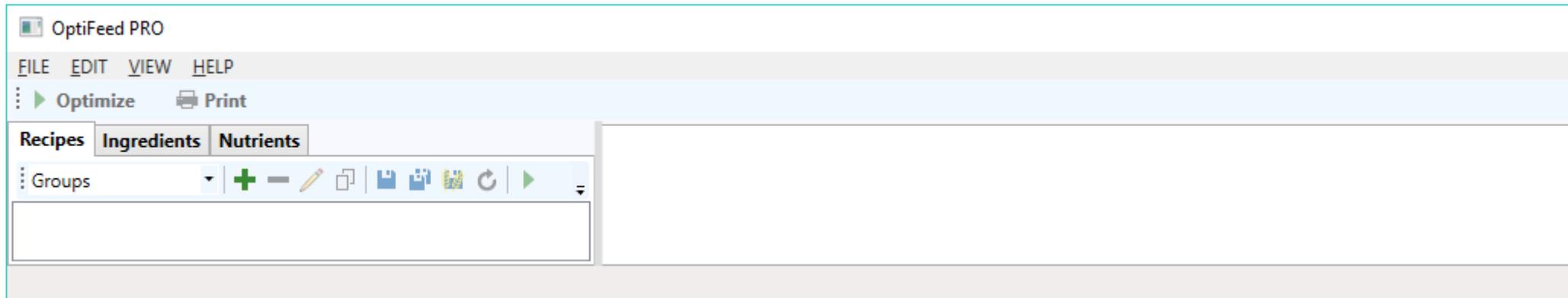


7. Main window



The main window of the program consists of the following elements (from top to bottom):

- main menu
- quick slot bar containing shortcuts to the most frequently issued commands
- workspace, whose left part consists of trees: recipes, ingredients, and nutrients, while the right – optimization panel
- messages bar, where eventual errors are displayed

Individual elements of the working area are separated by gray sliding beams with which the surface area covered by it can change.

7.1. Main menu

FILE (Alt+F)

Backup database

Creates a file with a backup copy of the entire database.

Restore database from backup

Recreates database from file with backup.

Restore database to factory state

Restore the database to the factory settings, i.e. deletes all data created by the user, leaving only the sample data provided with the program.

Exit (Alt+F4)

Closes the program.

EDIT (Alt+E)**Nutritional recommendations**

Opens a window for editing (i.e. modification and deletion) of nutritional recommendations.

Animals groups

Opens a window for editing (i.e. modification and deletion) of animals groups, production groups, and production phases.

Ingredients groups

Opens a window for editing (i.e. modification and deletion) of ingredients groups.

Nutrients groups

Opens a window for editing (i.e. modification and deletion) of nutrients ingredients groups.

Nutrients units

Opens a window for editing (i.e. modification and deletion) of nutrients units.

Language

Allows for change of user interface language. Requires program restart.

Currency

Allows for change of currency symbol. It can be selected from the drop down list or you can enter your own. Requires program restart for the full effect.

VIEW (Alt+V)

Standard

Switches on standard (complete) system of the program main window.

Optimization

Switches on program main window, in which optimization panel occupies the entire working area.

Recipes

Switches on a program main window, in which recipes tree occupies the entire working area.

Ingredients

Switches on a program main window, in which ingredients tree occupies the entire working area.

Nutrients

Switches on a program main window, in which nutrients tree occupies the entire working area.

Animals groups

Allows for selection of animals groups for which the specific ingredients and nutrients will be shown.

HELP (Alt+H)

Help (F1)

Opens this file with the help of program.

About

Opens a window containing basic information about the program.

Version history

Opens a window containing program update history.

