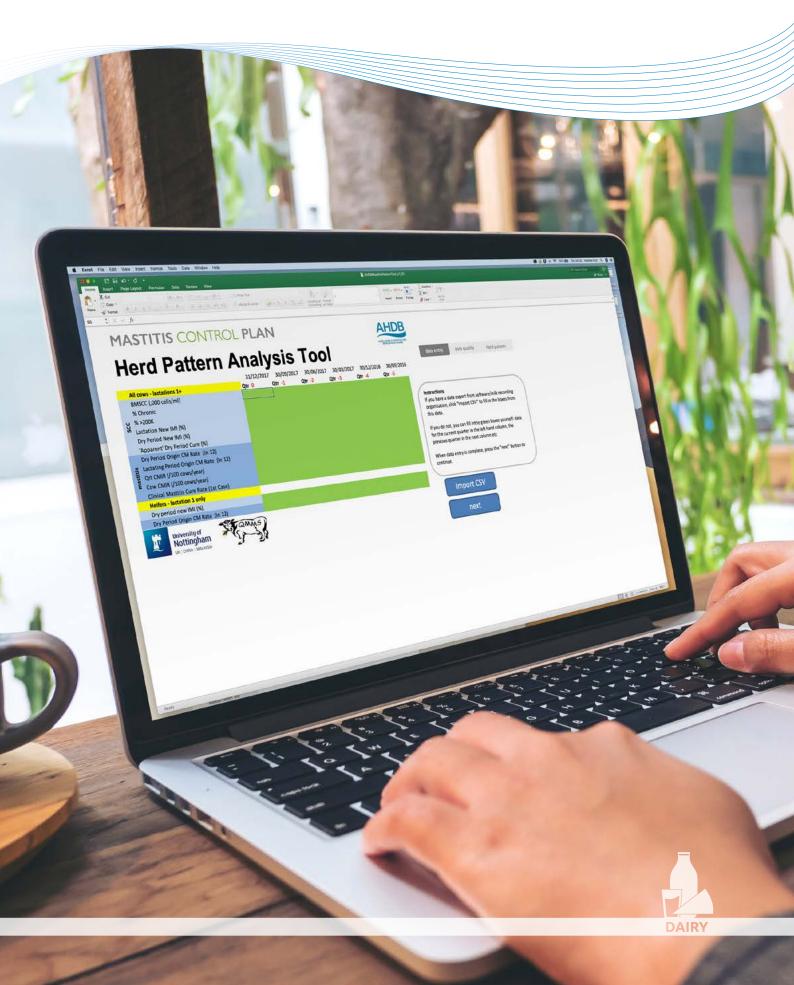


Mastitis Pattern Tool



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For further information contact dmcp@qmms.co.uk

How to use the Mastitis Pattern Analysis (MPAT) tool

- 1. Download the tool from dairy.ahdb.org.uk/mastitis-pattern-tool
- **2.** Data needs to be in the correct layout and, for automatic import, in .CSV file format. This can be obtained from:
 - A CDL (common data layer) milk recording file (available from CIS, NMR, QMMS) using converter software developed and made available free of charge by QMMS Ltd. and SUM-IT computing. This can be downloaded at: sum-it.co.uk/CDL_MCP_Converter/CDL_MCP_Converter_Update.exe (see pages 11–13 for full details)
 - Total Vet software from **total-vet.co.uk** (Use View Advanced Reports; Mastitis Rates CSV Export)

Note: The Pattern Analysis Tool report will cover the 18 months prior to the date selected when saving the input file.

