Oil-Expert.net

Easy, Quick, Cost-Efficient Product Development

Three more Reasons to work with *Oil-Expert.net*

The development of an up-to-date healthy fat blend requires a lot of development activities carried out by qualified personnel in the laboratory, be it for a new or improved application, quality improvement or cost reduction. The new version of *Oil-Expert.net* includes a product development management system that covers the complete product development cycle.

From now on there is the new release 6.2.0 of *Oil-Expert.net*. In addition to many smaller improvements and extensions, there are three important new features:

- For the calculation of the Solid Fat Content using the so called 'Solubility Factors' there are new correction factors, which are much easier to handle. However, the old factors remain for compatibility reasons.
- Replacement of components by older releases. This function allows the rapid replacement and the calculation of blends with components that have different parameters, eg 'soft' palm oil, 'hard' palm oil, etc. The distinction is made on the version number.
- Data import module for easy import of:
  - Recipes
  - Component/Raw material data
  - Commodity prices

Correction Factors for the Calculation of the Solid Fat Content (SFC)

The calculation of the Solid Fat Content - SFC values - of oils and fats blends results in great difficulties, because the values do not behave linear. In principle, a calculation is possible, but only when larger quantities (greater than 5%) of liquid oils and lauric fats are excluded. The reason is that the triglycerides form so-called eutectics as they are also known of metallic alloys. Some deviations from linear calculated values shows the table left side (values in absolute %). For mixtures with lauric fats or liquid oils, it is impossible to estimate the SFC values linear at more than 5% of these components.

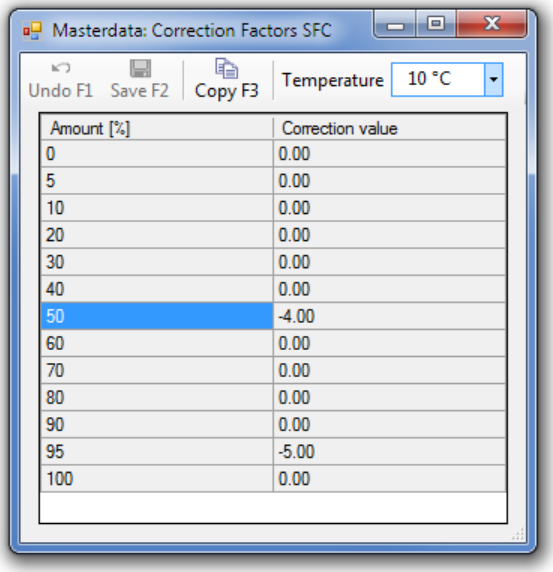
Component	SFC-Depression
Laurics	ca. 20%
Liquid oils	ca. 10%
Palm products	
Palm olein	ca. 6%
Palm oil	ca. 3%
Palm stearin	ca. 2%
'Trans-Fats'	0%

For the first version of OilExpert therefore an empirical algorithm was developed, which was

based on empirical methods. To get more accuracy there are new correction factors coming with the new release.

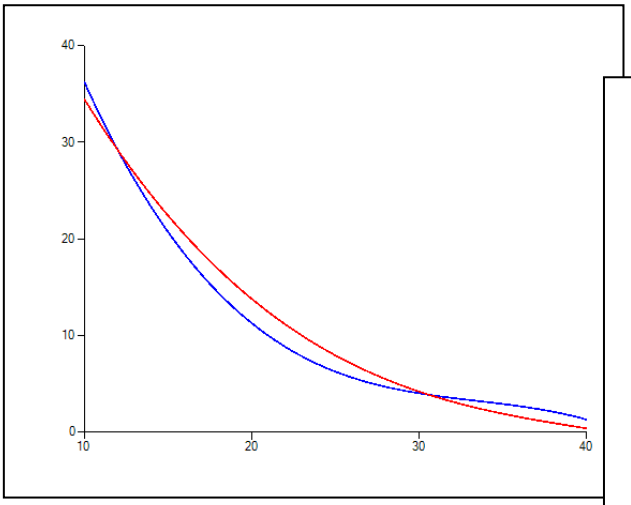
The calculation of the SFC values is a compromise between accuracy and efficiency, ie. input data. To 'difficult' oils and fats (for calculation of SFC values), such as Coconut oil or Palm Olein, correction factors are required. So far, the correction factors were applied multiplicatively, ie. the calculated values were multiplied by the factor. There are problems with this method if the SFC values are very small - below 1 The correction factors must be very big in this area, and sometimes a correction is not possible.

To improve this behavior, new correction factors have been developed by our company which make the correction additive. This simplifies the handling of the factors and corresponds to a more 'subjective' way of working. The correction factors are dependent on the percentage of the component. A practical example is shown in the dialog right side using double fractionated palm olein.