License

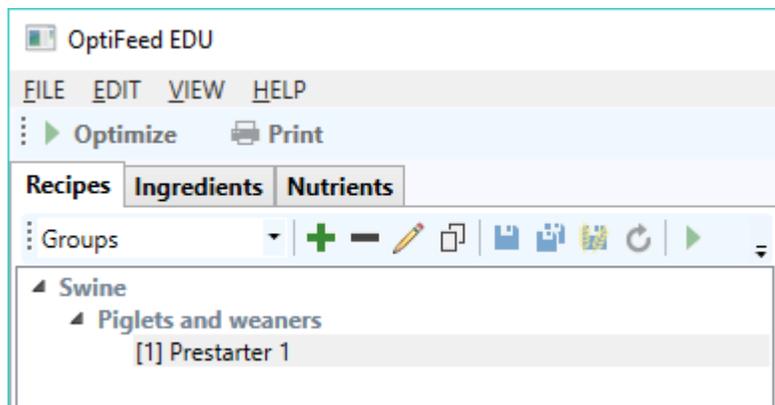
Opens a window for obtaining and entering, downloading or verification of license key.

7.2. Recipes

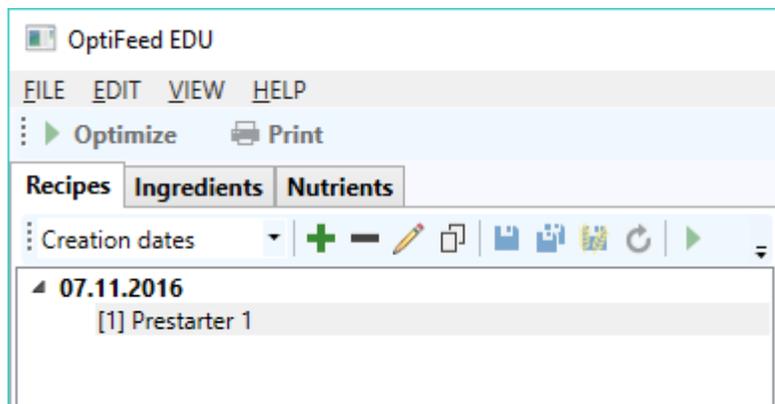
Recipes tab contains tree of all your feed recipes. This tree will be empty until you create your first recipe.

Recipes may be organized (grouped) in three ways, which is determined by selection list located in the left side of the quick slot bar:

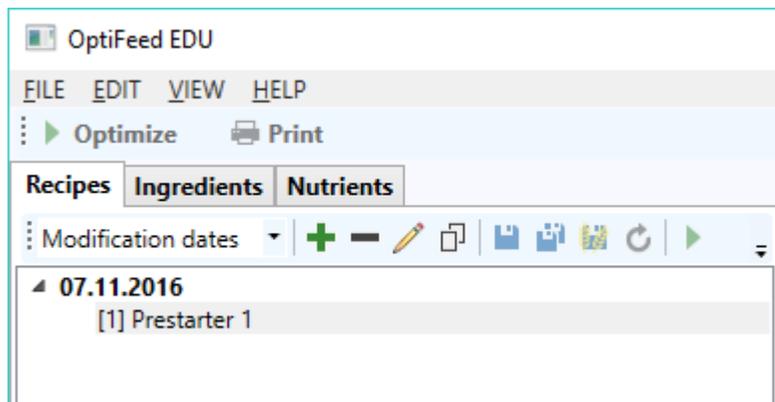
- Groups (default mode) – in this mode the recipes are organized in a tree, wherein animals groups are found on the first level, production groups are on the second level, and only recipes are on the third level.



- Creation dates - in this mode the recipe are organized in a tree, wherein the dates of creation of recipes is on the first level, and only recipes are on the second level.



- Modification dates - in this mode, the recipes are organized in a tree wherein the date of last modification of recipes is on the first level, and only recipes are on the second level.



Worth noting that in each mode the recipe is represented by character string consisting of the following components:

[recipe code] production phase - optional name of the recipe

Single-click of recipe causes its opening in a new tab located on optimization panel situated on the right. In contrast, double-click of recipe causes its opening in edit mode, in a separate Recipe window.