3. Open the Pattern Analysis Tool Excel file.

| All cows - lactations 1+ | Qtr 0 | Qtr -1 | Qtr -2 | Qtr -3 | Qtr -4 | Qtr -5 | |
|---|-------|--------|--------|--------|--------|--------|--|
| BMSCC (,000 cells/ml) | | | | | | | |
| % Chronic | | | | | | | |
| 8 % >200K | | | | | | | Instructions |
| Lactation New IMI (%) | | | | | | | If you have a data export from software/milk |
| Dry Period New IMI (%) | | | | | | | recording organisation, click "Import CSV" to fill in the boxes from this data. |
| 'Apparent' Dry Period Cure (%) | | | | | | 1144 | the boxes from this data. |
| Dry Period Origin CM Rate (in 12) | | | | | | | If you do not, you can fill inthe green boxes |
| # Lactating Period Origin CM Rate (in 12) | | | | | | | yourself: data for the current guarter in the left |
| Grt CMIR (/100 cows/year) | | | | | | | hand column, the previous quarter in the next |
| E Cow CMIR (/100 cows/year) | | | | | | | column etc |
| Clinical Mastitis Cure Rate (1st Case) | | | | | | | |
| Heifers - lactation 1 only | | | | | | | When data entry is complete, press the "next" |
| Dry period new IMI (%) | | | | | | | |
| Dry Period Origin CM Rate (in 12) | | | | | | | |
| University of Nottingham | 8 | | | | | | Import CSV |

 Import data – click the 'Import CSV' button and browse to the required file (or type data manually in green boxes). The data screen will then be populated from the .CSV file.

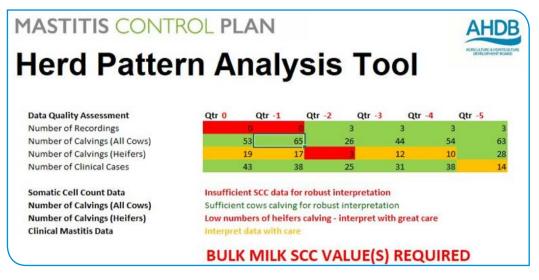
| All cows - lactations 1+ | International Advancements of the | | r-2 Qti | A set of the set of th | | 1-5 | |
|---|-----------------------------------|------|---------|--|-------|------|---|
| BMSCC (,000 cells/ml) | 225 | 202 | 160 | 128 | 150 | 199 | |
| % Chronic | 9.4 | 13.5 | 10 | 6.3 | 6.2 | 15.8 | |
| % >200K | 17.2 | 17.7 | 16.8 | 11.1 | 12.8 | 21.2 | Instructions |
| Lactation New IMI (%) | 6.8 | 5 | 6.9 | 5.9 | 7.3 | 6.4 | If you have a data export from software/milk |
| Dry Period New IMI (%) | 12 | 6.7 | 9.7 | 12.5 | 26.5 | 20.8 | recording organisation, click "Import CSV" to fill in |
| 'Apparent' Dry Period Cure (%) | 77.3 | 85.7 | 80 | 75 | 87 | 100 | the boxes from this data. |
| Dry Period Origin CM Rate (in 12) | 0.26 | 0.95 | 0.56 | 0.22 | 0.47 | 0.91 | If you do not, you can fill inthe green boxes |
| Lactating Period Origin CM Rate (in 12) | 1.84 | 3.39 | 1.4 | 2.05 | 3.25 | 3,17 | yourself: data for the current guarter in the left |
| Ort CMIR (/100 cows/year) | 27 | 48 | 26 | 24 | 43 | 63 | hand column, the previous quarter in the next |
| Cow CMIR (/100 cows/year) | 27 | 48 | 26 | 24 | 43 | 63 | column etc |
| Clinical Mastitis Cure Rate (1st Case) | 52 | 61 | 61 | 55 | 54 | 57 | |
| Heifers - lactation 1 only | | | | | | | When data entry is complete, press the "next" |
| Dry period new IMI (%) | 6.30 | 0.00 | 18.20 | 7.70 | 41.70 | 7.70 | |
| Dry Period Origin CM Rate (in 12) | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.46 | |
| University of | 5) | | | | | | Import CSV |
| Nottingham | 2 | | | | | | Contraction of the second s |
| - | | | | | | | next |

5. Click NEXT.

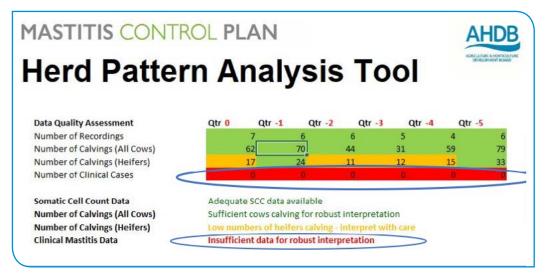
6. Data quality assessment messages will be displayed in red – these give warnings regarding the quality of the data. For example, here is a warning about low numbers of heifers calving.



