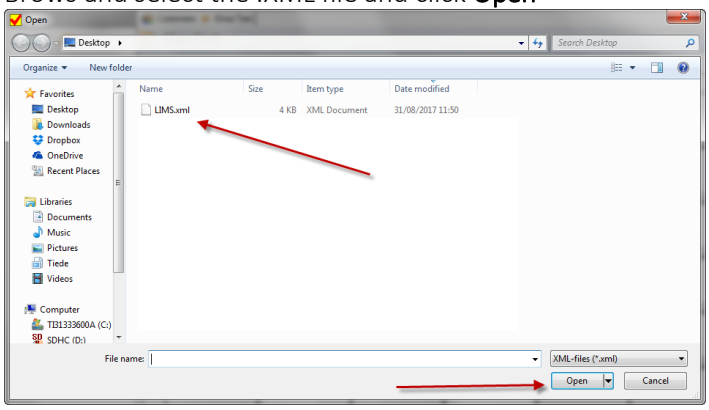
BioChek 2018 software (new install or updates from previous versions) can be downloaded here: https://server.biochekonline.com/tools/downloads/SetupBiochek2018.exe

How to import plate layouts

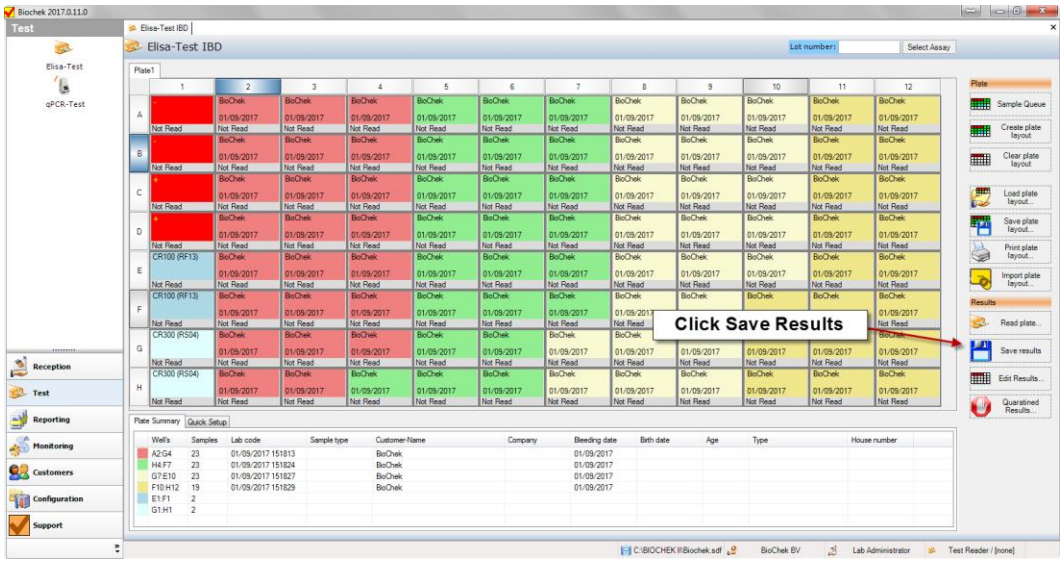
Go To **Test** > **Elisa-Test** and click **Import plate layout**



Brows and select the .XML file and click **Open**



The import file will be validated and if all criteria were passed the plate layout appears and the test can be performed.

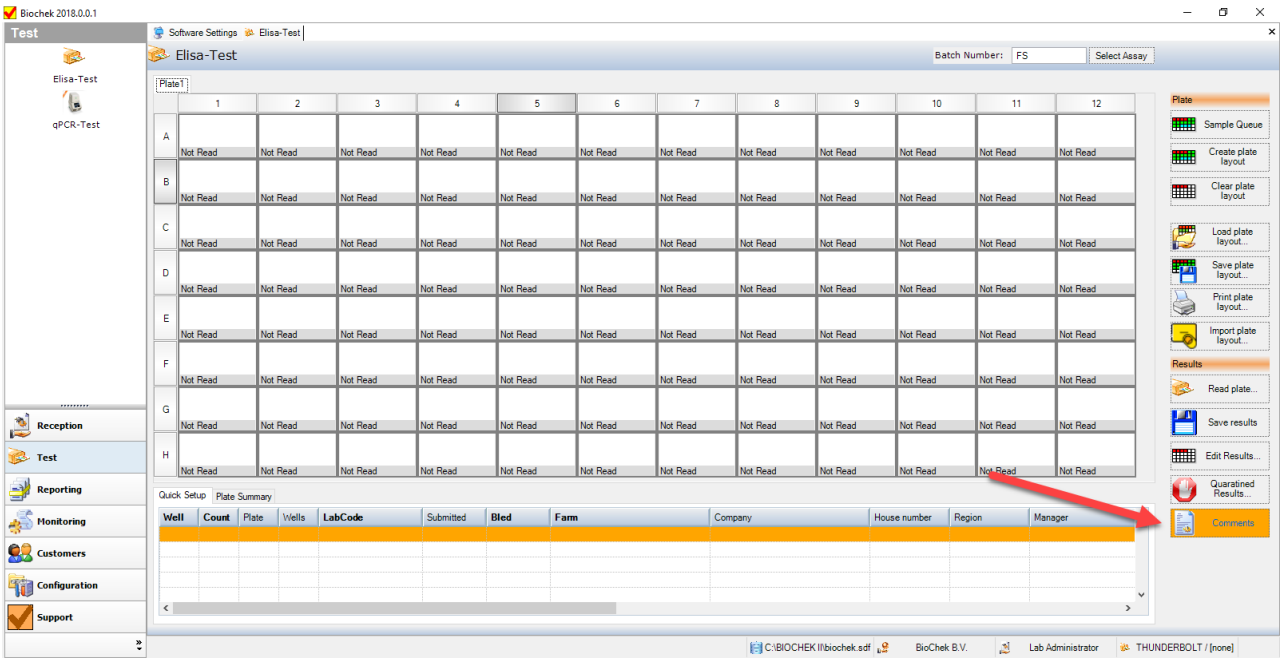


Add comments to the plate layout

Now it is possible to add a comment to your plate layout.

Go to Test > Elisa-Test and create your plate layout. Then, you can click on COMMENTS and add text that will be stored with the plate layout.

One can retrieve the information via Edit Results. In case comments are added to the plate layout, the COMMENTS button will turn orange.


Biochek 2018.0.0.1
Test
Elisa-Test
qPCR-Test
Reception
Test
Reporting
Monitoring
Customers
Configuration
Support
Software Settings
Elisa-Test
Elisa-Test
Batch Number:
FS
Select Assay
Plate1
Not Read
Plate
Sample Queue
Create plate layout
Clear plate layout
Load plate layout...
Save plate layout...
Print plate layout...
Import plate layout...
Results
Read plate...
Save results
Edit Results...
Quarantined Results...
Comments
Quick Setup
Plate Summary
Well
Count
Plate
Wells
LabCode
Submitted
Bled
Farm
Company
House number
Region
Manager
C:\BIOCHEK II\biochek.sdf
BioChek B.V.
Lab Administrator
THUNDERBOLT / [none]

Data Management

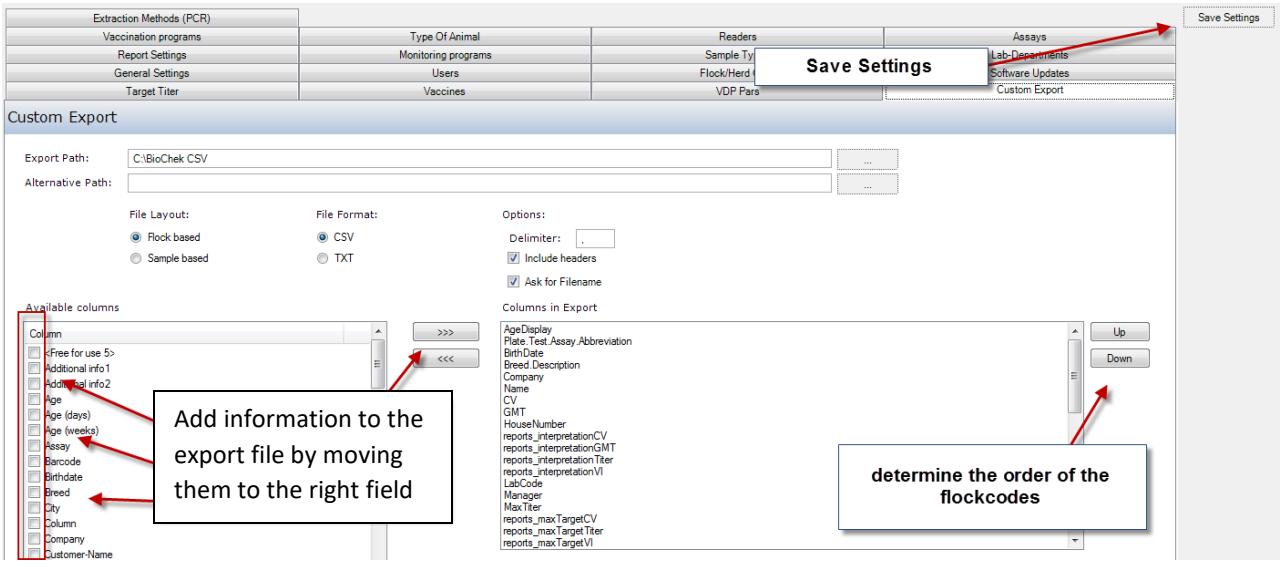
Custom export to LIMS (CSV file)

Raw data can be exported to laboratory information management systems (LIMS) by generating CSV (comma separated value) or text (TXT) files containing BioChek data.