The quick slot bar located above the tree contains, besides a selection list that facilitates selection of the mode of recipes grouping, a series of buttons that trigger commands that are also available in the tree context menu activated by right mouse button. Here is a complete list of these commands:

-  create new recipe - opens a window facilitating creation of a new recipe
-  delete (active) recipe - irretrievably deletes (active) recipe from database
-  edit (active) recipe - opens a window facilitating editing of (active) recipe
-  create copy of (active) recipe - opens a window facilitating adding copy of (active) recipe
-  save (active) recipe - saves changes to (active) recipe
-  save (active) recipe as copy - opens a window facilitating adding of a (active) copy of modified recipe; changes to the (active) recipe are discarded
-  save (active) recipe as ingredient - opens a window facilitating opening of a new ingredient on the basis of (active) recipe
-  reload (active) recipe - discards changes to (active) recipe
-  optimize (active) recipe - attempts to optimize (active) recipe
-  print (active) recipe - opens a window facilitating printing of (active) recipe

7.3. Ingredients

Ingredients tab primarily contains a tree of all ingredients. This tree is a 3-level. Ingredients groups are found on the first level. Base ingredients are to be found on the second level. While derivative ingredients, being variants (strains) of base ingredients, are found on the optional third level.

OptiFeed PRO

FILE EDIT VIEW HELP

Optimize Print

Recipes Ingredients Nutrients

+ - ✎ 📄 ↻ ↺ ↻

▲ Cereal - grains and middlings

▲ [#310] Wheat	  	580,00 €/t
[#320] Wheat (ENZ)	 	580,00 €/t
[#315] Wheat extruded	 	800,00 €/t
[#317] Cooked wheat	 	700,00 €/t
[#319] Wheat, cooked middlings	 	600,00 €/t
[#330] Maize 8%	 	600,00 €/t
[#340] Maize 9%	 	600,00 €/t
[#345] Corn cooked	 	600,00 €/t
▶ [#350] Triticale	 	550,00 €/t
▶ [#370] Barley	 	550,00 €/t
[#375] Cooked barley	 	700,00 €/t
▶ [#390] Oats	 	450,00 €/t
[#395] Oats cooked	 	600,00 €/t
▶ [#410] Rye	 	400,00 €/t
[#430] Sorghum	 	800,00 €/t
[#440] Rice, brown	 	900,00 €/t

- ▶ Protein plants
- ▶ Egg and dairy products
- ▶ Oils and fats
- ▶ Products and by-products of food industry

📊 📈 X/Y ➡

Code	Nutrient		Content
#2	Dry matter	  	880,00 g/kg
#3	Moisture	  	<i>f_x</i> 120,00 g/kg
#4	Crude protein	 	119,00 g/kg
#5	Crude fat	 	20,00 g/kg
#6	Crude fibre	 	29,00 g/kg
#7	Crude ash	 	18,00 g/kg
#8	Nitrogen free extract	 	<i>f_x</i> 694,00 g/kg
#30	AMEn Poultry		<i>f_x</i> 13,49 MJ/kg
#31	AMEn Poultry		<i>f_x</i> 3 220,97 kcal/kg

A single click of the ingredient causes loading of its list of nutrients contents in the table below ingredients tree. While double-clicking ingredient causes its opening, in edit mode, in a separate Ingredient window.

The quick slot bar located above the tree contains a series of commands-triggering buttons, which are also available in the tree's context menu that is activated by right mouse button. Here is a complete list of these commands:

-  create new ingredient - opens a window that facilitates creating of a new ingredient
-  delete (current) ingredient - irretrievably deletes (current) ingredient from the database
-  edit (current) ingredient - opens that facilitates editing of (current) ingredient
-  add copy of (current) ingredient - opens a window that facilitates adding a copy of (current) ingredient
-  export (current) ingredient - exports (current) ingredient to a file in .ing format
-  import ingredient from file - imports ingredient from a file of .ing format
-  add (current) ingredient to active recipe - adds (current) ingredient to the list of active recipe's ingredients

The table of nutrients contents located under ingredients tree consist of the following columns:

- Code - nutrient code
- Nutrient - nutrient name
- Content - nutrient content in the ingredient expressed in its proper unit

Nutrients contents may be preceded by the following symbols:

f_x for a given nutrient, dependencies have been defined and are used to calculate the content - program uses content calculated from the dependencies

 for a given nutrient, dependencies have been defined, but they are not used to calculate the content - program uses own content

 for a given nutrient, no dependencies have been defined, but it was decided that the content be calculated from the dependencies - program uses own content

No symbol means that no dependencies have been defined for the current nutrient and it was decided to use own content - the program uses own content.