Here is a warning about insufficient somatic cell counts – 6 months with no recordings and no bulk milk SCC values.



Here is a warning of no clinical data:



7. Click NEXT and the report on the pattern is displayed.

The 'traffic light' system indicates the influence of contagious (cow-to-cow) transmission, dry period environmental origin (new infections from the environment during the dry period) and lactating period environmental origin (new infections from the environment during lactation). Please note that the numbers on the reports have no meaning in themselves, but serve to show the relative importance of different influences.

These influences are reported for the 'current period' (the last 3 months), the 'recent period' (the past 12 months) and a 'historic period' (12–18 months ago) – all dates working back from the date specified when creating the .CSV file.

The involvement of heifers in each period is indicated under 'Specific Heifer Management'.

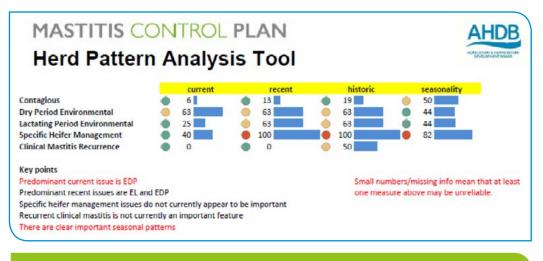
The importance of recurrence of clinical mastitis is also indicated.

The right-hand column shows whether there is a seasonal effect on each of these influences (red indicates a strong seasonal effect).

Key points (below the graphic) highlight the predominant patterns in the current and recent periods.

In the event of an equal score, or very high score, for two or more patterns, the text message below the diagram in the tool will indicate a 'mixed' pattern.

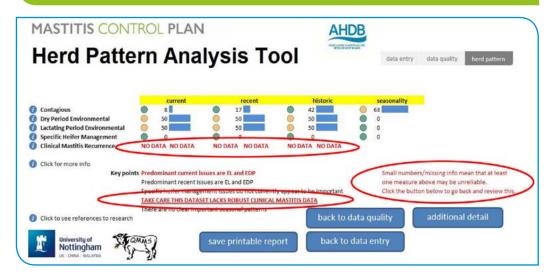
For example, in the report below, although over the last three months (current), the dry cow environment was most influential, in the 'recent' period (last 12 months), and historically (12–18 months ago), environmental effects in the dry period and lactation were equally important.



Remember

Take note of any warnings on the implications of poor data quality.

Note: In the absence of clinical data the findings are not reliable.



8. Click to save a printable report (pdf) or for additional detail.

| | 23 23 | | |
|---|-----------------------|----------------------|-------------------|
| | | back to data quality | additional detail |
| University of Nottingham UKT CHUAT MALAYSIA | save printable report | back to data entry | |

9. Further details about the individual patterns can be found by clicking the individual information buttons.

| Dry P Lacta Speci Clinic | agious eriod Environmental ting Period Environmental ific Heifer Management cal Mastitis Recurrence | (Infection acquired from the surroundings in the dry period) (Infection acquired from the surroundings in lactation) |
|---|---|---|
| Click | for more info | |
| N N | | back |
| period origin en 'lactating period' | vironmental mastitis on farm, calcu | 'score' summarising the relative importance of the lactating ulated from the numerical scores attributed to appropriate ion new infection rate from the SCC inputs would contribute |
| | | advisor to a possible 'Environmental Lactating Period' herd acted at reducing new infections from the environment to |

Some suggestions of relevant control measures follow. To return to the diagnosis screen, click BACK button.

10. Use the additional detail screen to see the various parameters over time.

| | | | | | | lysis Tool | | | | |
|---------|--------|--------|--------|--------|-----------|--------------------------------|--------------|----------|---|--|
| current | qtr -1 | qtr -2 | qtr -3 | qtr -4 | qtr -5 | | historictren | dcurrent | | |
| 13 | 25 | 13 | 13 | 6 | 31 | Contagious | | | | |
| 38 | 25 | 25 | 38 | 38 | <u>50</u> | Dry Period Environmental | - | | | |
| 38 | 63 | 0 50 | 50 | 63 | 0 50 | Lactating Period Environmental | | - | • | |
| 0 | 0 | 0100 | 0 | 67 | 0 | Specific Heifer Management | \sim | | | |
| 0 | 0 | • • | 0 | 0 | <u>50</u> | Clinical Mastitis Recurrence | | | | |
| | | | | | | | | | | |