Setup of Custom Export

First the Custom Export must be setup.

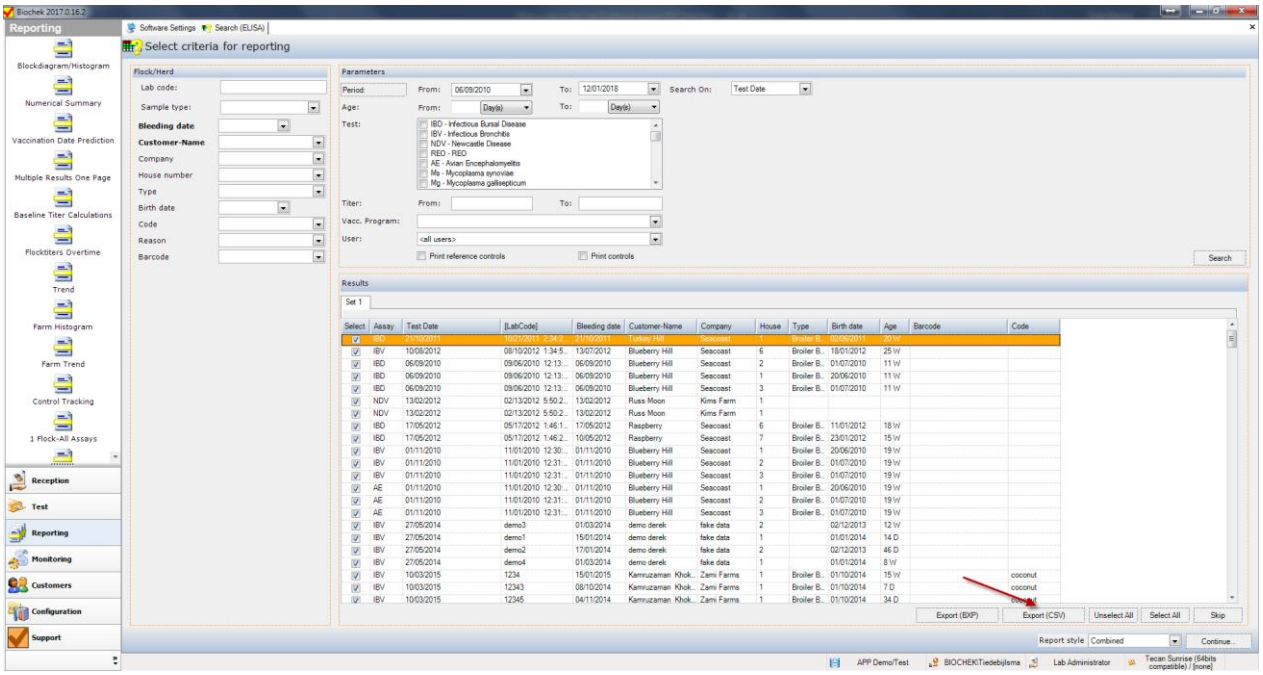
1. Go to **Configurations > Software Settings > Custom Export tab**.
2. Determine:
    a. the Export Path (location the file will be stored)
    b. flockbased or sample based data
    c. **CSV** or **TXT** format
    d. Demiliter (symbol that separates the values)
    e. Include headers (names of the flockcodes)
    f. Ask for a file name
        i. off: the file will get the default name (**biochekexport.csv/txt)**
        ii. on: for every export the user will be asked to give the file a name
    g. Decide which codes should be included in the export file
        i. Tick the box of the flock codes and click on the **>>>** button to move them to the right
    h. Determine the order of codes in the export file
        i. Select a code in the right window and move it **Up** or **Down**
    i. After all is setup, click **SAVE SETTINGS**



- Automatic export to an online database
- Automatic backup service of your server database

Use of Custom Export – Generate the export file

1. To generate the custom export file, go to **Reporting** and **Search** for the data.



2. Select the data and click on the button **Export (CSV).**. The file will be generated and is stored as BioChekexport.csv in the chosen folder.
3. In case the option “Ask for Filename” is ticked, a dialog appears so the user can put in the name of choice.

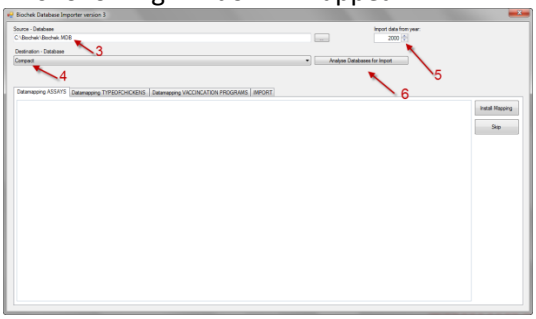
Import data from BioChek 2010 into BioChek II software version 2018

The BioChek Database importer software allows you to import data from old BioChek software (version 2010) into the new BioChek II Software. It is done in the following way.

- *In case there is already data in the new database, make a backup by copying the BIOCHEK II folder.*
- *After importing, do not use the old software anymore. If you do and new data must be imported into the new database, the whole old database must be imported again.*
- *Depending on the database size and the performance of the computer, the import can take from a few minutes up to several hours.*

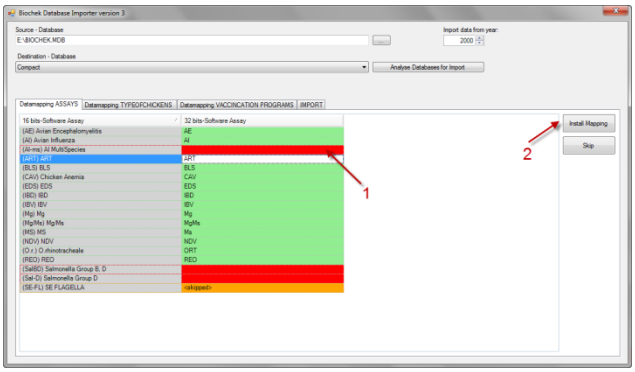
1. *Copy the old database (BIOCHEK.MDB) to C:\BIOCHEK*
2. *Start the importer software in the C:\BIOCHEK II folder by double clicking on Biochekimporter.exe*

This following window will appear.



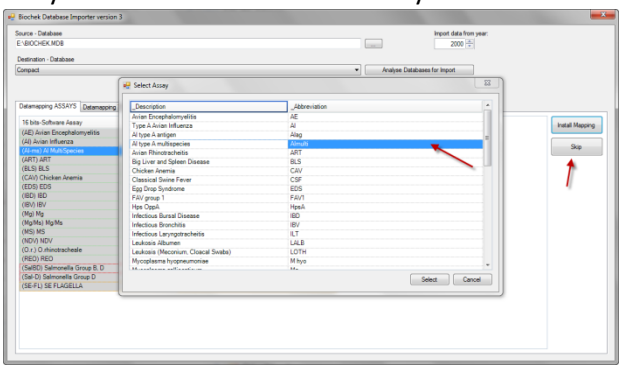
3. Select the location of the old database. (Default location is C:\BIOCHEK\BIOCHEK.MDB)
4. Enter the destination database. (most of the times Compact)
5. Select the year where to import from.
6. Press Analyze database for import.

This screen will appear:



Green fields are correct connections between the old and new databases.
Red are not. To correct this, select the red field (1) and click Install mapping (2) and select the corresponding assay.

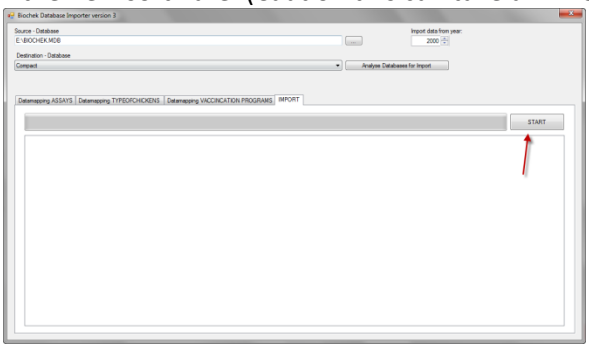
(Orange are assays that are not installed in the new database. If you want to import these assays too you must create them manually in the new software before importing the old database).



Do this for all red fields.
If you don't want to import a field press skip.

7. Now check for the correct connections in the datamapping TYPEOFCHICKEN and datamapping VACCINATION PROGRAMS and change when the connections are red.

