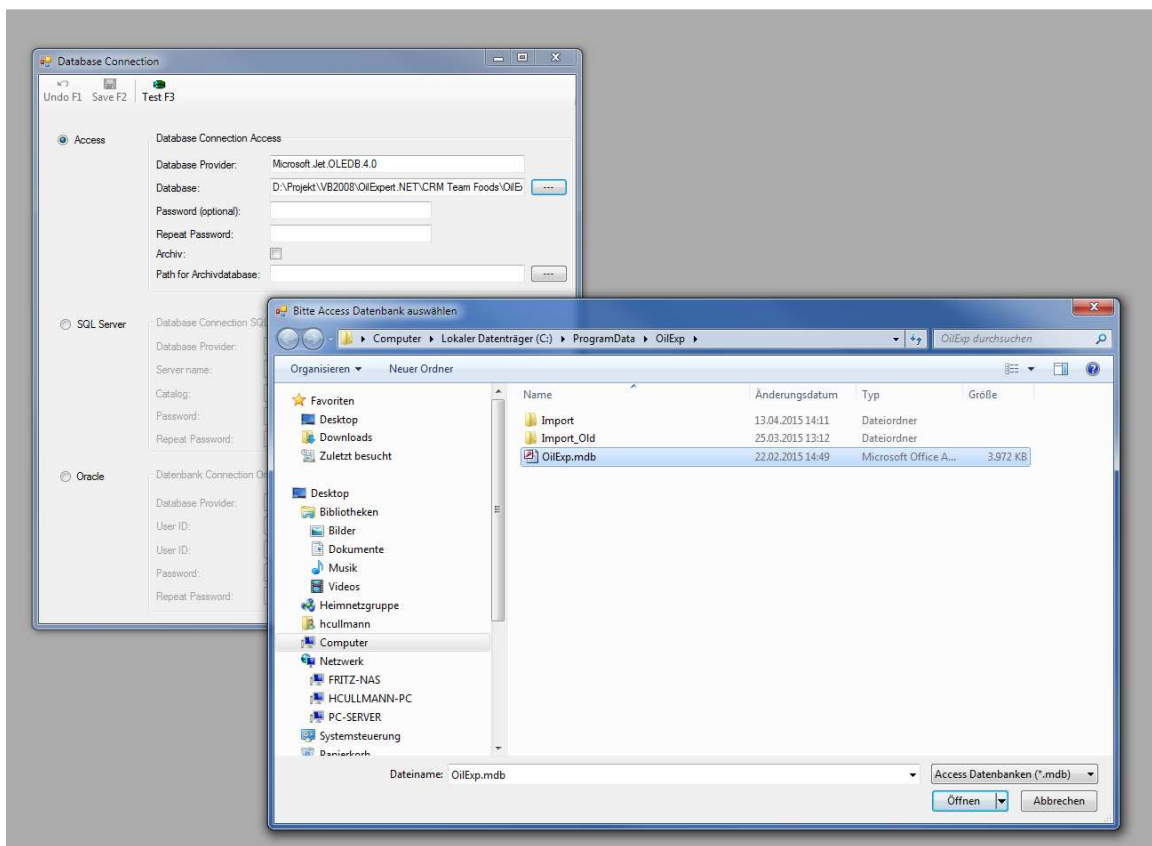# *Oil-Expert.net*

New Features of *Oil-Expert.net* Release 6.5.0

Database Connection

At the first time starting the software, there is no database connection. An information is coming up and the user will be asked to open the Database Connection dialog. Please click on Yes.

The dialog 'Database Connection' is shown in the picture below. At first click on the radio button 'ACCESS'. To select the database please click on the button right side of the item 'Database'. Normally the database is installed in the directory 'c:\programdata\oilexp. Please select the dabase 'OilExp.mdb' and click on 'Open'. Before closing the dialog please click on 'Save' to save the database connection in the Ini file. To look if the database is now available please click on the button 'Test'. Anything else is not to do. 'Password' and 'Path for Archiv Database' are optional and not required.

After closing the Database Connection dialog the software is finished. If starting the software again *Oil-Expert.net* is running with the selected database.