The quick slot bar located above the table consists of a series of commands-triggering buttons, which are also available in the context menu of the table, activated by right mouse button. Here is a complete list of these commands:

 edit (current) nutrient content - opens the window for editing (current) nutrient contents in ingredient (applies only to ingredients nutrients supplied with the program and all the nutrients of your ingredients) - the command also activated by double-clicking the nutrient in the table

 edit (current) nutrient - opens a window for editing (current) nutrient (applies only to your nutrients)

 add new nutrients ratio to active recipe - creates a new ratio with (selected) nutrient in the numerator and adds it to the active recipe

 ^x insert (selected) nutrient into current ratio numerator of active recipe - inserts, potentially overwriting, (selected) nutrient to numerator of active recipe current ratio

 ^y insert (selected) nutrient into current ratio denominator of active recipe - inserts, potentially overwriting (selected) component of the denominator of the ratio of the current active recipe

 add (current) nutrient to active recipe - adds (current) nutrient to the list of active recipe's ingredients

7.4. Nutrients

Nutrients tab contains a tree for all nutrients. It is a 2-level tree. Components groups are found on the first level. The second level is occupied exclusively by ingredients.

OptiFeed PRO

FILE EDIT VIEW HELP

Optimize Print

Recipes Ingredients **Nutrients**

+ - ✎ 📄 X/Y ➡

Composition

[#1] WEIGHT	🐔🐷🐕	[g/kg]
[#2] Dry matter	🐔🐷🐕	[g/kg]
[#3] Moisture	🐔🐷🐕	[g/kg]
[#4] Crude protein	🐔🐷🐕	[g/kg]
[#5] Crude fat	🐔🐷🐕	[g/kg]
[#6] Crude fibre	🐔🐷🐕	[g/kg]
[#7] Crude ash	🐔🐷🐕	[g/kg]
[#8] Nitrogen free extract	🐔🐷🐕	[g/kg]
[#9] Organic matter	🐔🐷🐕	[g/kg]
[#10] Fermentable organic matter	🐔🐷🐕	[g/kg]
[#12] Sugars total	🐔🐷🐕	[g/kg]
[#13] Lactose	🐔🐷🐕	[g/kg]
[#14] Starch	🐔🐷🐕	[g/kg]
[#20] Protein dig. Fur	🐕	[g/kg]
[#21] Fat dig. Fur	🐕	[g/kg]
[#22] Carbohydrates dig. Fur	🐕	[g/kg]

- ▷ Energy Poultry
- ▷ Energy Swine
- ▷ Energy Fur
- ▷ Macro minerals
- ▷ Amino acids
- ▷ Digestible amino acids Poultry
- ▷ Digestible amino acids Swine
- ▷ Vitamins
- ▷ Micro minerals
- ▷ Fatty acids
- ▷ Enzymes
- ▷ Colorants
- ▷ Coccidiostats
- ▷ Feed additives
- ▷ Coefficients/factors

Double-clicking of the nutrient opens it in edit mode, in a separate Nutrient window.