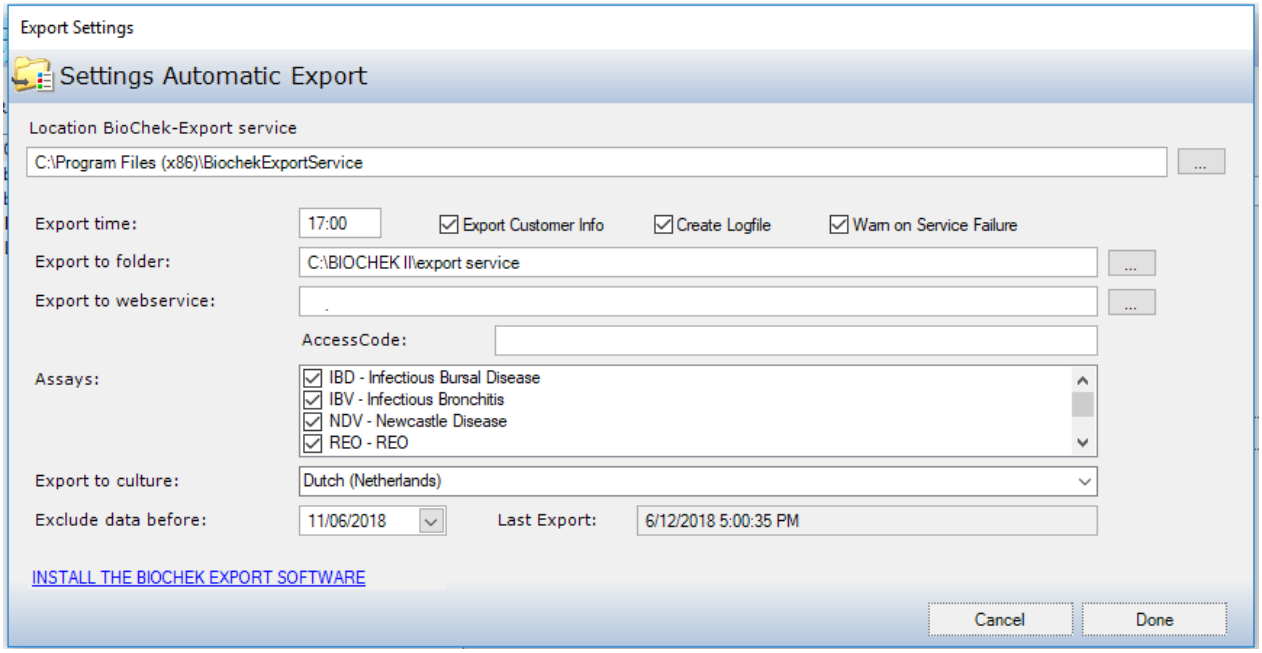
8. If everything is selected correctly go to import and press start. The old database will be imported in the new software. (Caution this can take a while and uses a lot of computer capacity)



Automatic export to an online database or location on the computer/server

With the 2018 version of BioChek one could schedule a fully automatic export service to an BioChek online database. This allows you to work locally (Compact database) but transfer your data to the online database and access the data any time anywhere. One can decide which assays are exported.

1. Go to Configuration > Database.
2. Select the database on which you want to set the Automatic export on (only local or server database).
3. Then, click **Automatic Export**. Download the Automatic Export Service by clicking on the link (or go to https://server.biochekonline.com/tools/downloads/)
4. Install the export service in the location you desire (on PC or server). Remember the location!
5. Setup the Export service by clicking on Automatic Export Service and the following dialog will open

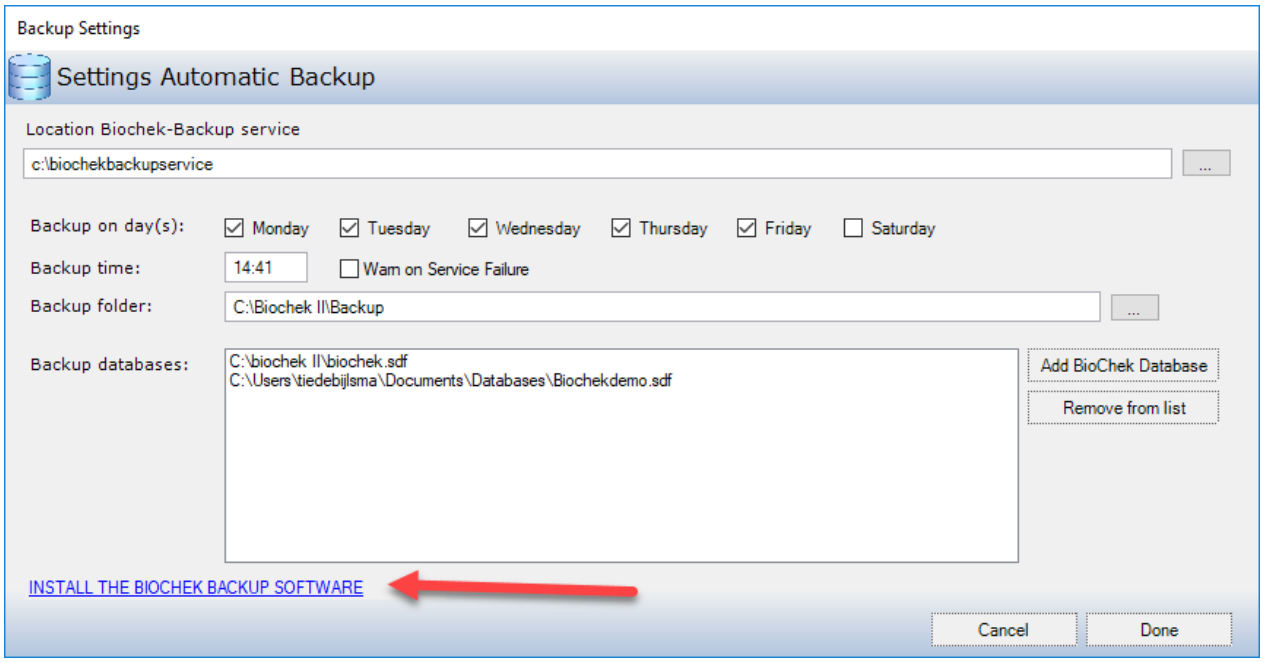


6. **Location BioChek-Export service:** Define the location where the export service is installed.
7. **Export time:** Define at what time the service will run.
    a. NOTE: when the service is installed on a PC and not on the server, make sure that the export is scheduled during office hours. In case the service was not able to run because the computer was already turned off, it will run with the next scheduled period and export all data since the last successful export. This means that no data will be missed if the service didn't run.
8. **Export Customer info:** Choose if you want to add the registered Customer info to export file (recommended in most of the occasions).
9. **Create Logfile:** Define if you would like to create a log of the export service (recommended)
10. **Warn on Service Failure:** Define if you want to receive a message if the service didn't run as it should (recommended)
11. **Export to folder:** define location where to store the export files
12. **Export to webservice:** here you have fill the URL of your online database to directly import into the online database. Ask your BioChek representative for this URL
13. **Accesscode:** encryption required to access the database. Ask your BioChek representative for this URL.
14.

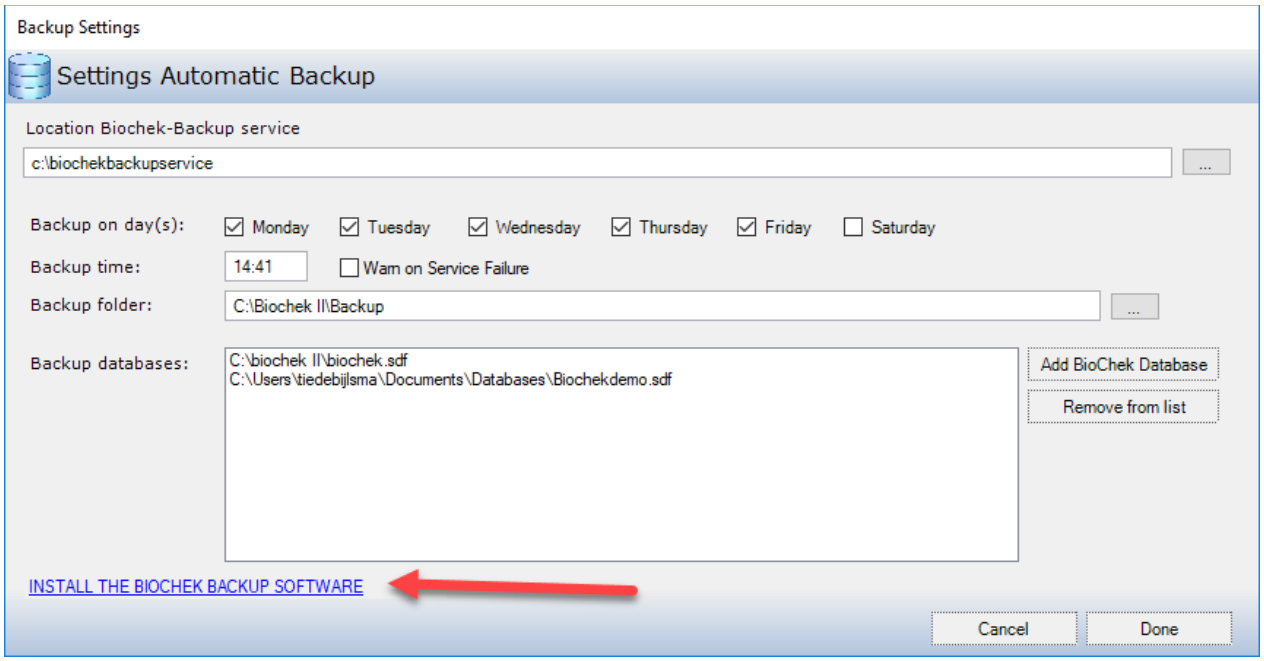
Automatic backup service of your server database