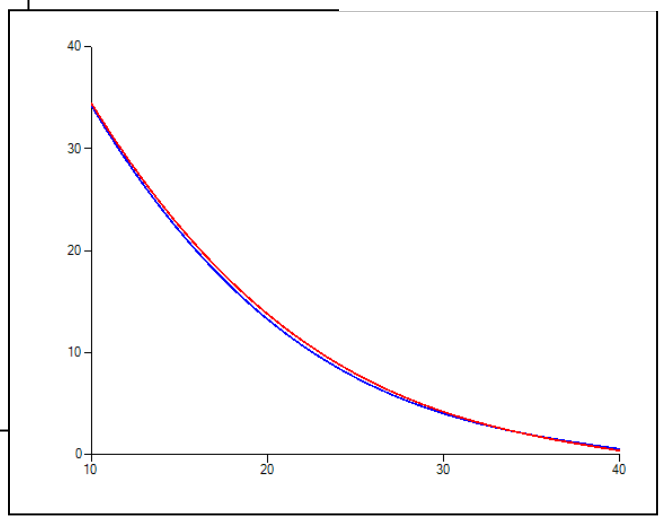
The effect of the new correction factors is documented with the two images below - No correction factors / With correction factors.

The previously used factors of course remain for compatibility reasons. So there must be nothing changed for all existing components.



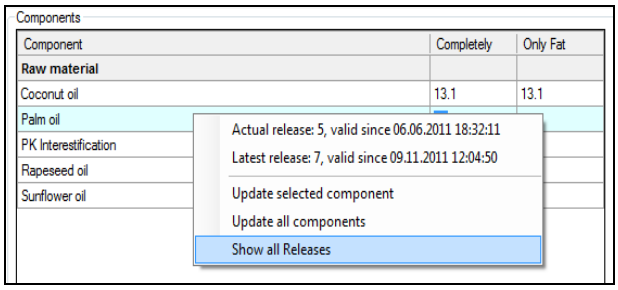
No correction factors

With correction factors



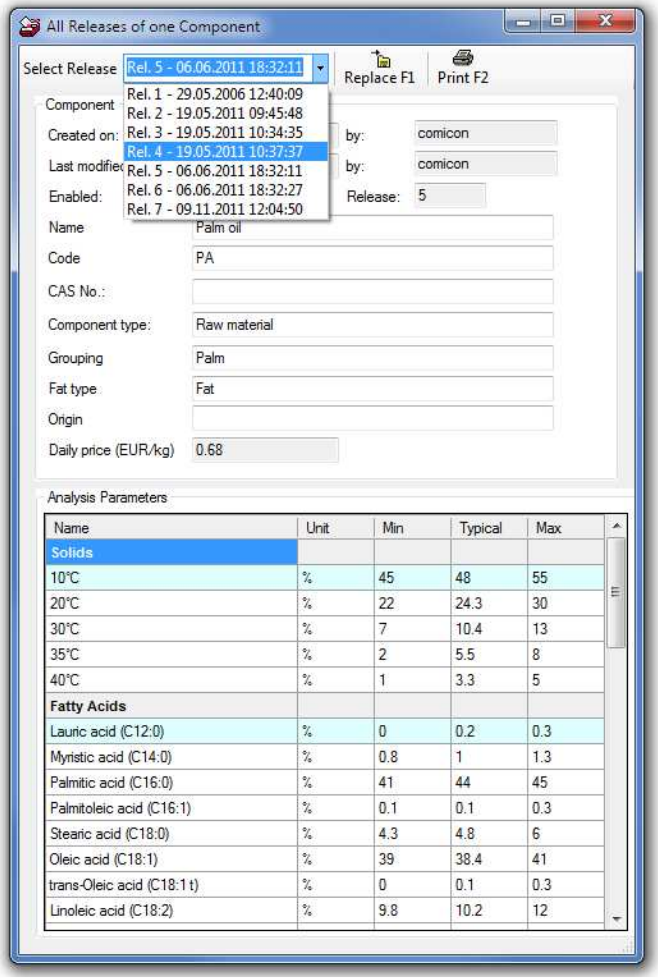
Calculation of Fat Blends with older Releases of Components

Since a long time parameters and components have a release management. From this version it is possible to use older components with the corresponding data for the fat recipe or to replace newer components through older.



This provides the option to create multiple versions of a component with different parameters. For example, palm oil with different SFC values - soft, medium, hard.

The exchange takes place simply by right clicking on the component and selecting 'Show all Releases' (Please see figure on the left).



The dialog left displays all releases of one component. After selecting the release number the component is shown with the parameters corresponding to the selected release.

To replace the component in the data sheet is only a click away on the button *Replace*. The calculation of the parameter values on the data sheet takes place immediately with the new release of the component.

In the same way older releases of components can be inserted directly into a new recipe.

In the recipe section of a datasheet, the release can be displayed by clicking the right mouse button on the component.

Data Import Module

Oil-Expert.net can import various data starting with release 6.2.0. There currently are provided:

- Recipes
- Component/Raw material data
- Commodity prices

The data must be available as a text file in a predefined format and the data files must have a predefined file extension. Besides the directory on the server or local hard disk and a number of other options can be set.

In order to use other file formats for importing data, we recommend the software cConnect, a software of LAIX Technologies. With cConnect you can convert any file format to other file formats so that the data generated by cConnect files can be read and processed directly by *Oil-Expert.net*. With cConnect even calculations are possible, for example, sum of all saturated fatty acids, etc.

If required we will make you a cost effective offer including the configuration for the required file formats.

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

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