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The database connection function can also be used to connect the *Oil-Expert.net* software with another OilExp database, eg a test database. To change the database please select the item *Miscellaneous Data / Database Connection.*
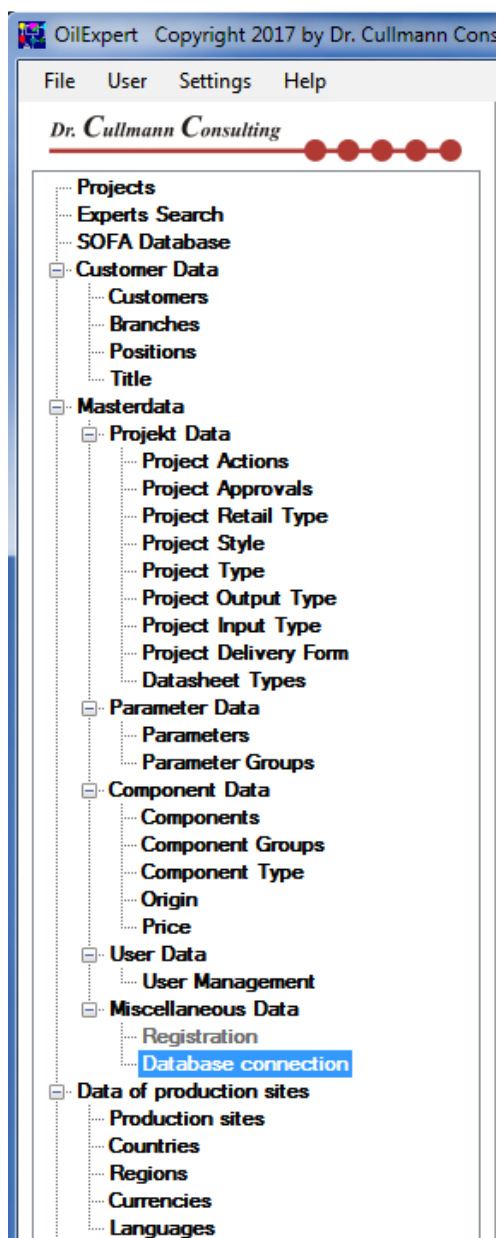
After selection the dialog shown on the previous page opens and a new database can be selected by following the procedure described. After restarting the software the new database is available.

The Access database can be protected by a password. This password is saved in the INI file as encrypted text. But be carefully and don't delete the INI file or forget the password, because in this case the database can not be used any more.

Another feature is to archiv the database each time the software is closed. To use this feature please click on the checkbox *Archiv* and put in a directory for the archived databases. The name of the archived database files is *OilExp_mm.dd.yyyySince nowhhmmss*. This feature is useful if there are problems with the database. Don't forget to return this feature, because otherwise the hard disk can overflow.

From now on two other database formats are possible - Microsoft SQL-Server and Oracle. Before using these databases all tables and queries must be converted fro Access to SQL-Server or Oracle. After that, the data from Access must be exported. If you are planning a migration to SQL-Server or Oracle please contact us.

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Calculation of SFC values

From this version, SFC values can be determined for arbitrary temperatures. These values are calculated by interpolation. The prerequisite is, of course, that corresponding SFC values calculated with solubilities are present. Example: SFC values were calculated at 10 ° C., 20 ° C., 30 ° C. and 40 ° C. Then only values between the temperature range 10 ° C to 40 ° C can be interpolated.

In addition, the melting point can be estimated from the SFC values. This estimate is based on the fact that the melting point is the temperature at which the SFC value is between 5% and 6%. The software uses the SFC value 5.5%. Because this procedure is based on experience, the estimated value for the melting point are not of great accuracy. If the measured SFC value at the highest temperature, for example 40°C is over 6%, the melting point is indicated as: *melting point > 40°C*.

For the interpolation there are two ways. The first is to use the *Component Mixer* (see picture below) for interpolation of SFC values for any temperatures. The second way is to calculate the SFC values for predefined temperatures in the worksheet (see picture on next side).