Go to Configuration > Databases > click Automatic Backup Settings

1. Download the automatic backup software by clicking on the link



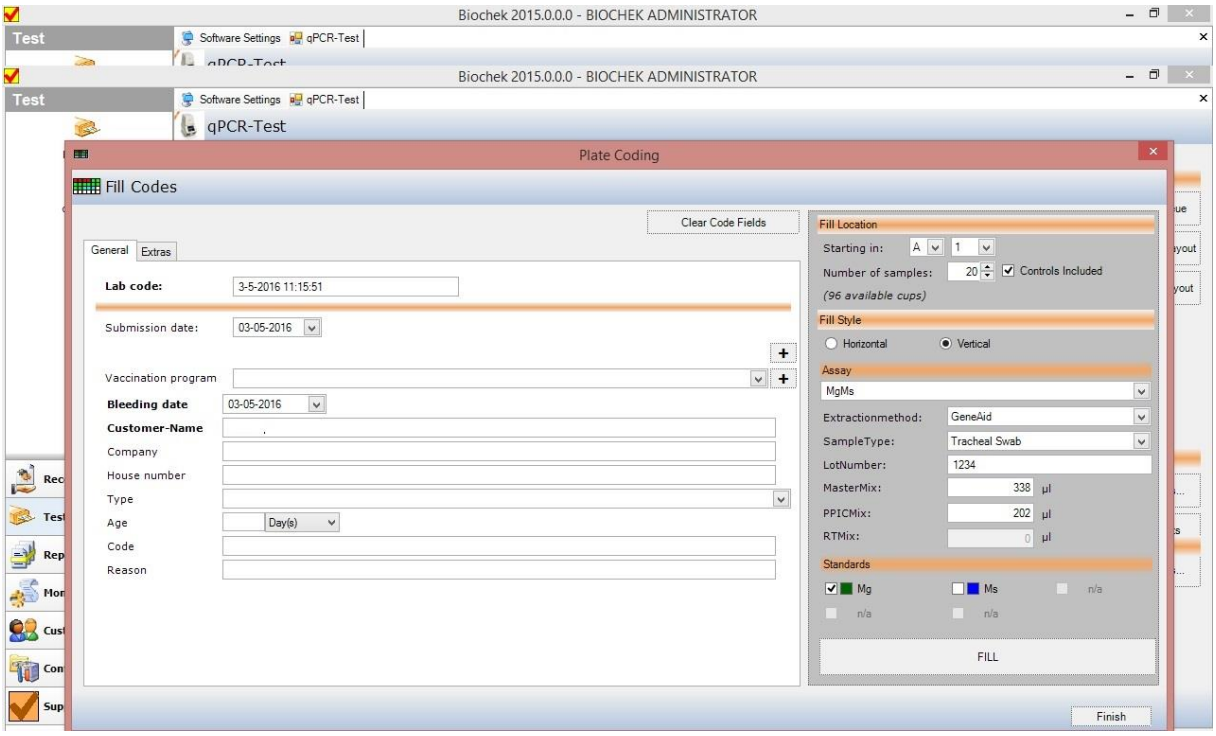
2. Follow the installation wizard and install the BioChek backup service.
3. Add a database by clicking **Add BioChek Databases**
4. Define the backup settings (day's, time, backup location)
5. Click Done to finish.



PCR

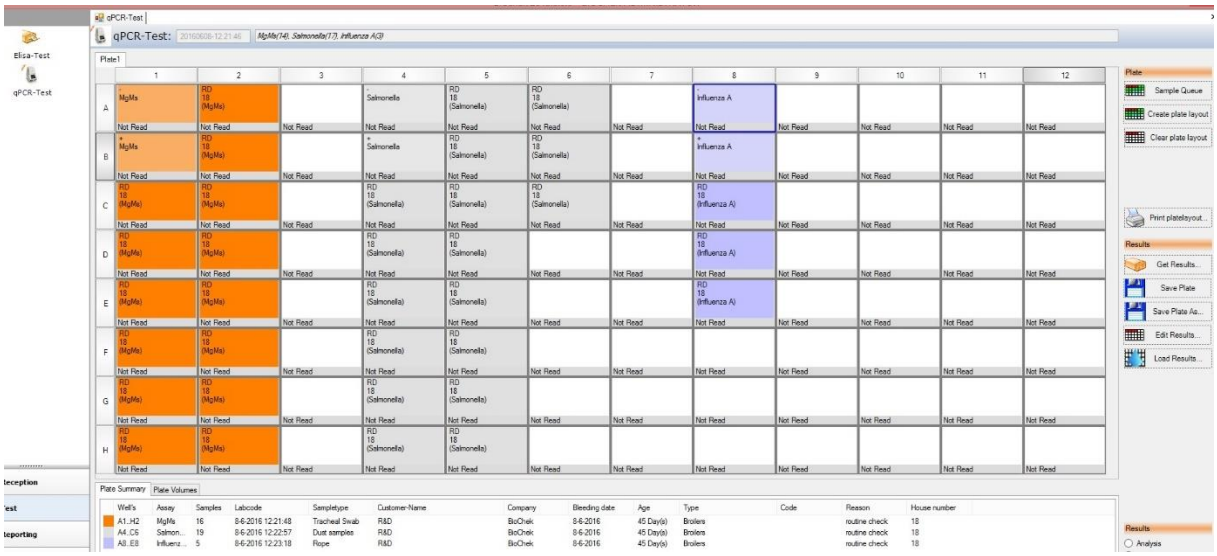
PCR Test – design a plate lay-out

1. Go to **Test > qPCR-test**
2. **Create plate lay-out** or double click on the first empty well. The following screen will appear: The example has been filled in partially

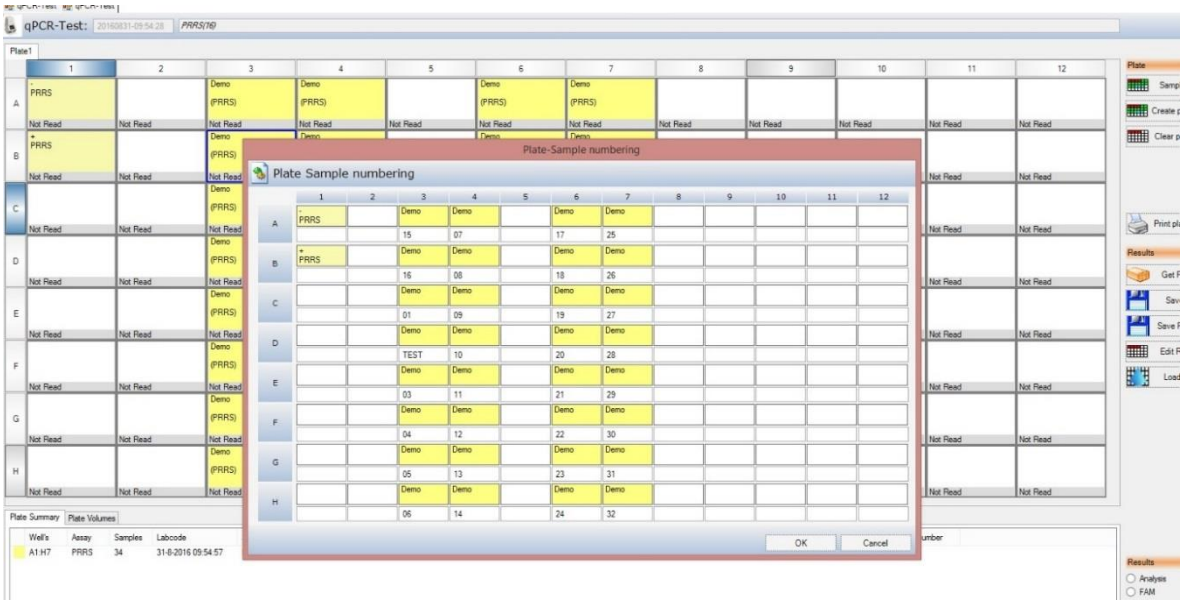


3. Select a starting well for the assay in the section “Fill Location”
4. Select the number of samples with or without controls in the section “Fill Location”
5. Select vertical or horizontal filling of the plate in the section “Fill Style”
6. Select a qPCR assay in the section “Assay”
   - 6.1 The pre-defined Extraction method is displayed, this can be changed
   - 6.2 Select a pre-defined sample type – Sample types can be added
   - 6.3 Assign a lot number to the assay – For kits previously used a window will appear and ask to use the current lot number
   - 6.4 For quantitative analysis, select the standards for the target you wish to quantify.
   - 6.5 Standards are required to be done at least once per lot number per kit for quantification. If standards have been used for the current lot, it is indicated by a statement below the ‘Standards Required’ section
7. Assign customer information and flock/herd information to the samples in the section “General”
8. Select “**FILL”**
9. If required, add additional qPCR assays to the plate using the instructions above

10. If the plate is completed select “**FINISH**”: Please see below an example of a plate layout. For this example, the following assays on the plate below are: MgMs, Salmonella and infA

