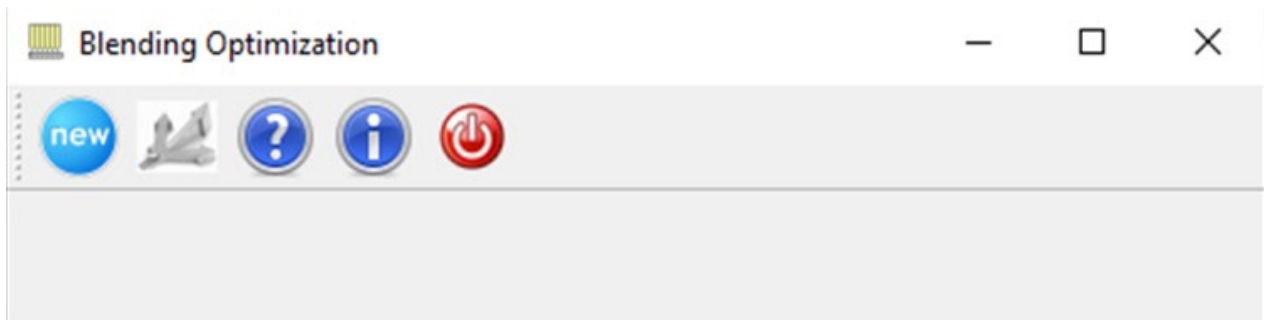


## Wheat and Flour blending optimization



This button to start new blend optimization.



This button when starting is not active, it is activated after starting new blending. It is to find optimum solution



This button to display this user guide.




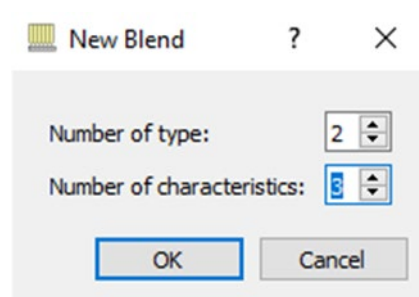
This button to display the about the program window.



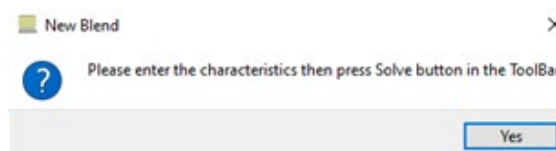
This button to exit from program.

## New blend optimization

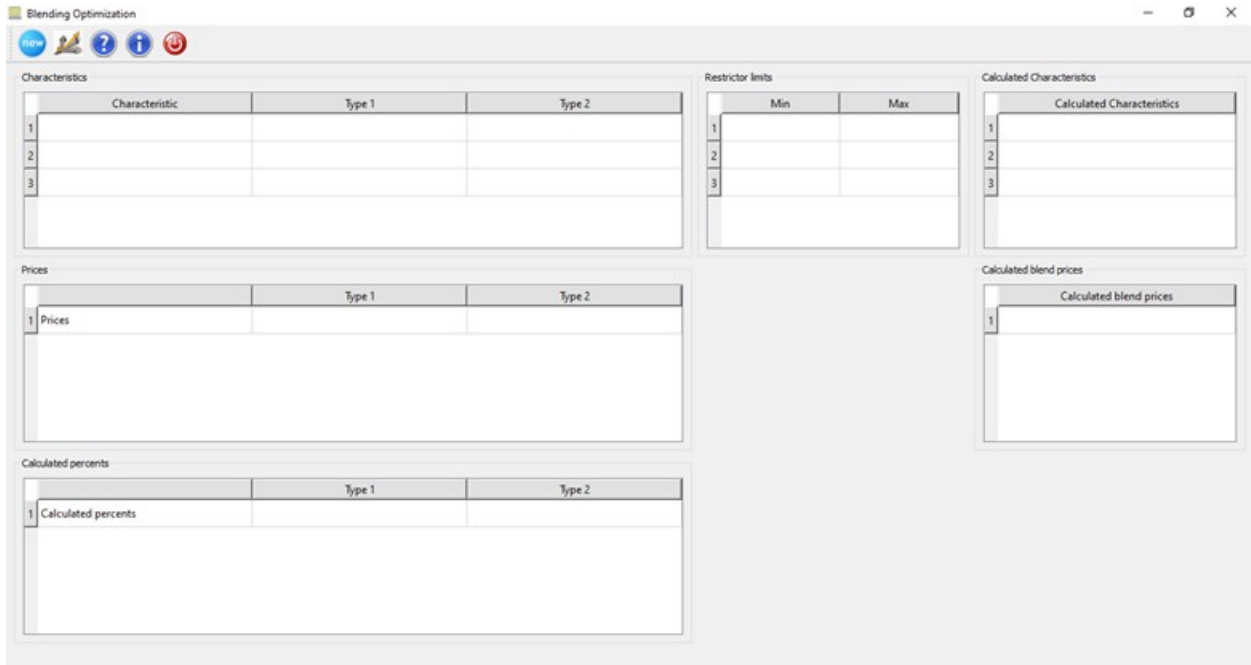
To start new blend optimization press  button. First you have to enter number of stream you want to mix and number of characteristics of these streams.