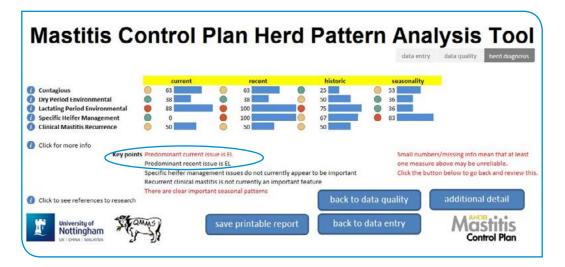
11. Close Excel or close the file to exit the tool.

| Herd Patte | ern An | alysis Tool | data entry data quality herd pattern |
|---|---|--|--|
| Contagious Dry Period Environmental Lactating Period Environmental Specific Heifer Management Clinical Mastitis Recurrence Click for more info | current 38 63 50 40 100 | Close AHDB Pattern Analysis Tool X This tool does not store data; any data entered will be deleted when you each the data from softwarermikir recording organisation, then you can always re-import the same data file to see results again. If you dill use to save a summary of the diagnosis as a pdf tile, click Cancel below. Click OK to exit. OK Cancel | sasonality |
| | nts Predominant curre Predominant rece | | Small numbers/missing info mean that at least one measure above may be unreliable. |

Note: No data can be saved in the tool, but the .CDL file can easily be loaded again.

Example Mastitis Pattern Reports

Herd Diagnosis Consistent Lactating Period Environmental (red lights and high scores)

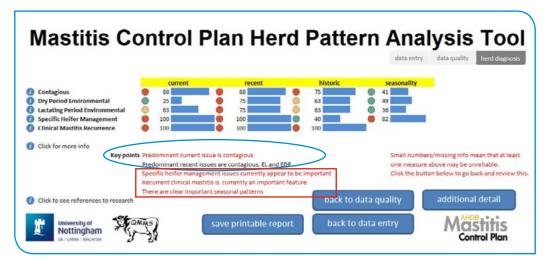


Herd Diagnosis Consistent Environmental Dry Period (red lights and high scores)

| | | current | | recent | hist | oric se | asonality | |
|--|---|-----------------|-----------|--------------------|---------------------------------------|---------|--|---|
| Contagious | ۲ | 25 | 0 | 50 | 19 | 0 57 | | |
| Dry Period Environmental | | 88 | | 100 | 100 | 36 | | |
| Lactating Period Environmental | | 13 | 0 | 63 | 50 | 6 84 | | |
| Specific Helfer Management Clinical Mastitis Recurrence | | 29 | 0 | 50 | 40 | 6 78 | | |
| Click for more info | | ominant current | | | | | Small numbers/missi one measure above n | ng info mean that at leas nay be unreliable. |
| | | | ement iss | ues do not current | lly appear to be im ortant feature | | | w to go back and review t |

Herd Diagnosis Contagious (with recent environmental issues also)

A contagious pattern is indicated currently and in the past. Over the last 12 months ("recent" period) there have also been environmental influences.



The tool also indicates if mastitis in heifers or recurrent mastitis are particular problems, and whether problems are seasonal. In the example above, there have been issues in the past 3 and 12 months with heifers, which are seasonal. Also, recurrence is a longstanding problem (typical of contagious mastitis).

How to obtain a CDL file from your Milk Recording Organisation

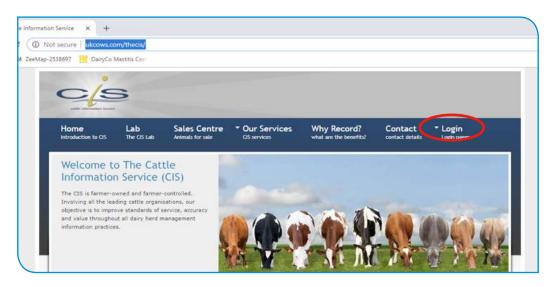
CDL files containing milk-recording data are available from the Cattle Information Service (CIS), National Milk Records (NMR) and Quality Milk Management Services (QMMS Ltd.). CDL stands for Common Data Layer – the layout of data is the same in files from all three organisations.