The quick slot bar located above the tree contains a series of commands-triggering buttons, which are also available in the tree's context menu activate by right mouse button. Here is a complete list of these commands:

-  create new nutrient - opens a window for creating a new nutrient
-  delete (current) nutrient - irretrievably deletes (current) nutrient from the database
-  edit (current) nutrient - opens a window for editing (current) nutrient
-  add copy of (current) nutrient - opens a window that facilitates adding a copy of (current) nutrient
-  add new nutrients ratio to active recipe - creates a new ration with (selected) nutrient in the numerator and adds it to the active recipe
-  insert (selected) nutrient into current ratio numerator of active recipe - inserts, potentially overwriting, (selected) nutrient into current ratio denominator of active recipe
-  insert (selected) nutrient into current ratio denominator of active recipe - inserts (selected) nutrient, potentially overwriting, into current ratio denominator of active recipe
-  add (current) nutrient to active recipe - adds (current) nutrient to the list of nutrients of active recipe

7.5. Optimization panel

Optimization panel occupies the entire right side of the working area. It consists of tabs representing all currently open feed recipe (just to remind – in order to open a recipe, it is enough to click it in the recipes tree).

OptiFeed PRO

FILE EDIT VIEW HELP

Optimize Print

*[1] X

Previous price: 580,00 € 580,00 €/t Price: 763,39 € (+183,39 €) 763,39 €/t (+183,39 €/t) Quantity: 100,00% 1 000,00 kg ✓

← 0% ↻ ↻ ↻ 0% ↻ ↻ ↻

Code	Ingredient	Price [€/t]	Min [%]	Max [%]	Share [%]	Quantity [kg]	Difference [kg]	Min price
#320	Wheat (ENZ)	580,00			83,63	836,26	-163,74	
#480	Soybean meal	1 700,00			16,37	163,74	163,74	5
#330	Maize 8%	600,00			0,00	0,00		4

Nutrients Nutrients ratios

← ↻ ↻ ↻ ↻ ↻ ↻

Code	Nutrient	Min	Max	Content
#5	Crude fat			20,65 g/kg
#4	Crude protein		175,00 g/kg	175,00 g/kg
#6	Crude fibre			30,96 g/kg

The recipe header contains its code (in square brackets), optionally preceded by a *, whose presence indicates that since its opening, the recipe has been modified, and a button used to close it.

Next in line are two adjacent toolbars: parameters toolbar and ingredients command toolbar.

Recipe parameters toolbar contains the following information:

- previous recipe price [€/charge and €/t]
- current recipe price and the difference between current and previous price [€/charge and €/t]

- actual amount of feed [% and kg] - should be 100% and amount in kg equal to charge respectively
- icon, which represents the result of last optimization: positive , neutral , negative , or unknown ; More detailed information on quality of optimization result can be achieved by hovering the mouse cursor over the icon.

If the program was unable to find an optimal composition of recipe, which it notifies using an icon , it marks with a red font all restrictions, Min and Max, of ingredients / nutrients/ ratios of standing in its way. These are the so-called infeasibility set limitations. In this case, they should be loosened or removed and optimization process repeated. If these restrictions apply to ingredients contents or their ratios, then adding of ingredients may prove effective.

In the case of current price and current amount, the program signals values as inferior or erroneous using red font, while green symbolizes better or correct values. Black color is neutral.

7.5.1. Ingredients

A table of ingredients selected for optimization of recipe is situated under the parameters and commands toolbars. It contains the following columns:

- Code - ingredient code
- Ingredient - ingredient name
- Price [€/t] - ingredient price in €/t (input box editable)
- Min [%] - minimum acceptable percentage of ingredient (input box editable)
- Max [%]-maximum permissible percentage share of ingredient (input box editable)
- Share [%] - current percentage share of ingredient (input box editable)
- Quantity [kg] - current amount of ingredient in kg
- Difference [kg] - difference between current and previous amount of ingredient kg
- Min price [€/t] - minimum price of ingredient [€/t] at which its share remains unchanged
- Max price [€/t] - maximum price of ingredient [€/t] at which its share remains unchanged

Ingredient price in €/t can be edited in two ways. The first of these is ad hoc modification of the price directly in the ingredients table. Such a modified price - called local price - will be visible only in the current recipe. A star * appears to its right indicating that this price differs from ingredient price saved in the database. The same can be achieved by changing the price of ingredient in a separate window activated by the command "edit (current) ingredient" (or double-click) on

Ingredients tab tree. **It should be kept in mind that a modified price - called global price - will be automatically propagated to all the recipes in the program, except of those that had had local prices entered before.**

In addition to optimizing, it offers the possibility of manually balancing recipes – text fields in the Share column [%], where any value can be entered (as long as they add up to 100%) are used for this. Additionally, the program makes sure that the shares you entered are within the ranges provided in the Min [%] and Max [%] columns. The program signals a violation of this rules by red font.

