



# Desugaring (Fermentation) of egg products: DSM solutions

# Glucose in eggs

## Glucose:

- Natural egg component
- Present in egg white at approx. 5 g/l

## Potential problems:

- Browning (Maillard reaction) during heating
- Glucose is a source for potential bacteria growth and contamination in liquid egg products

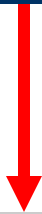
**=> Glucose needs to be removed prior to pasteurization, drying or storage**



# Glucose in eggs

## Techniques for de-sugaring egg products:

**Fermentation  
of glucose  
by yeast**



**Fermiol<sup>®</sup>  
Active dry yeast**

**Enzymatic  
conversion of  
glucose**



**MAXAPAL<sup>®</sup> GO4  
Glucose Oxidase**

**DSM solutions:**



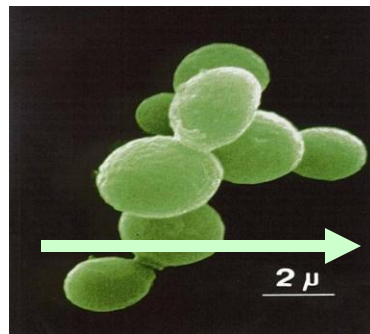
# Fermiol<sup>®</sup> - Fermentation process

- Relatively low ingredient costs (yeast, citric acid)
- Specific flavour and taste to the final product
- Store Fermiol cool (< 20°C) & dry, shelf life of 3 years

Process step 1; rehydrate the yeast:



*Pour yeast into preheated rehydration solution. Adjust pH and temp.*



*Leave yeast to swell for 20-30 min*

Process step 2; fermentation: Apply Fermiol to your batch of egg products to be fermented/desugared. Leave for a couple of hours and measure free glucose levels until all glucose is removed.

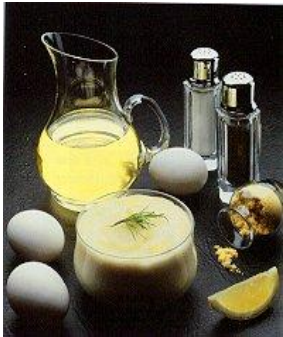


**DSM Food Specialties**  
*Egg Management, it's in your hands*

**Unlimited. DSM**

# MAXAPAL® GO4 – Enzyme conversion process

- After desugaring no special filtration step needed
- Reduced risks of micro-biological contaminations:
  - ✓ *lower temperature (10°C)*
  - ✓ *shorter reaction time*
- No special need for temperature control
- Complete desugaring achieved faster
- Safer process/final product



Process: Add sufficient MAXAPAL® GO4 to your egg product, mix it, add traces H<sub>2</sub>O<sub>2</sub> as activator, monitor the free glucose levels and proceed to your dryer as soon as glucose levels have dropped sufficiently.



# Yeast vs Enzyme desugaring of egg products

Fermentation

Enzyme treatment

**Yeast:**  
Smell  
taste  
5-8 hours



**Glucose Oxidase:**  
Better shelf life  
Reduction of infection risks  
No yeast smell  
< 5 hours

**For technical questions on these processes  
or products offered by DSM:  
[www.dsm-eggprocessing.com](http://www.dsm-eggprocessing.com)  
or call us at 0031-15-2792663**

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