CIS

1. If you are not already registered for data download, contact **info@thecis.co.uk** or ring 01923 695319. You will receive your herd number and PIN.

If you need to obtain files on behalf of a third party (advisor login), you will need to complete and return two forms, found at:

- http://thecis.co.uk/theCIS/Notices/Advisor%20Application%20Form.pdf
- ukcows.com/thecis/Notices/Data%20Transfer%20Permission%20Form.pdf
- 2. Once you have your login details:
 - Go to ukcows.com/thecis/ and hover over Login
 - Select Member Login if logging in as a Member
 - If acting as a Third Party, select Adviser Login



3. Enter herd number and PIN in the Member login page or Adviser login page.

| - 1- | 1 martine and | | | | | |
|---------------------------------|---------------------|----------------------------------|-----------------|---------------------------------------|----------------------------|------------------------|
| CE | 2 | | | | | |
| Home Introduction to CIS | Lab The CIS Lab | Sales Centre Animals for sale | • Our Services | Why Record? what are the benefits? | Contact contact details | * Login Login pages |
| | | | | | | |
| Your Herd | Powered by | NBDC | | | | |
| Login | | | | | | |
| | d. This provides vo | w with an up to date vie | w of your data. | | | - |
| Welcome to Your Her | | | | | No. of Concession, Name | |
| Welcome to Your Her Herd No: | | here if you are a non-C | IS customer) | | | |

Use the advisor log in if acting as a third party.

| ata. | | | |
|------|-----|----------------|-----|
| | | and the second | |
| a | ta. | ta. | ta. |

4. Once logged in, go to Data Download Menu.

| CS | | | | | | |
|------------------------|-----------------|---------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------------|
| | | es Centre als for sale | Our Services CIS services | Why Record? what are the benefits? | Contact contact details | Your Herd sign out |
| | | | | | - 04 | ix Text Search |
| Your Herd | TEST FA | ARM (ree | corded on 24 | Jan 2019) | 12.52 | Ouick Links |
| Main Menu | | | | | | Quick Units |
| Search by animal name | ٩ | | | | | |
| - Go to New Menu - | | | | | | |
| C Herd Management Men | Reports | Menu | 0 | 100 | | r Herd Together |
| C Data Download Menu | O Dohnes C | ontrol Report | 0 | Int | egrated Pedigree an | d Milk recording Solutions |
| C Webmate | C Bull Sele | ctor | 0 | 200 000 | rformance Indicator | |
| Health Test Trend Repo | rt 🔞 😋 Al Stock | Book | 0 | | Report Sing Report | |
| O | O Oner | | 220 | 194530 | | |

5. Click on 'CDL file' and the DownLoad CDL file window will appear.

| | and the second se | Sales Centre Animals for sale | Our Services CIS services | Why Record? what are the benefits? | Contact contact details | Your Herd sign out | |
|---|---|----------------------------------|--|--|----------------------------|-----------------------|--|
| Your Herd | O P WILLIAM | 5 & PARTNERS Her | rd No: 12440 (recorded o | on 24 Jan 2019) | | ck Text Search | |
| < Back to Main Menu Data Download | Menu | | CDI File - Microsoft Edge sservices.co.uk/securedow | nload/DownLoadCDLFile.a | Karan | - 🗆 X | |
| Datastream Monthly Update CDL File CDL File Total Vet / SumIT File Lab Results File Silent Herdsman Cow I Silent Herdsman Event | Data File | Parallels | | ok 🌣 QMMS-Remote W or herd 12440 is rea | dy for downle | | |

6. Click the CDL.EXE link and save the file.

Note: To read the file into the QMMS - SUM-IT cdl converter, the file name must begin with CDL – it must be named CDL*.exe. i.e. CDL.exe or CDL Manor Farm. exe can be read but Manor Farm CDL.exe cannot.

If you wish to email the file, you will need to change the 'extension' from .exe; for example, rename the file CDL.ex (.exe files cannot usually travel by email).

