

Corbion® *Listeria* Control Model 2012

Introduction This User Guidance document will help you navigate through the Corbion® *Listeria* Control Model 2012.

This guidelines document supports usage after signing in to the model. The model can be accessed by going to www.corbion.com/lcm

Please make sure to read the 'best practices' before using the model. You can download this document on every page of the *Listeria* Control Model.

Starting page On the entry page three choices can be made: **Sign in**, **Register** or **Basic trial** (Try now). The table gives an overview of the functionalities available for both versions. Both versions, the full *Listeria* Model and the Basic trial version, are at your disposal any time you visit our website.



Corbion® *Listeria* Control Model 2012

Welcome to the Purac® *Listeria* Control Model 2012

E-mail address

Password

[I forgot my password](#)

[Sign in](#)

[Try now](#) [Register](#)

	Basic trial version	Listeria Control Model
Cured meat	✓	✓
Uncured meat	✓	✓
Refrigerated foods	✓	✓
Standard Purac products	✓	✓
Newest Purac solution	✓	✓
Clean label solutions	✓	✓
Moisture content	✓	✓
Temperature	✓	✓
pH	✓	✓
Nitrite level	✓	✓
NaCl	✓	✓
KCl	✓	✓
Adjust water activity		✓
Adjust graph		✓
Lag phase correction		✓
Detailed growth rates		✓
Detailed report		✓
Purac support		✓

Contact us >
 Sample request >
 Keep me updated >
 Inform a colleague >

Downloads

Best Practices
 User guidelines

Register to get full access. You will receive an e-mail containing the password you can fill in on the left of the entry page.

Sign in with the acquired password and you will proceed to the model.

Select the **Basic trial** and get a glimpse of what the model can do for you.

Supporting tabs

The top of the page displays several tabs which support the use of the model online. A new window will open when you click on one of the tabs, so you can access the content during use of the model.



Home will take you to the Corbion website home page.

'Listeria control model' is the model's tab.

Product info provides descriptions and downloads of the Corbion products used in the model.

FAQ is an extensive list of frequently asked questions, which is the primary source of support when using the model. If you have additional questions feel free to contact Corbion for support of one of our experts or representatives.

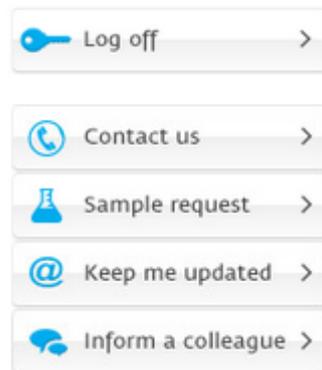
Disclaimer shows the terms and conditions which you have accepted prior to usage.

About us provides a general overview of Corbion and what we can do for you.

Contact shows an overview how you can contact Corbion in every region.

Quick menu

The quick menu is designed to perform some general swift actions and is always available for use.



'Log off' to exit the model. Closing the webbrowser will automatically log off your account.

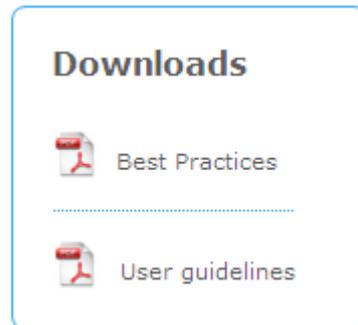
With **'Contact us'** you can leave a question, and a Corbion representative will contact you.

'Sample request' allows you to directly request a sample of the product of interest. For more information about products, see the tab 'Product info'.

'Keep me updated' is to subscribe to the Corbion newsletter. This way you'll - always be up to date with the latest model developments and Corbion activities.

'Inform a colleague' allows you to send a mail to another person to advice - the use of this model, with a personal message.

Downloads This section provides documents which can be directly downloaded to support use or provide background information.



Step 1: Region & Foodtype You now entered the model. The blue lined area is where you can enter data or select settings.

Select the **region** where your company is located.

Select the **food type** of interest: cured meat, uncured meat or - refrigerated food.

Specify a **product name** for your application. This will be used in the PDF file which contains the detailed results of your prediction.

Click on '**Next**' to go to step 2 and enter the food characteristics.

Step 2: Food Characteristics Specify the product characteristics based on total product formulation, before addition of Corbion products. Please fill in as many food characteristics as possible.

Food characteristics:

Moisture level is the amount of water in the product, expressed as volume percentage.

pH is the acidity level of a product after cooking.

NaCl and **KCl** are the sodium and potassium salt of chloride, expressed as volume percentage.