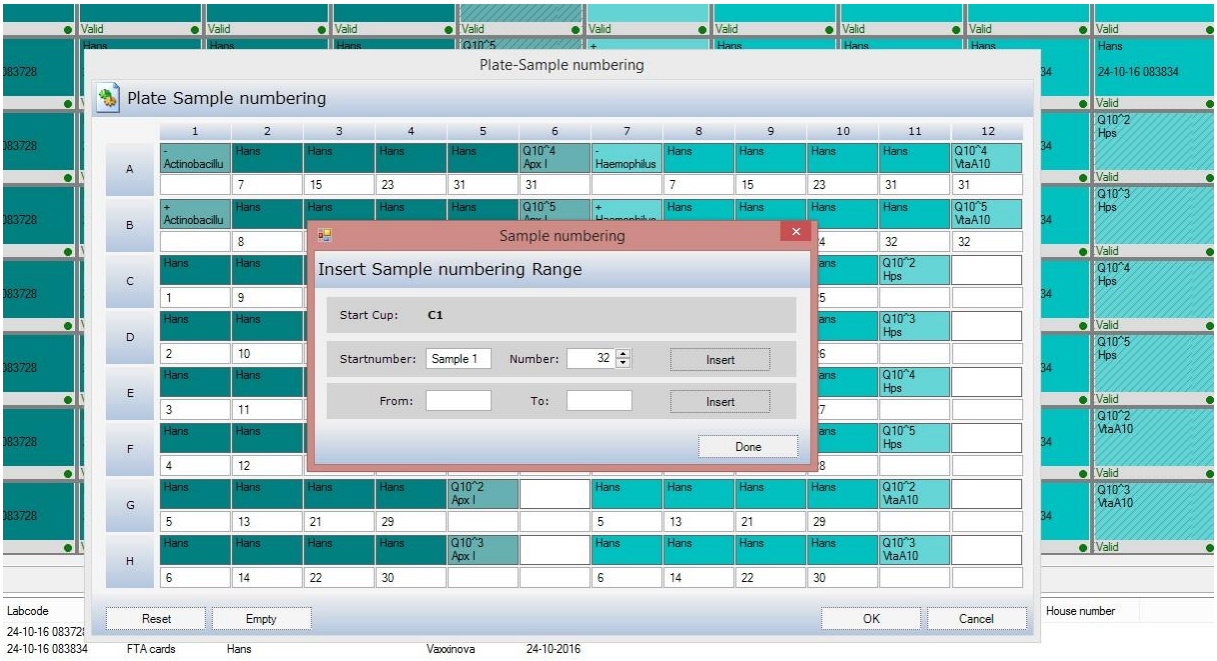


11. Wells can be copied, moved or deleted on the plate:
    11.1. Copying a well: select the desired well and then right click with the mouse button to access the well options. Select “copy”, paste the desired well in an available empty well.
    11.2. Moving a well: select a vertical row or individual well and click and drag it to its new empty location. Multiple wells can be selected by holding the shift key while selecting the wells.
    11.3. Deleting a well: select the well and right click the mouse button to access the well options. Select “delete cup”
12. It is possible to assign individual numbers or descriptions to wells. Select a well and right click on it. Select “sample numbering” and the following screen will appear



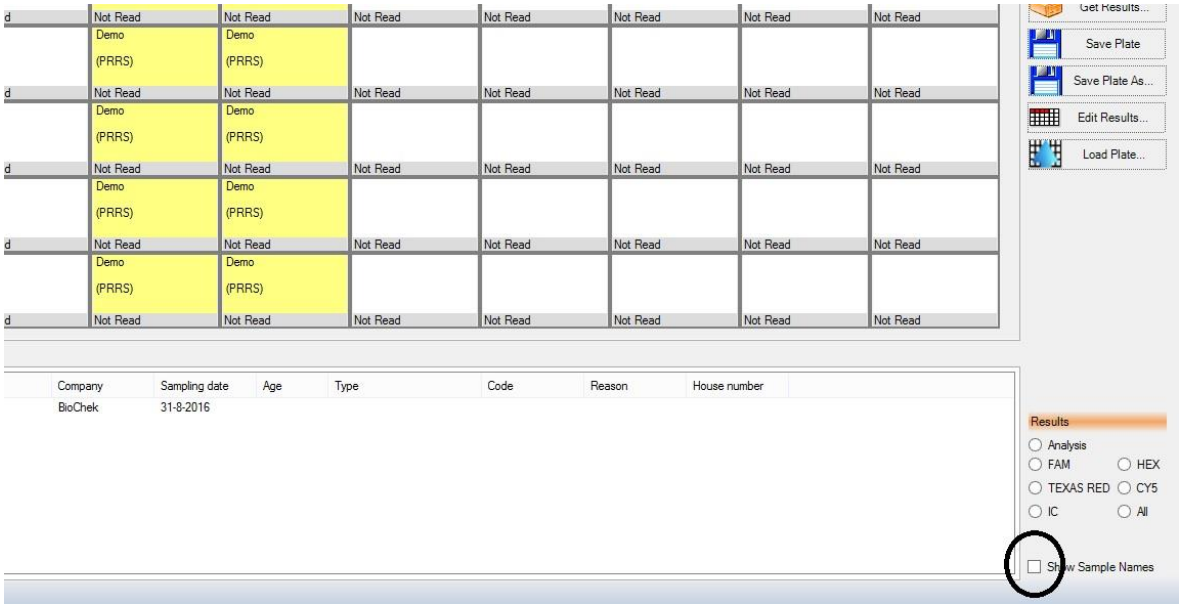
12.1 The white boxes can be filled in with details to assign a number or a short description to a PCR well. This number or short description will be on the report.

12.2 It is also possible to let the software automatically number your samples with a preferred prefix such as “sample” or “test”. For this, right click in the starting well in the plate sample numbering screen, then click “add range”. The screen below will appear.



12.3 Assign a start number, for example “sample 1” and define the amount of samples you want numbered. Then click “insert” and the full range of samples will be numbered with your desired prefix. Click “done” and then “ok”.

12.4 To make the sample numbers or descriptions visible on screen, tick the ‘Show Sample Names’ box as shown below. If the numbers or descriptions are visible, it can be printed (see 14 &15) and used as a visual aid to help to load the plate.



14. Select tab “plate volumes” for the calculated reaction volumes.
15. **Print plate layout** and then “Save plate”. The plate can be given a custom name prior to saving.

PCR Test – running the assay

1. Take the print out to room 1 and prepare the qPCR reagents to the specifications found on the print out.
2. Use the print out in Room 2 to load the plate with the selected samples.
3. Place the sealed plate in the cycler and run either the BioChek DNA protocol or the BioChek RNA protocol on the cycler.

Analysing amplification curves and exporting data to BioChek software

1. After the run has finished, the data must be analyzed in the cycler software with the correct analysis settings. These settings can be different for different assays.
2. After analyzing the amplification curves with the right settings, the data can be exported for use in the BioChek software.

2.1 For ABI 7500 users with SDS software version 2.06 or higher:

a) Click on “export”

b) Go to Export properties, follow the guidelines below
   - Only select “results”
   - Select “one file”
   - Assign a name to the export file, file type needs to be “.txt”
   - Do not select the option to open a file when export is complete.

2.2 For Bio-Rad CFX users with Bio-Rad software CFX Manager 3.1 or higher:

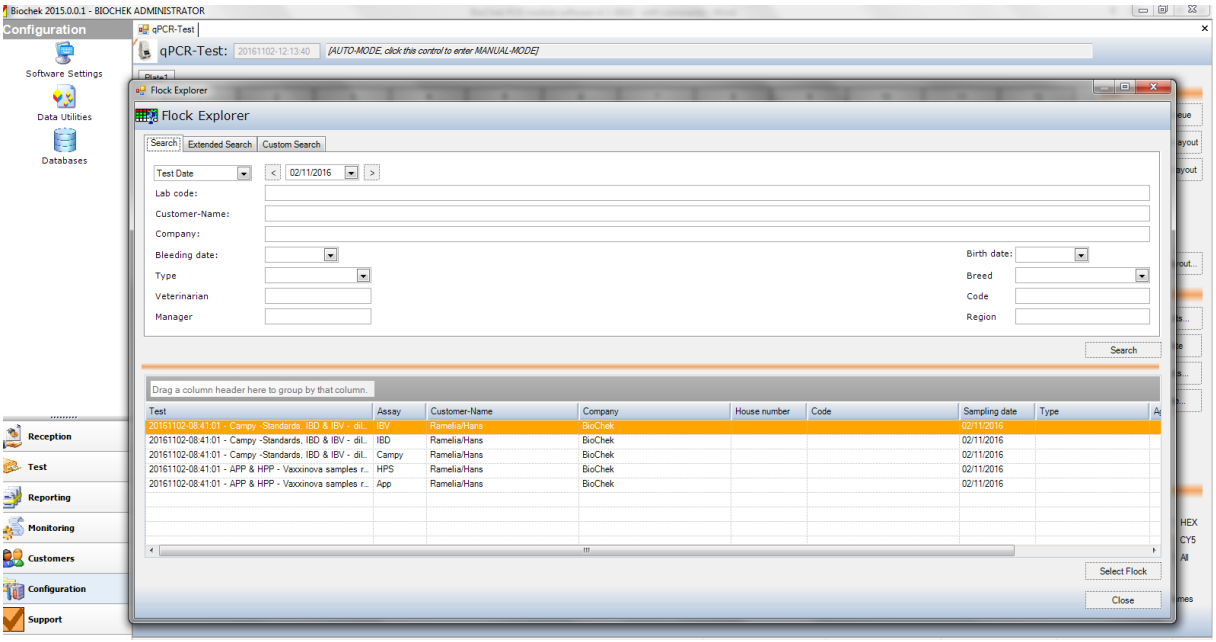
a) In the “Data Analysis” screen select “export”
b) Select “custom export”
c) Export format must be “Text (*.txt)”
d) Column separator must be “Comma”
e) In the box “sample description” select the following items
   - Well
   - Fluorophore
   - Sample name
f) In the box “Quantification” select the following item
   - Cq
g) Click on “export”
h) Select a target directory for the file and give the file a name “x”
i) Click on “save”