NMR

1. If you are not already registered for data download, contact NMR Software Support on 03330 043043 or email softwaresupport@nmr.co.uk

They will supply your username and password. If you need to obtain data as a third party, you will need to complete and submit a Third Party Authorisation Form, available from the web page **nmr.co.uk/data-download**

- 2. Once you have registered, whenever you need a CDL, go to nmr.co.uk/software/data and log in to the Data Download area.
- **3.** Enter your username and password.

| Inters//www.ame.cou/software/data whtep-2530697 III DairyCe Mastes Cerr | https://www.nmr.co.uk/data-download ZeeMap-2538697 in Dain/Co Masthis Con | | | | | |
|--|--|--|--|--|--|--|
| 🕻 03330 043 043 🔺 i About Us i Contact Us i My NMR 🛛 🔮 🛇 | 📞 03330 043 043 🖌 i About Us i Contact Us i My NMR | | | | | |
| NMR Voungstock Breeding Production | NMR Voungstock Breed | | | | | |
| Data Download Log in to the data download area 💙 | Data download This is the data download location from NMR. | | | | | |
| This is the data download location from NMR. If you have more than one herd, you need only to log in once to access all of your data files for the most recent recordings. Suides on downloading are available from NMR for: • Downloading your Datastream/CDL from the NMR web site | Username * Password * LOGIN > Forgotten password? | | | | | |

 Your latest recording files will appear. If there is any option, select CDL (NOT Datastream). Click on your farm name alongside the 'CDL.exe' option:

| 📞 03330 043 043 🛛 🦂 About Us Contact Us | i My NMR | | 00 |
|--|------------|----------|------------|
| NMR | Youngstock | Breeding | Production |
| Data Download | | | |
| Log in to the data download area > | | | |
| This is the data download location from NMR. | | | |

5. Download and save the file.

Note: To read the file into the QMMS - SUM-IT CDL converter, the file name must begin with CDL – it must be named CDL*.exe. i.e. CDL.exe or CDL Manor Farm. exe can be read but Manor Farm CDL.exe cannot.

Should you wish to email the file, you will need to alter the 'extension' from .exe; for example, rename the file CDL.ex (.exe files cannot usually travel by email).

If you have any questions, contact NMR Software Support on 03330 043043 or email softwaresupport@nmr.co.uk

QMMS

Request results in CDL format from **milkrecording@qmms.co.uk** or ring 01749 871171. As a vet or adviser, please complete and return a Third Party Consent Form, available from **qmms.co.uk/documents/forms** or by email.

How to install the CDL converter for MPAT

1. Download the file from: sum-it.co.uk/CDL_MCP_Converter/CDL_MCP_Converter_Update.exe

The file below will appear in your downloads folder.

| 🔀 CDL_MCP_Converter_Update.exe | 16/11/2018 09:18 | Application | 28,741 KB |
|--------------------------------|------------------|-------------|-----------|
| humb' | | | |

You may receive warning messages similar to the type shown below from your security system, as this is a '.exe' file. Check that the file name is correct and, if so, proceed. In some cases, you may need to contact your System Administrator to install.

| CDL_MCP_Cexe 28.0 MB This progra sum-it.co.uk and could h computer. | downloaded Delete Actions |
|--|---|
| This program might harm your computer Publisher: Unknown Name: CDL_MCP_Converter_Update.exe Windows Defender SmartScreen reported that this program is not commonly downloaded and is not signed by its author. If you received this program as an unexpected solicitation, link or attachment, it might be an attempt to fool you. We recommend th delete it. Don't run this program Delete program | Warning Reason: Windows Executable (kms) Site: www.sum-it.co.uk/CDE_MCP_Converter/CDE_MCP_Converter_Epidee.exe Your organization's internet access policy rappets you should not be deventuading this life type. Froceed with this deventual access policy rappets you whold. Return to previous page Proceed to the whole it your own discretion. Proceed. Note the worksite at your own discretion. |

With the above messages, click on Actions, More Options, Run Anyway. If you receive the warning message illustrated above left, click Proceed, heeding the warning.