Sodium nitrite level is ppm of total product formulation. Please recalculate addition level when you are using meat block concentrations.

The **water activity** is relative availability of water. If unknown, the activity can be calculated by ticking on the 'calculate my water activity' box. The default value of the model (0.993) will be used to calculate water activity according to the entered food characteristics.



The microorganism data:

The **initial level** projects an amount of *Listeria* bacteria (in log CFU) at day 0.

The **maximum allowed level** marks the amount of *Listeria* (in log CFU) which you want to prevent from occurring during shelf life.

Graph scaling is used to manually set the X-axis of the graph in days. e.g. if you enter 120 days, the X-axis will be 120 days in length, regardless of the predicted *Listeria* growth.

When left empty the model will automatically determine the length of the axis, according to the predicted growth.

Storage conditions:

Temperature is currently the only variable storage condition taken into account by the model. Please select Celsius or Fahrenheit as unit.

Please check all the entered data before clicking on '**Next**' to get initial prediction results in step 3.

Step 3: Model output

Step 3 shows a summary of the growth prediction and allows you to predict the effect of adding a Corbion product or changing salt levels.

Food characteristics :

This overview shows the data associated with the control product. The NaCl and KCl levels can be changed in the advanced settings.

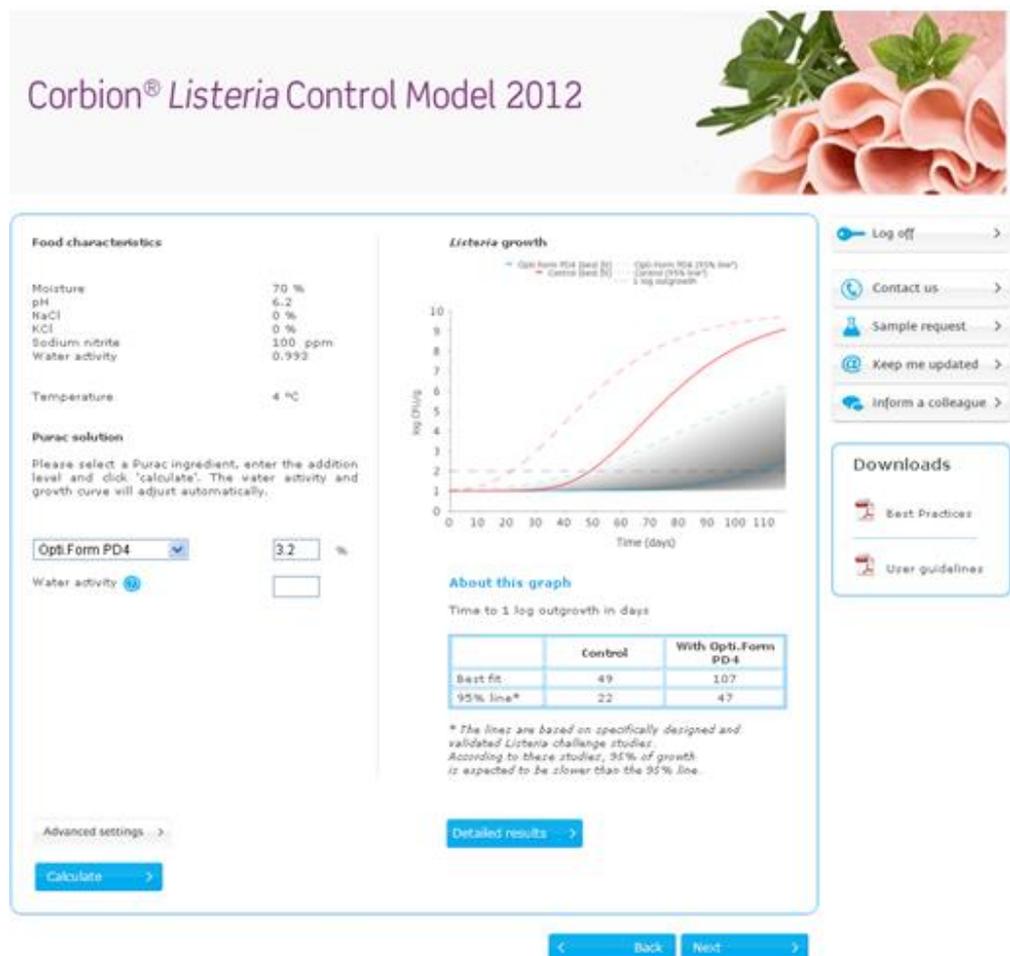
If you enter water activity below 'Corbion solution' on this page, the water activity shown here will automatically be recalculated.