Blue arrowheads may appear in the column with percentage share. Arrowhead pointing upwards (▲) indicates that the ingredient share is greater than or equal to Max limit, and an arrowhead pointing down (▼), that ingredient share is less than or equal to the Min limit.

The quick slot bar located below the parameters toolbar contains a series of commands-triggering buttons, which are also available in the context menu of ingredients table activated by right mouse button. Here is a complete list of these commands:



delete (current) ingredient from (active) recipe - deletes (current) ingredient from the list of ingredients of (active) recipe



restore database price of (current) ingredient - replaces the local price of (current) ingredient with its global (database) price



delete Min constraint of (current) ingredient - permanently deletes minimum permissible percentage ingredient share



delete Max constraint of (current) ingredient - permanently removes maximum permissible percentage ingredient share



reset (current) ingredient share - resets (current) ingredient share



restore database prices of all ingredients - replaces local prices of all ingredients with their global (database) prices

 delete Min constraints of all ingredients - permanently deletes minimum permissible percentage ingredient shares for all the ingredients

 delete Max constraints of all ingredients - permanently deletes maximum permissible percentage ingredient shares for all the ingredients

7.5.2. Nutrients

Two tabs with tables are found at the bottom of optimization panel. The first one contains a list of nutrients selected for optimization of the recipe. It consists of the following columns:

- Code - nutrient code
- Nutrient - nutrient name
- Min - minimum permissible nutrient content expressed in its proper unit (input box editable)
- Max - the maximum permissible nutrient content expressed in its proper unit (input box editable)
- Content - nutrient content expressed in its proper unit (input box editable)
- Difference - the difference between current and previous nutrient content expressed in its proper unit (input box editable)

The program constantly makes sure that the contents of all nutrients are within the ranges specified in Min and Max columns. The program indicates when this rule has been breached with the help of red font.

Blue arrowheads may appear in the column with the content. An arrowhead pointing upwards (▲) indicates the nutrient content is greater than or equal to Max limit, while an arrowhead pointing down (▼) indicates that the nutrient content is less than or equal to Min limit.

The quick slot bar located above the nutrients table contains a series of commands-triggering buttons, which are also available in the table context menu activated by right mouse button. Here is a complete list of these commands:



delete (current) nutrient from (active) recipe - deletes (current) nutrient from the list of nutrients of (active) recipe



delete Min constraint of (current) nutrient - irretrievably deletes minimum permissible value of nutrient

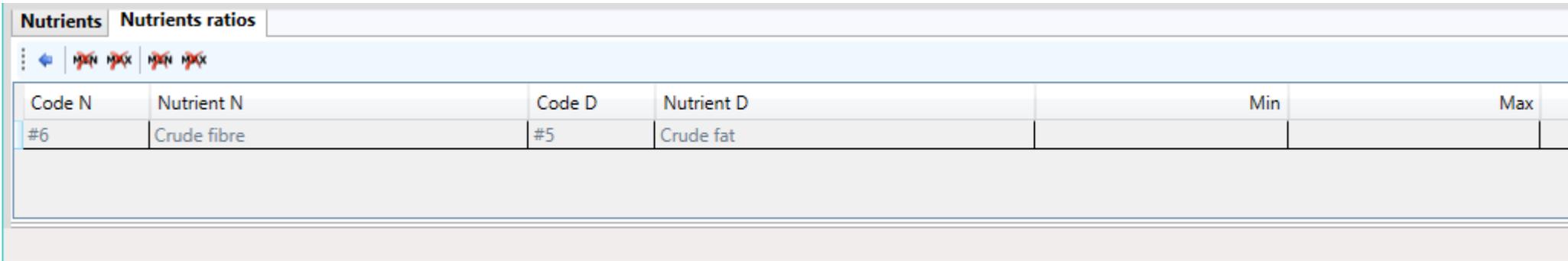
 delete Max constraint of (current) nutrient - irretrievably deletes maximum permissible value of nutrient