Temperatur = 25,0 °C - SFC = 10,5 %

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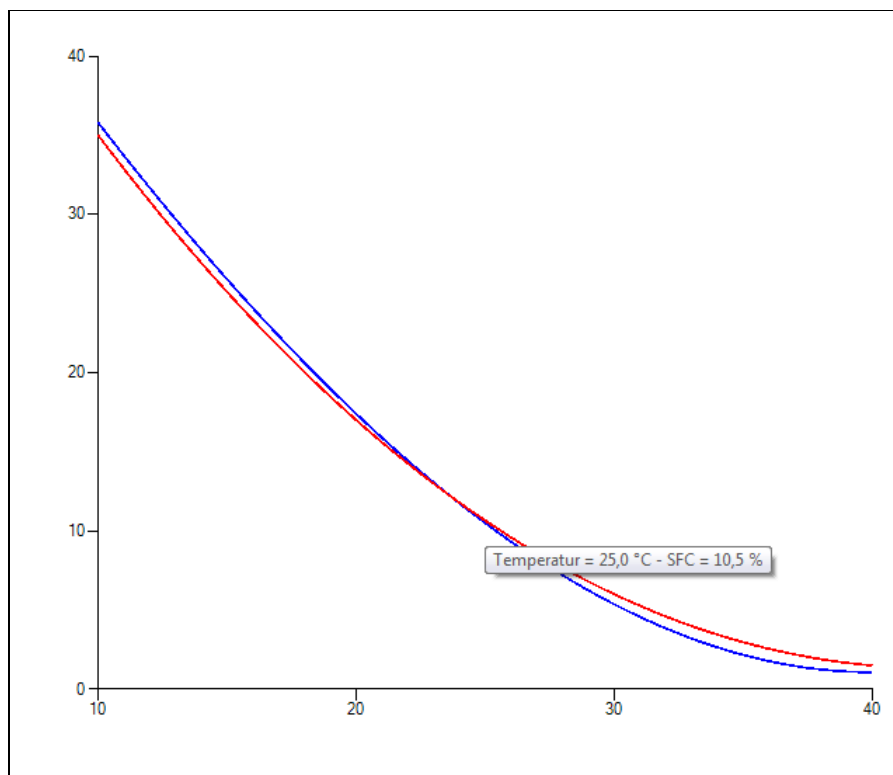
If the *Component* Mixer is opened then click with the mouse on a point on the curve. then the temperature and the corresponding SFC value are displayed for that point. In this way, you can subsequently calculate the SFC values for arbitrary temperatures, eg 15°C, 26.5°C, etc. These values are interpolated, and can be interpolated only within the calculated temperature range. Please note, that the accuracy of the interpolated values is lower as for the calculated values. In practice, it is useful to have at least four calculated SFC values in the range of 10 ° C to 40 ° C. However, it should not be less than three.

The second way is to interpolate for predefined temperatures, eg 15°C, 25°C and 35°C. In this case the SFC values are interpolated in the worksheet (see picture below) and are compared with the target values. First the corresponding parameters must be defined in the menu section *Master data / Parameter Data / Parameters* such as N15, N25 or N35. If the calculation routine is checking one of these parameters, the interpolation is initiated.

For this way of interpolation there are the same restrictions as before: The interpolated SFC values can only be interpolated within the calculated temperature range. Please note, that the accuracy of the interpolated values is lower as for the calculated values. In practice, it is useful to have at least four calculated SFC values in the range of 10 ° C to 40 ° C. However, it should not be less than three.

If the calculation failes the value **999** is written in the column *Calc*. This can happen if the temperature for the interpolated value is outside the range. Example: The range of calculated SFC values is from 10 to 40°C. The **999** occurs if the temperature is outside the range eg 5°C or 45°C.

Name	Unit	Min	Req	Max	Calc
Solids					
10℃	%		35.0		35.8
15℃	%		25.7		25.7
20℃	%		17.0		17.4
25℃	%		10.4		10.4
30℃	%		6.0		5.4
35℃	%		2.1		2.1
40℃	%		1.5		1.1

Estimate of the Slip Melting Point

In this release the slip melting point is estimated from the calculated SFC values. This estimate is based on the fact that the melting point is the temperature at which the SFC value is between 5% and 6%. For the estimate of the melting point, the software uses the value 5.5%. Because this procedure is based on experience, the estimated values for melting point are not of great accuracy - **±2°C**.

To avoid high expectations of accuracy, you should set the number of decimals for the slip melting point to 0. If the slip melting point is higher as the highest temperature of the SFC values - eg 40°C - the value for the slip melting point is set to 999.