- 2. Double-click on filename CDL_MCP_Converter_Update.exe
- 3. Click Run.

| Open File | - Security Warning | × |
|--------------------|---|-------------|
| The put softwar | lisher could not be verified. Are you sure you want to ru e? | in this |
| | Name:nosis\CDL converter\CDL_MCP_Converter | _Update.exe |
| | Publisher: Unknown Publisher | |
| | Type: Application | |
| Alwa | Run Run | Cancel |
| 8 | This file does not have a valid digital signature that verifie publisher. You should only run software from publishers How can I decide what software to run? | |

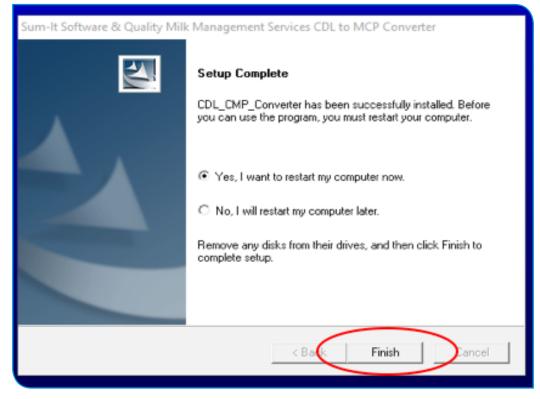
- 4. Click Yes to making changes to your computer.
- 5. Click Next to begin installation process.



6. Click Next to start installation in the folder indicated.

| Sum-It Software & Quality Milk Management Services CDL to MCP Converter | \times |
|--|----------|
| Choose Destination Location Select folder where Setup will install files. | 22 |
| Setup will install CDL to MCP Converter in the following folder. | |
| To install to this folder, click Next. To install to a different folder, click Browse and a another folder. | select |
| | |
| | |
| | |
| Destination Folder | |
| C:\Program Files (x86)\CDL to MCP Converter Br | rowse |
| InstallShield | |
| < Back Next > | Cancel |
| | |

7. Click finish and restart the computer to complete the installation.



8. The converter icon will appear on your desktop. Click this to start the converter.



This converter has been developed and distributed by QMMS and SUM-IT free of charge for the benefit of the dairy industry.

How to use the CDL Mastitis Data Converter Tool

What this converter tool is used for

This electronic converter tool is designed to take a milk-recording Common Data Layer ('CDL') file and create an output of clinical mastitis and somatic cell count data for use with the AHDB Mastitis Pattern Analysis Tool (dairy.ahdb.org.uk/mastitis-pattern-tool).

This converter has been developed and distributed by QMMS and SUM-IT free of charge for the benefit of the dairy industry.

Specifically, the CDL converter tool creates a *.csv file containing 18 months of clinical mastitis and cell count parameters in a specific format. This *.csv file is then imported into the Pattern Analysis Tool.

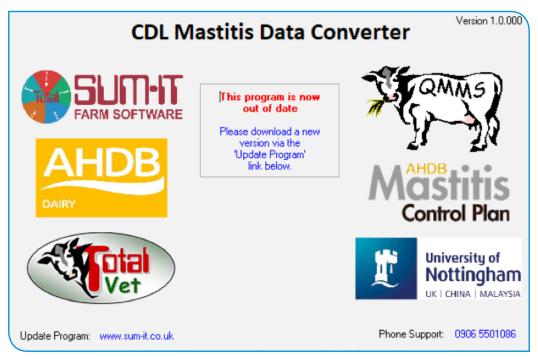
CDL files are available from the Cattle Information Service (CIS), National Milk Records (NMR) and Quality Milk Management Services (QMMS Ltd.)

How to use the CDL converter tool

1. Double-click on Desktop icon to start the converter.



Should you receive an update message, follow the instructions.



2. Front screen appears. Click 'Load CDL'.



3. Browse to where you have saved the CDL file you wish to convert.

If you have renamed your CDL file, the file name may not appear; in this event, begin typing the name and the CDL file should appear; select to open.

| Data 2018 > | > Joseph | | 0 | Search Joseph | h | 2 |
|-------------|------------|------------------|----------|---------------|----------|---|
| older | | | | | H • 0 | 0 |
| A Name | | Date modified | Туре | | Size | |
| | Joseph.sdz | 18/05/2018 11:08 | SDZ File | | 1,297 KB | |
| | | | | | | |
| | | | | | | |
| * | | • | | | | |

4. Wait until the CDL data is read into the converter – this may take a couple of minutes. When the CDL data is ready, the central panel will contain the herd details.



