

Berlin, 26. Januar 2009

# Product Carbon Footprint Pilotprojekt

## DSM Claristar™ wine stabiliser

Royal DSM N.V.  
Fokko Wientjes, Director Corporate Sustainable Development  
fokko.wientjes@dsm.com

PCF Pilotprojekt Deutschland  
c/o THEMA1 GmbH, Torstraße 154, 10115 Berlin  
Rasmus Prieß, priess@thema1.de, +49 30 7790 779 15  
[www.pcf-projekt.de](http://www.pcf-projekt.de)

### Projekträger



### Projektpartner



# Carbon Footprint of Claristar™ (wine stabiliser)



Unlimited. **DSM**

## The Company

DSM creates innovative products and services in Life Sciences and Materials Sciences that contribute to the quality of life.

## The Product

Claristar™ is a natural and highly effective ingredient for the prevention of tartrate crystals in wine.

## What exactly was assessed?

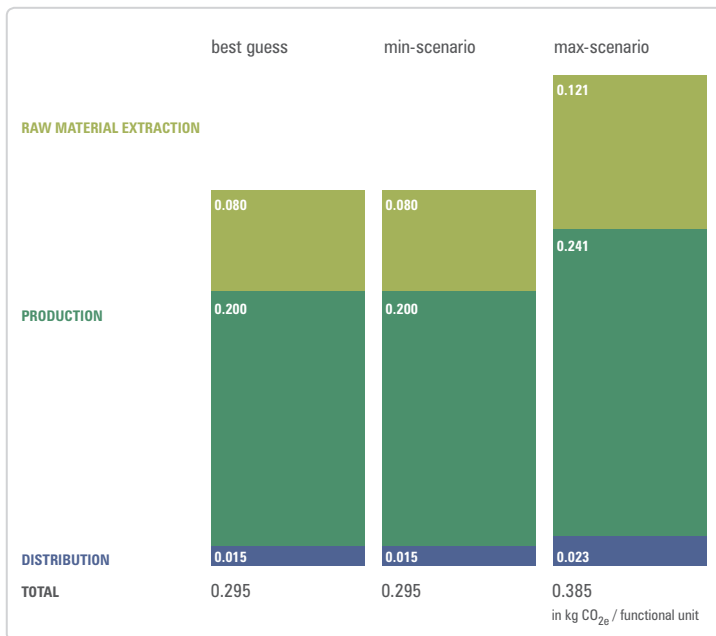
### System Boundaries

The impact on global warming of the Claristar™ production and distribution process was established.

### Functional Unit

Stabilisation of one hectolitre (100 litres) of wine

## What is the Carbon Footprint of Claristar™?



### RAW MATERIAL EXTRACTION

Molasses produced as by-product from sugar refinery and ammonia, sulphuric acid and phosphoric acid produced in chemical plants.

### PRODUCTION

Fermentation of molasses to produce yeast and extraction of Claristar™ from yeast cells.

### DISTRIBUTION

Distribution in 1000l containers by 32 ton truck to a typical wine maker in France.

### CONSUMER SHOPPING

Not applicable.

### USE PHASE

Adding a small quantity of Claristar™ to the wine.

### DISPOSAL

Not applicable.

## Where do most emissions derive from?

The emissions are dominated by the consumption of electricity and steam in the production process. Steam is required for sterilisation and cleaning of equipment and for heating purposes. Electricity is required for stirring and cooling in fermentation and for pumping in the extraction process.

## Which options for further reductions of emissions could be identified?

### a) within the company (reduction potential regarding the whole supply chain)?

The best options are to use energy with lower CO<sub>2e</sub> emissions, i.e. from renewable sources.

### b) with the consumer (recommendations to consumer)?

The most commonly applied technology is "cold stabilisation" which requires the wine to be cooled to -4° C and held for several days or even weeks. Energy consumption is associated with approx. 1 kg CO<sub>2e</sub> /hl wine\* (actual data will differ from one winery to another). Application of Claristar™, which does not require further energy use at the winery, can therefore reduce carbon emissions in this process by over 70% (life cycle perspective).

\*Wine production data were not confirmed as part of this PCF study because this would require too much time and an individual approach for each wine-maker.

## Is DSM planning further activities regarding product related climate protection?

Last year DSM started a Climate Change Induced Innovation program. This program responds to market needs following from global climate change and energy developments by developing new products in sectors such as renewable energy, transport, food/feed solutions and recyclable materials.

## What are the lessons learned for DSM through participation in the PCF pilot project?

We located "hot-spots" in our production process, and found ways to further improve the Claristar™ production process. More generally we learned a lot about PCF methodology and how to use it to stimulate innovation in new product development.

Most importantly we learned that the wine industry is highly receptive to the values of environmental benefits. Many wineries are active in similar programs and keen to engage in constructive dialogue.

“ Claristar™ allows winemakers to significantly reduce their carbon footprint without any compromise on product quality. ”