So that the software can recognize the slip melting point, the short name must be '**MP**'. Please do not change the short name.

Global settings for Min/Max amounts in blends

In practice, the question often arises whether the quantity in the formulation of a particular component group can be limited? For example to set the amount of interestifications to max 35%, independent of the individual raw material, or the sum of liquid oils to minimum 50%, or palm products (palm oil, palm stearin, palm olein) to max 40%.

From now on this function is available in *Oil-Expert.net*. The minimum and maximum amounts are defined in the masterdata dialog *Component Groups* - in the menu tree *Master data / Component Data / Component Groups*. An example is shown in the picture below.
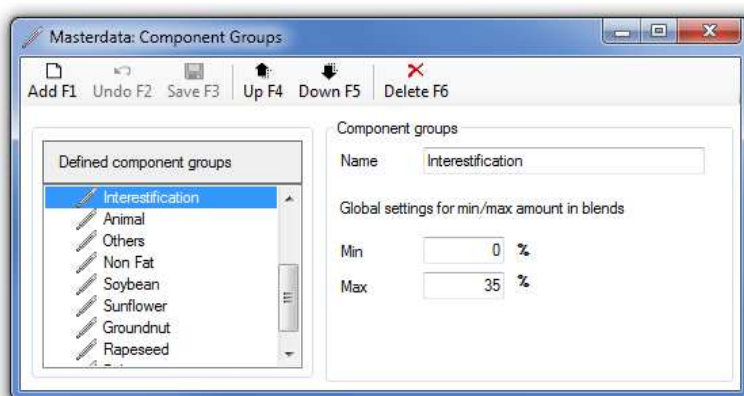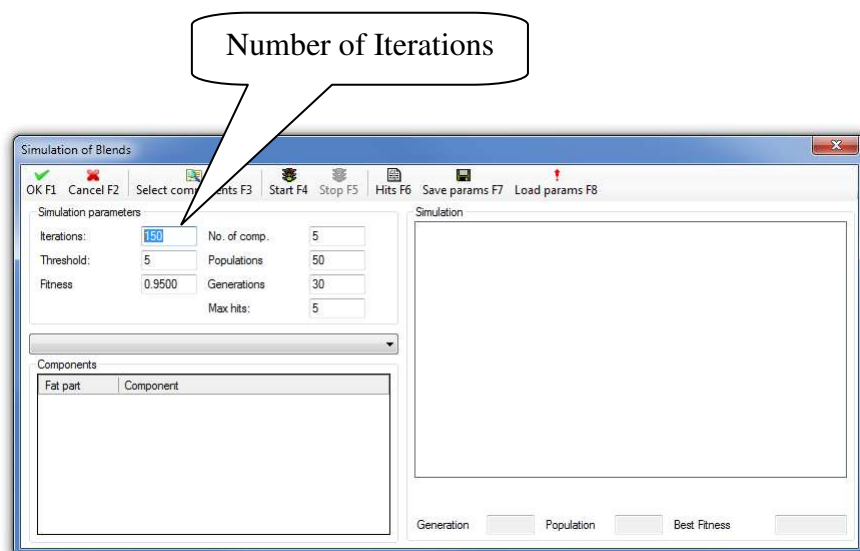
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In this case the amount of the sum of interestificaions is set from 0% to maximum 35%. This means, whether one or more interestifications are required, the sum of interestifications is always <= 35%. Solutions with more than 35% of interestifications are discarded.

In the same way it is possible to set the liquid oils to the range from minimum 50% to maximum 100%. In this case all solutions < 50% liquid oils are discarded.

But beware, if more than one restriction is defined, it may be possible that no more solutions are found. In this case, try to increase the number of iterations, e.g. from 100 to 150 (see picture below). But do not define too many restrictions. Then solutions can no longer be found.

By default the minimum value of each component group   is set to 0% and the maximum value to 100%.

Number of Iterations

Imprint

We would be glad to provide you with further information. Please feel free to contact us.

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More informations is also available on the following events:

- 16th Euro Fed Lipid Congress and Expo, Belfast, UK
  16. - 19. September 2018
  Please contact Dr. Frank Amoneit of the EuroFedLipid

Demo Version
From now on a demo version is available with full functionality. This version is six months runnable and can be extended if necessary. If interested, please contact any of the above contacts.