5. Once the CDL file has been converted, you have the option to merge in ADDITIONAL clinical mastitis data, if appropriate, and if this additional clinical mastitis data is available in a suitable separate file.

Additional clinical mastitis data must be in a file with the name structure below:

mastitis_farm name.csv i.e. the file name must begin with 'mastitis'.

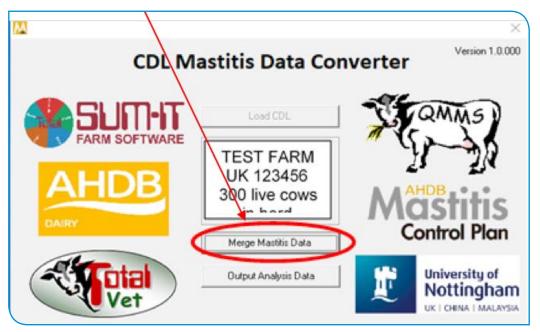
The file can be created in a spreadsheet, e.g. Excel, but, for this purpose, a version must be saved in the file type .csv

The layout of the data must be exactly as shown below, with the first column as the date of the clinical case, followed by the line number of the cow (as this cow exists in the milk-recording CDL file).

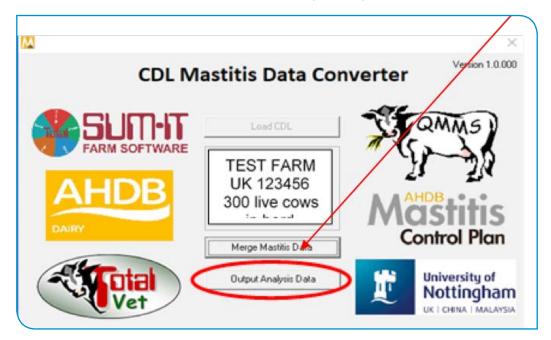
| Date | LineNo | Comment | Severity | FRLeft | FRRight | BKLeft | BKRight |
|------------|--------|---------|----------|--------|---------|--------|---------|
| 15/01/2016 | 67 | | | | 1 | | |
| 16/01/2016 | 870 | | | | | | 1 |
| 03/02/2016 | 562 | | | 1 | | | |

Date' and 'LineNo' are essential; the following columns are optional, but quarter information is useful. More than 8 columns or other anomalies will lead to a row of data being rejected – a message will indicate if this has happened.





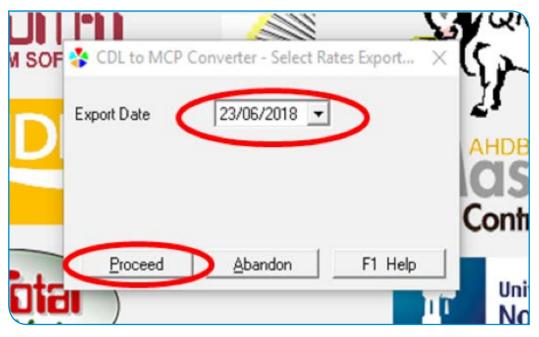
If there is no additional clinical data, click the 'Output Analysis Data' button.



7. Enter an appropriate export date

The default date is the date of the last event 'action' recorded in the CDL file. However, the most recent milk-recording date or another date may be more relevant, depending on calving pattern and management issues such as housing, turnout, etc. If the effects of housing, seasonal calving or any other events are of interest, select the export date with these in mind.

The Pattern Analysis Tool will report on the 3 months prior to the date selected (current pattern), the 12 months prior to the date selected (recent pattern), and the period 12–18 months prior to date selected (historic pattern).



8. Click 'Proceed' and enter details of where file should be saved.

Wait until the *.csv output file is calculated - this may take a couple of minutes.



9. Once the *.csv output file is created, the CDL converter tool reverts to the front screen, ready to accept another CDL.

To close the CDL converter tool, click on the X in the top right-hand corner.

Produced for you by:

AHDB Dairy

Stoneleigh Park Kenilworth Warwickshire CV8 2TL

T 024 7669 2051 E comms@ahdb.org.uk

- W ahdb.org.uk
- y @AHDB_Dairy

If you no longer wish to receive this information, please email us on **comms@ahdb.org.uk**

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