After entering Number of type and number of characteristics press OK, following dialog will displayed.



After pressing Yes button the following tables wil displayed.



Example:

Two types of flour have the following charactersitcs

|                  | Type 1 | Type 2 |
|------------------|--------|--------|
| Gluten           | 30     | 22     |
| W                | 356    | 141    |
| Water absorbtion | 60     | 55     |
| Price            | 250    | 210    |

To produce flour with these characteristics with minimum price.

|                  |         |
|------------------|---------|
|                  |         |
| Gluten           | Max 27  |
| W                | 225-250 |
| Water absorbtion | Min 57  |

We have to enter the data us in the following figure

Blending Optimization

| Characteristic      | Type 1 | Type 2 |
|---------------------|--------|--------|
| 1 Gluten            | 30     | 22     |
| 2 W                 | 356    | 141    |
| 3 Water Absorbation | 60     | 55     |

| Restrictor limits | Min | Max |
|-------------------|-----|-----|
| 1                 | 0   | 27  |
| 2                 | 225 | 250 |
| 3                 | 57  | 0   |


| Calculated Characteristics |
|----------------------------|
| 1                          |
| 2                          |
| 3                          |

| Prices   | Type 1 | Type 2 |
|----------|--------|--------|
| 1 Prices | 250    | 210    |

| Calculated blend prices |
|-------------------------|
| 1                       |

| Calculated percents   | Type 1 | Type 2 |
|-----------------------|--------|--------|
| 1 Calculated percents |        |        |

Not: for max or min limits we have to enter "0" on the other limit.

After entering the characteristic of wheat or flour types enter the prices. Then press  button to find the optimum mixing percents of types. For our example the following figure show the optimum mix which is 51% for type 1 and 49% for type 2 and the minimum price is 230.

Blending Optimization

| Characteristic      | Type 1 | Type 2 |
|---------------------|--------|--------|
| 1 Gluten            | 30     | 22     |
| 2 W                 | 356    | 141    |
| 3 Water Absorbation | 60     | 55     |

| Restrictor limits | Min | Max |
|-------------------|-----|-----|
| 1                 | 0   | 27  |
| 2                 | 225 | 250 |
| 3                 | 57  | 0   |

| Calculated Characteristics |
|----------------------------|
| 1 26.05581395348837        |
| 2 249.99999999999997       |
| 3 57.53488372093024        |

| Prices   | Type 1 | Type 2 |
|----------|--------|--------|
| 1 Prices | 250    | 210    |

| Calculated blend prices |
|-------------------------|
| 1 230.27906976744185    |

| Calculated percents   | Type 1 | Type 2 |
|-----------------------|--------|--------|
| 1 Calculated percents | 51     | 49     |

In some situation the program can not fine any optimum solution because the limits of restrictors do not allow to find a possible mixture. For example, if we enter the max gluten 25 the program will give a message like this.