2.3 For Agilent users with MXPro software or higher:

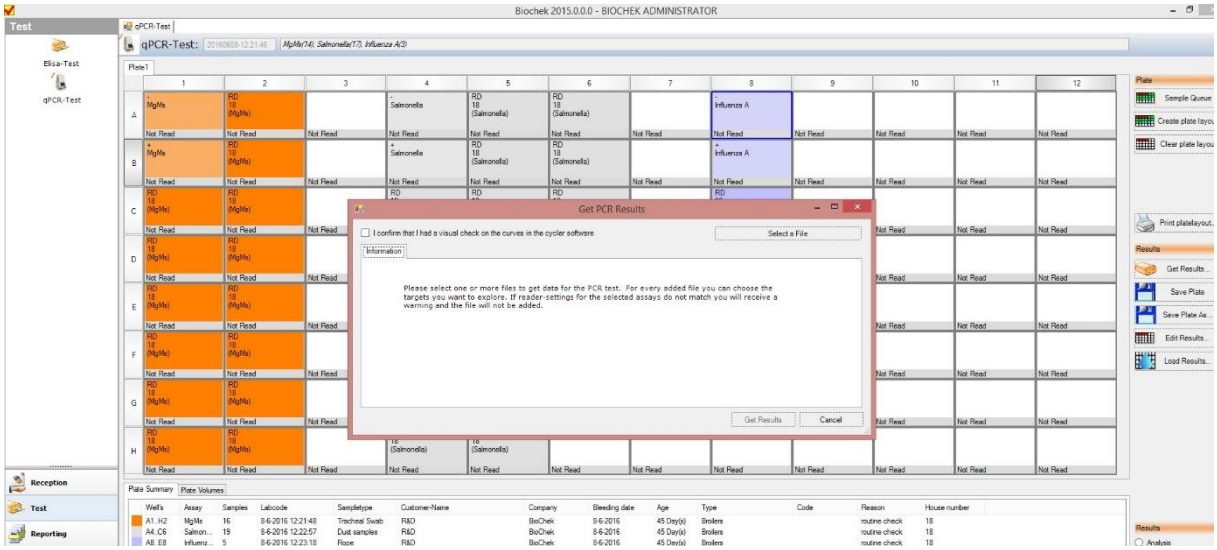
a) Select all wells on the plate
b) Under “Analysis”, select “Results” tab
c) Select “Text report” under area to analyze
d) Under “column” select the following items:
   - Well
   - Dye
   - Cq
e) Click on File and select “Export Text Report” - “Export Text Report to Text File”
f) Click on “save”

Assay analysis with BioChek PCR software

1. Open the BioChek Software and login.
2. Go to “**Test**”
3. Select “**qPCR-Test**”
4. Select “**Load plate**”
5. Enter the desired criteria to find the Assay for analysis (test date, Company etc.). See below for an example.

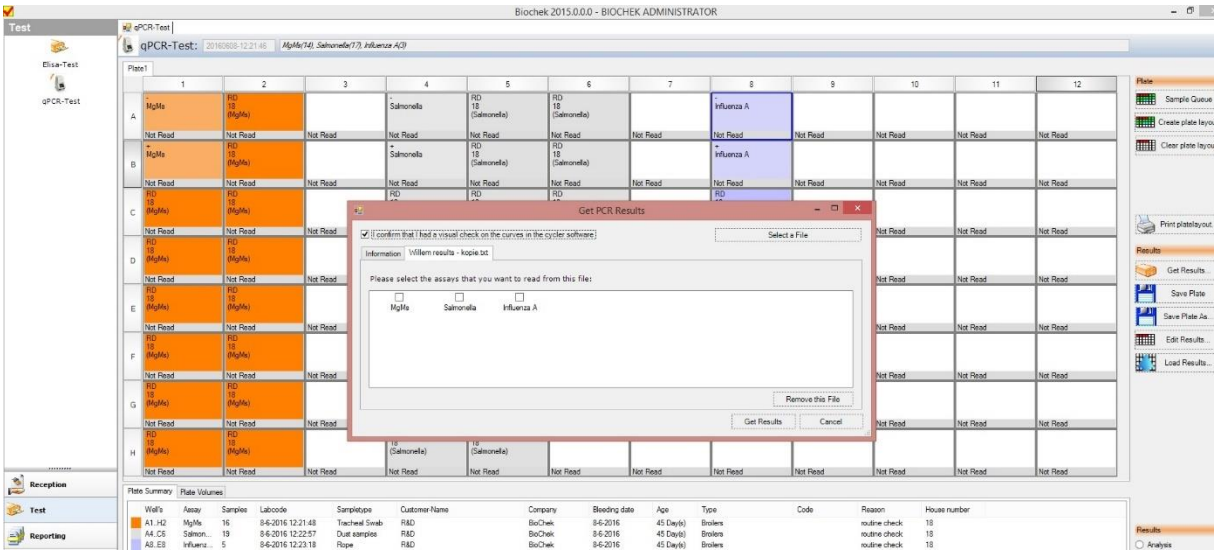


6. Select the desired Test and click "**Select Flock**"
7. Select "**Get Results**" and the following screen should appear:

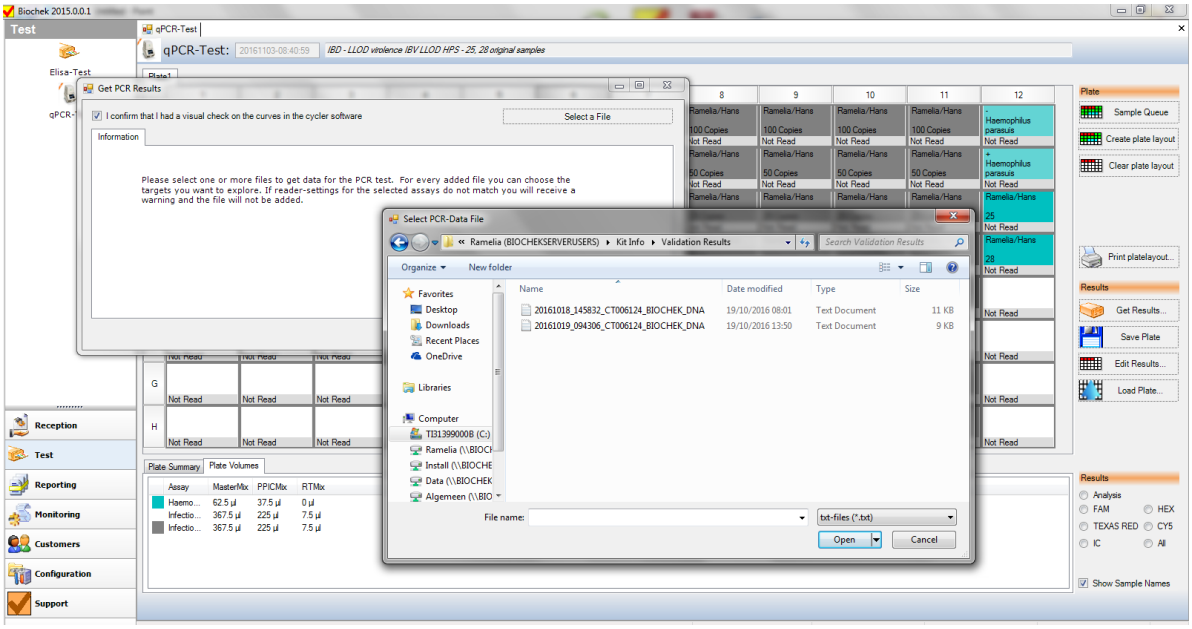


8. Before file can be imported the technician must confirm that the amplification curves have been checked by checking the box "I confirm that I had a visual check on the curves in the cycler software." Any deviations can be edited after importing the results.

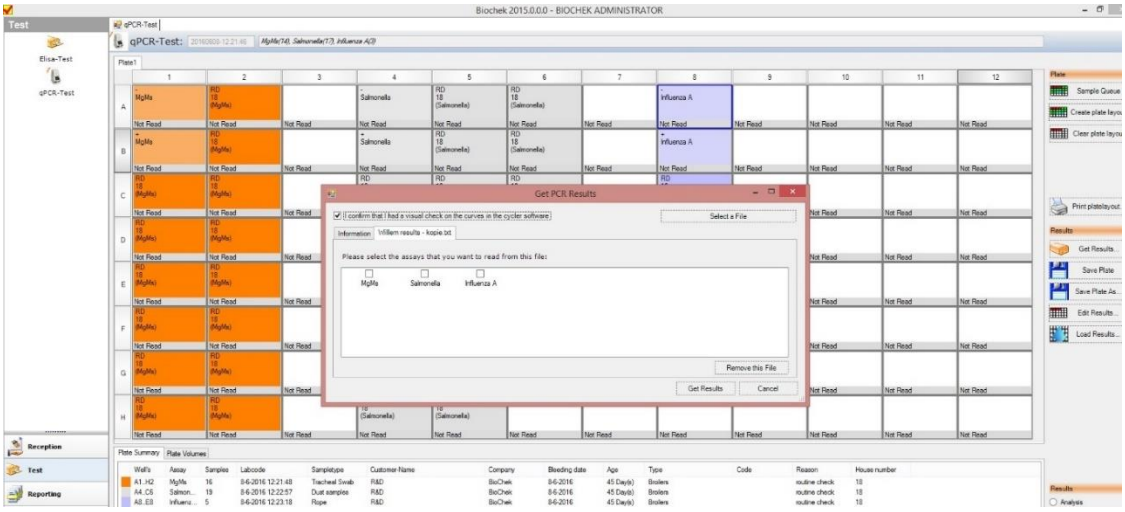
9. Choose “**Select a File**”