 delete Min constraints of all nutrients - irretrievably deletes minimum permissible values of all nutrients

 delete Max constraints of all nutrients - irretrievably deletes maximum permissible values of all nutrients

7.5.3. Nutrients ratios

The second tab contains a list of nutrients ratios selected to optimize the recipe.



Code N	Nutrient N	Code D	Nutrient D	Min	Max
#6	Crude fibre	#5	Crude fat		

It consists of the following columns:

- Code N - nutrient code in ratio numerator
- Nutrient N - nutrient name in ratio numerator
- Code D - nutrient code in ratio denominator
- Nutrient D - nutrient name in ratio denominator
- Min - minimum permissible value of nutrients ratio (input box editable)
- Max - maximum permissible value of nutrients ratio (input box field)
- Ratio - value of nutrients ratio

The program constantly makes sure that the contents of all nutrients ratios are within the ranges specified in Min and Max columns. The program indicates when this rule has been breached with the help of red font.

Blue arrowheads may appear in the column with the ratio. An arrowhead pointing upwards (▲) indicates the ratio is greater than or equal to Max limit, while an arrowhead pointing down (▼) indicates that the ratio is less than or equal to Min limit.

The quick slot bar located above the ratios table contains a series of commands-triggering buttons, which are also available in the table context menu activated by right mouse button. Here is a complete list of these commands:



delete (current) nutrients ratio from (active) recipe - deletes (current) nutrients ratio from list of nutrients ratios of (active) recipe



delete Min constraint of (current) ratio - irretrievably deletes minimum permissible ratio value of nutrients ratio



delete Max constraint of (current) ratio - irretrievably deletes maximum permissible value of nutrients ratio



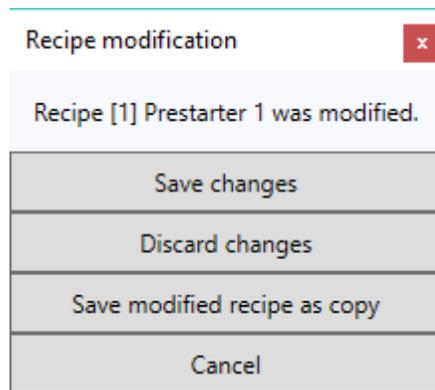
delete Min constraints of all nutrients ratios - irretrievably deletes minimum permissible value of all nutrients ratios



delete Max constraints of all nutrients ratios - irretrievably deletes maximum permissible value of all nutrients ratios

7.6. Closing of recipe

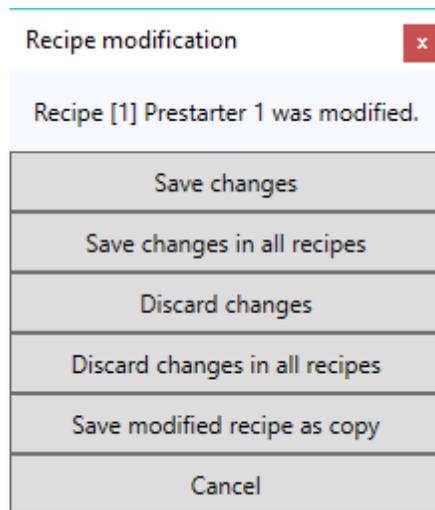
Closing of modified recipe using the button on the tab with its code causes appearance of the following window on the screen:



The meaning of individual commands is intuitive and requires no additional explanation.

7.7. Closing of program

Closing of program in a situation where least one recipe was modified results in the appearance of the following window:



The meaning of individual commands is intuitive and requires no additional explanation.