Corbion solution

Please select the **Corbion product** of interest and enter the addition level. Click on '**Calculate**' to update the graph shown on the right. You directly see the predicted *Listeria* growth according to this formulation. Re-select a product or re-enter the addition level if the desired prediction is not achieved.

Water activity entered in Step 2 can be overwritten with a measured value of a known formulation. Enter a value and click on '**Calculate**' to use this value.

The '**Calculate**' button updates the prediction according to the all values entered in step 3.



Food characteristics

Moisture 70 %
 pH 6.2
 NaCl 0 %
 KCl 0 %
 Sodium nitrite 100 ppm
 Water activity 0.993
 Temperature 4 °C

Parac solution

Please select a Purac ingredient, enter the addition level and click 'calculate'. The water activity and growth curve will adjust automatically.

Opti-Form PD4 3.2 %
 Water activity

Listeria growth

log CFU/g vs Time (days)

Legend: Opti-Form PD4 (Best fit), Control (Best fit), Opti-Form PD4 (95% line)

About this graph

Time to 1 log outgrowth in days

	Control	With Opti-Form PD-4
Best fit	49	107
95% line*	22	47

* The lines are based on specifically designed and validated *Listeria* challenge studies. According to these studies, 95% of growth is expected to be slower than the 95% line.

Calculate

The graph shows the predicted growth of *Listeria* over time.

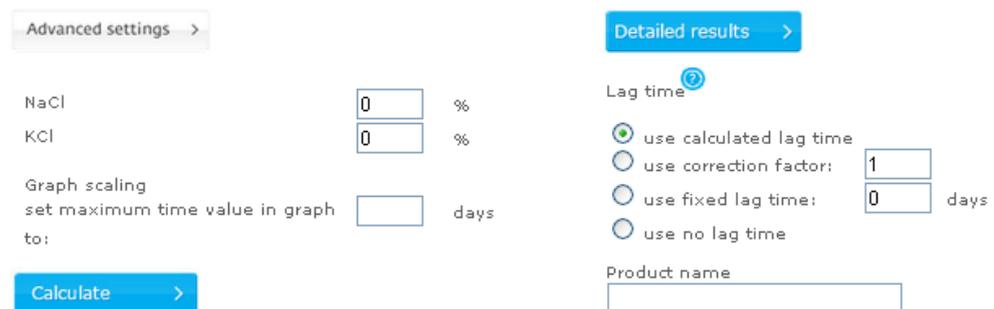
An explanation of the results can be accessed by clicking on the [‘About this graph’](#) link. The red lines represents *Listeria* growth based on the Food Characteristics entered in Step 2. The blue lines represent the predicted growth with the addition of Corbion product.

Below the graph a **summary of results** is shown. The number of days until the maximum allowed level is shown according to the best-fit line (shown in the graph) or according to the 95% line. Please make a well considered selection of these levels and consult the **‘Best practices’** document.

‘Detailed results’ will open a PDF report in a new window. This two page report provides an overview of the entered values, a description of the used product and a detailed description of the prediction. Explanation and definition of this report is provided inside the report and in the **‘best practices’**.

Advanced settings:

Allows you to re-enter the NaCl and KCl values of your formulation and overwrite the graph scaling. Click on **‘Calculate’** to adopt these changes.



The screenshot shows two panels. The left panel, titled 'Advanced settings', contains input fields for NaCl (0%), KCl (0%), and Graph scaling (set maximum time value in graph to: days). A blue 'Calculate' button is at the bottom. The right panel, titled 'Detailed results', shows 'Lag time' options: 'use calculated lag time' (selected), 'use correction factor: 1', 'use fixed lag time: 0 days', and 'use no lag time'. A 'Product name' input field is at the bottom.

The **lag time** can be adjusted. On basis of our extensive data set the predicted growth will start after a predicted lag time. However, your own dataset might show a different lag time than predicted by the model. This option allows you to overwrite the calculated lag time in three ways:

Fill in a **correction factor**. The correction factor is calculated by dividing the model’s predicted time (in days) till log 2 outgrowth, by the time in your own data till log 2 outgrowth.

Fill in **fixed lag time** in days as measured in your own data set.

Use **no lag time**.

Click on **‘Next’** to finish the calculation.

**Exit: Log off or start
a new calculation**



Corbion® *Listeria* Control Model 2012

Thank you for using the Purac® *Listeria* Control Model 2012.

Questions or remarks? Please do not hesitate to contact us, our modeling experts are eager to help you.
We hope to welcome you back soon.

[New calculation](#) [Log off](#)

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