10. Browse for the desired file and open it. The following screen should appear:



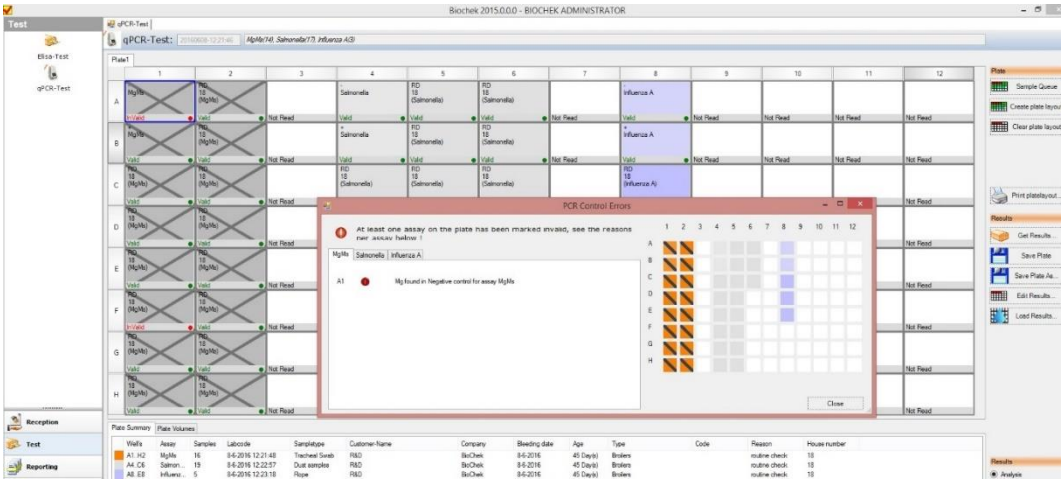
11. Select the assay(s) for which the file must be used by checking the appropriate box. If a plate contains more than one assay (all BioChek assays can be used simultaneously), then assays which use the same analysis settings can be imported using one file. Multiple files will need to be used for multiple assays if the analysis settings are different.



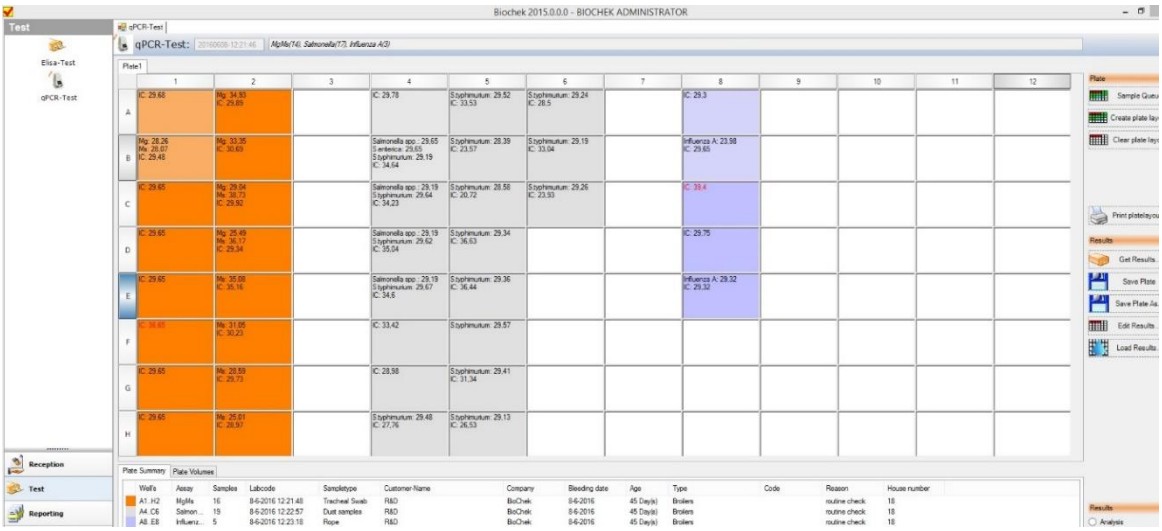
12. Select "**Get Results**"

12.1 The BioChek software will analyze the positive and negative controls and determine if the assay(s) is/are valid. If the assay is valid, all samples for that assay are checked by the BioChek software for inhibition, validity is determined by the Internal Control parameters.

12.2 If the assay is invalid due to a problem with either the negative control or the positive control, then a cross will appear for all wells in that assay on the plate lay-out. The software will explain why the assay is invalid. For the example, below the MgMs assay has been made invalid. See picture below for an example.



12.3 If a sample is inhibited, the well will be designated “invalid” with a red orb on the well when the plate is being viewed in “Analysis” mode. This can be seen in wells F1 and C8.



13. The plate can be reviewed in a number of ways by selecting the desired option in the lower right side of the screen. The available options are:

13.1 Analysis: Displays technical review of the assays and the samples.

13.2 FAM: Displays all FAM results on the plate (Cq) in the wells.

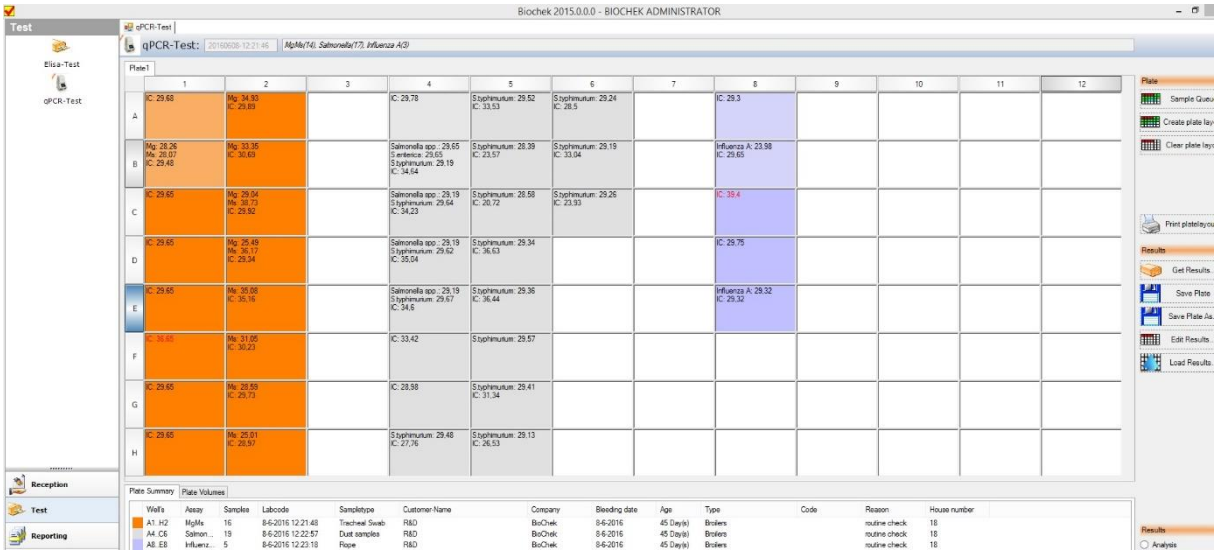
13.3 HEX: Displays all HEX results on the plate (Cq) in the wells.

13.4 TEXAS RED: Displays all TEXAS RED results on the plate (Cq) in the wells.

13.5 CY5: Displays all CY5 results on the plate (Cq) in the wells.

13.6 IC: Displays all Internal Control results on the plate (Cq) in the wells.

13.7 All: Displays all results on the plate (Cq) in an overview in the wells as seen in the example below.

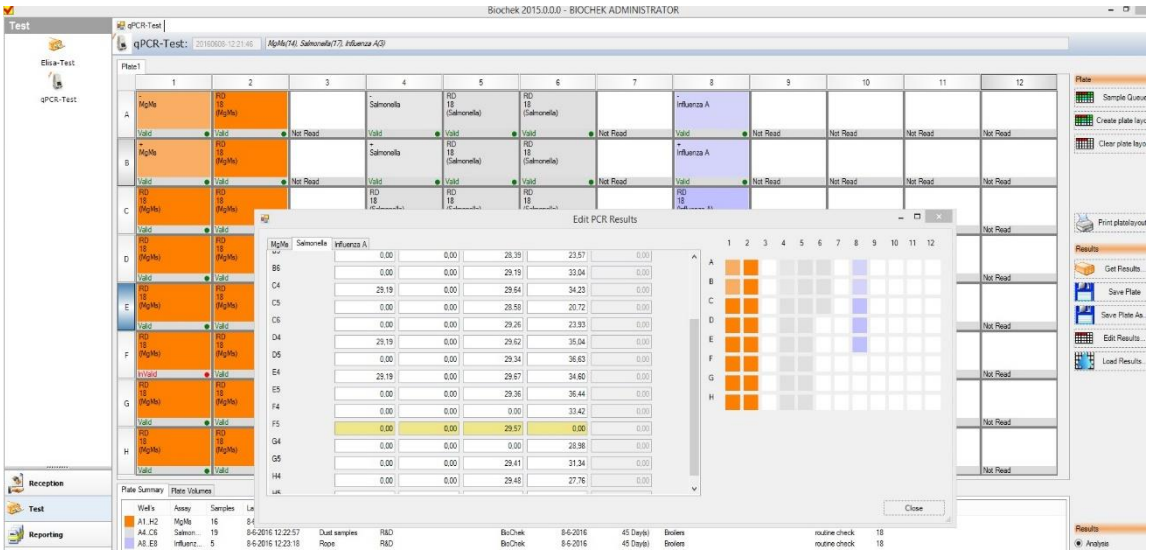


Editing PCR results

1. After importing the data from the cycler, the obtained Cq values can be changed if manual assessment of the amplification curves justifies this. Changing a Cq value for any target can be done in two ways:

   1.1 Make sure the software is in “Analysis” mode.

   a) Select the desired well on the plate by clicking it with the left mouse button
   b) Access the well options by clicking on the well with the right mouse button.
   c) Select “Edit PCR Results” the following screen will appear, in this screen the wells can be selected by clicking on the small plate in the editing screen or by scrolling though the list.



   d) Change the Cq value of the desired target and press the Tab key.
   e) Select “Close”

   1.2 Click on the button “Edit Results”

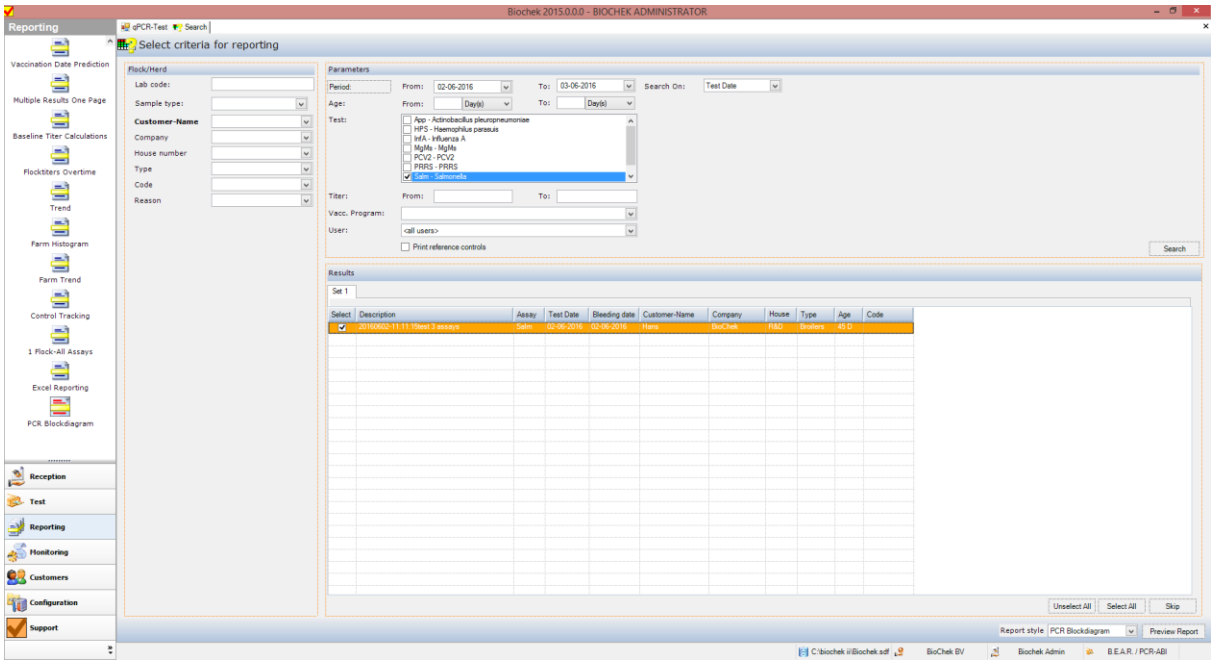
   a) Select the desired well as described above.
   b) Change the Cq value of the desired target and press the Tab key.
   c) Select “Close”

Saving PCR results

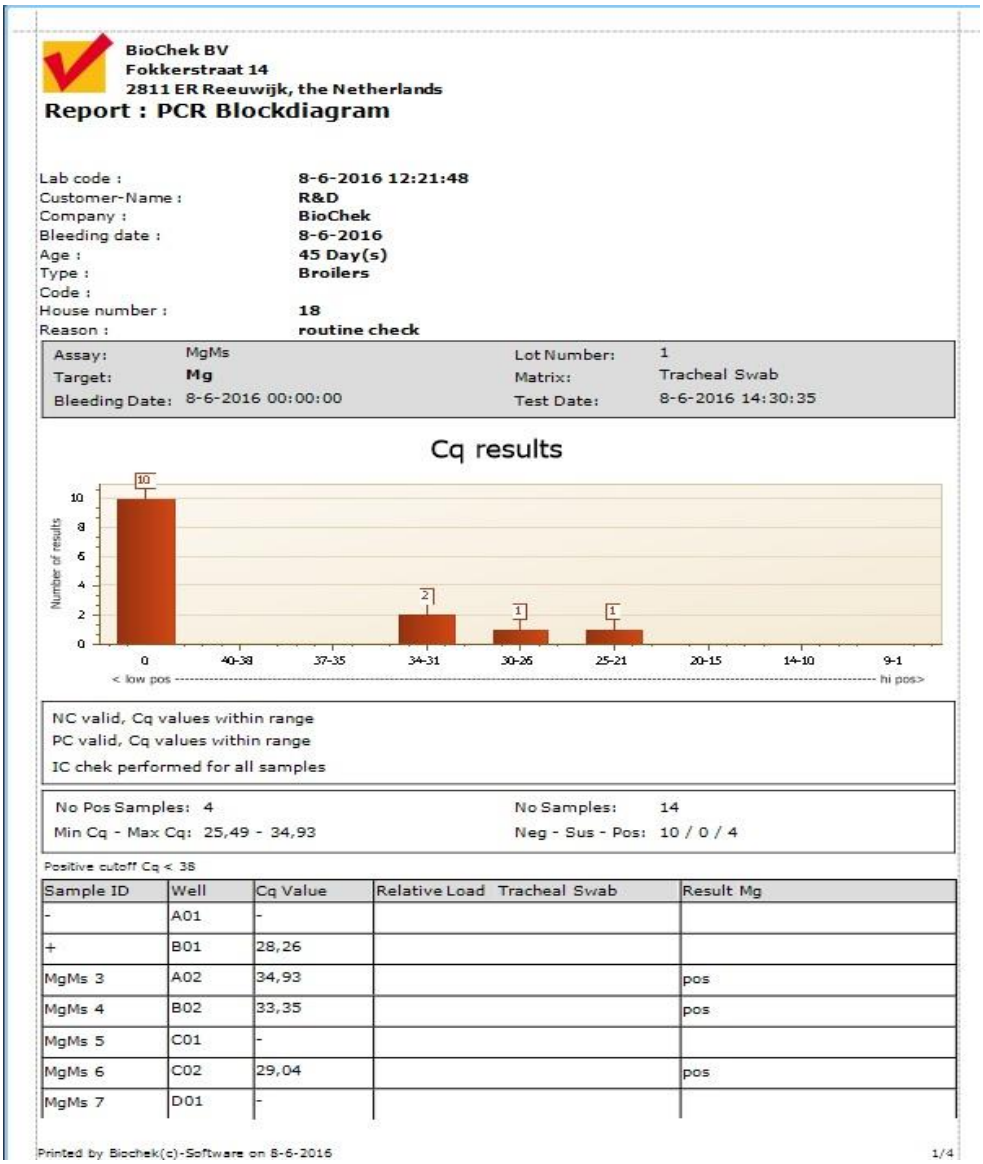
1. If all the data on the plate is correct, the plate with results can be saved.
2. To save plate, click “Save plate”
3. The name of the test plate can be changed prior to saving by clicking on the name and editing it. This will create a new file when saved.

Printing PCR report

1. In order to print a report click on “Reporting” option at the bottom left of the screen.
2. In the top left of the screen reporting options will be visible. For a PCR report look for red reports. Select the desired PCR report. The following screen will appear:



3. Select the test(s) you want to report by using the different search options (assay, period, user etc.) Multiple assays can be selected (all from 1 plate for example).
4. Click on “preview report” and the report will be generated. Please see below as an example. First page of the PCR report “block diagram” for MgMs results. If more than one target exist for an assay, then one report will be generated for each target individually.



BioChek BV
Fokkerstraat 14
2811 ER Reeuwijk, the Netherlands

Report : PCR Blockdiagram

Lab code :	**8-6-2016 12:21:48**
Customer-Name :	**R&D**
Company :	**BioChek**
Bleeding date :	**8-6-2016**
Age :	**45 Day(s)**
Type :	**Broilers**
Code :	
House number :	**18**
Reason :	**routine check**

Assay:	MgMs	Lot Number:	1
Target:	**Mg**	Matrix:	Tracheal Swab
Bleeding Date:	8-6-2016 00:00:00	Test Date:	8-6-2016 14:30:35

Cq results

NC valid, Cq values within range
PC valid, Cq values within range
IC chek performed for all samples

No Pos Samples:	4	No Samples:	14
Min Cq - Max Cq:	25,49 - 34,93	Neg - Sus - Pos:	10 / 0 / 4

Positive cutoff Cq < 38

Sample ID	Well	Cq Value	Relative Load Tracheal Swab	Result Mg
-	A01	-		
+	B01	28,26		
MgMs 3	A02	34,93		pos
MgMs 4	B02	33,35		pos
MgMs 5	C01	-		
MgMs 6	C02	29,04		pos
MgMs 7	D01	-		

Printed by Biochek(c)-Software on 8-6-2016 1/4

5. The report will display the following:
   - All the entered flock/herd data
   - Validity of the negative and the positive control.
   - Cq values for all targets in the assay individually
   - Spread of the Cq values in a histogram
   - Summary of relevant data (number of positives/negatives, number of samples)
   - Table with all samples in the flock/herd specified
   - Both quantitative and qualitative results if standards were recorded for the kit batch used - If **no standards were used** for the kit batch, the report will only display the qualitative results.
6. The report can be printed or exported (different formats include pdf, Excel etc.).