

SYMPOSIUM  
**PROEVEN VAN SUCCES 2012**

DE ROL VAN SMAAKONDERZOEK BIJ ZOUT-  
PROBLEMATIEK IN VOEDINGSMIDDELEN

Where consumer  
and product meet

# Salt reduction



What happened to the salty taste?

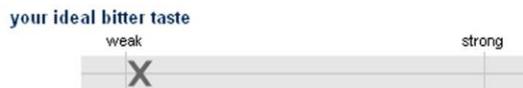
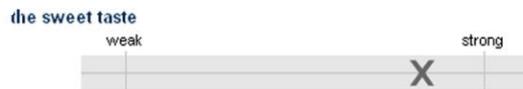
Senior projectmanager: Pieter Punter  
Projectmanager: Helga de Bruin  
OP&P Product Research  
Utrecht, The Netherlands

# More than a decade of soups

- in the period 1997-2011, approximately 80 “soup” projects have been carried out according to the Ideal Profile Method

## The Ideal Profile Method:

- 80-120 consumers taste a several of products and are asked to rate them on a number of sensory attributes (20-40 in general) and on several acceptance aspects including liking
  - they rate the perceived intensity (how strong is the sweetness)
  - they also indicate the preferred or ideal intensity on the same attributes



Next >>

Overall, how much do you like or dislike this juice sample?

Sample 351

- Like extremely
- Like very much
- Like moderately
- Like slightly
- Neither like nor dislike
- Dislike slightly
- Dislike moderately
- Dislike very much
- Dislike extremely

## More than a decade of soups

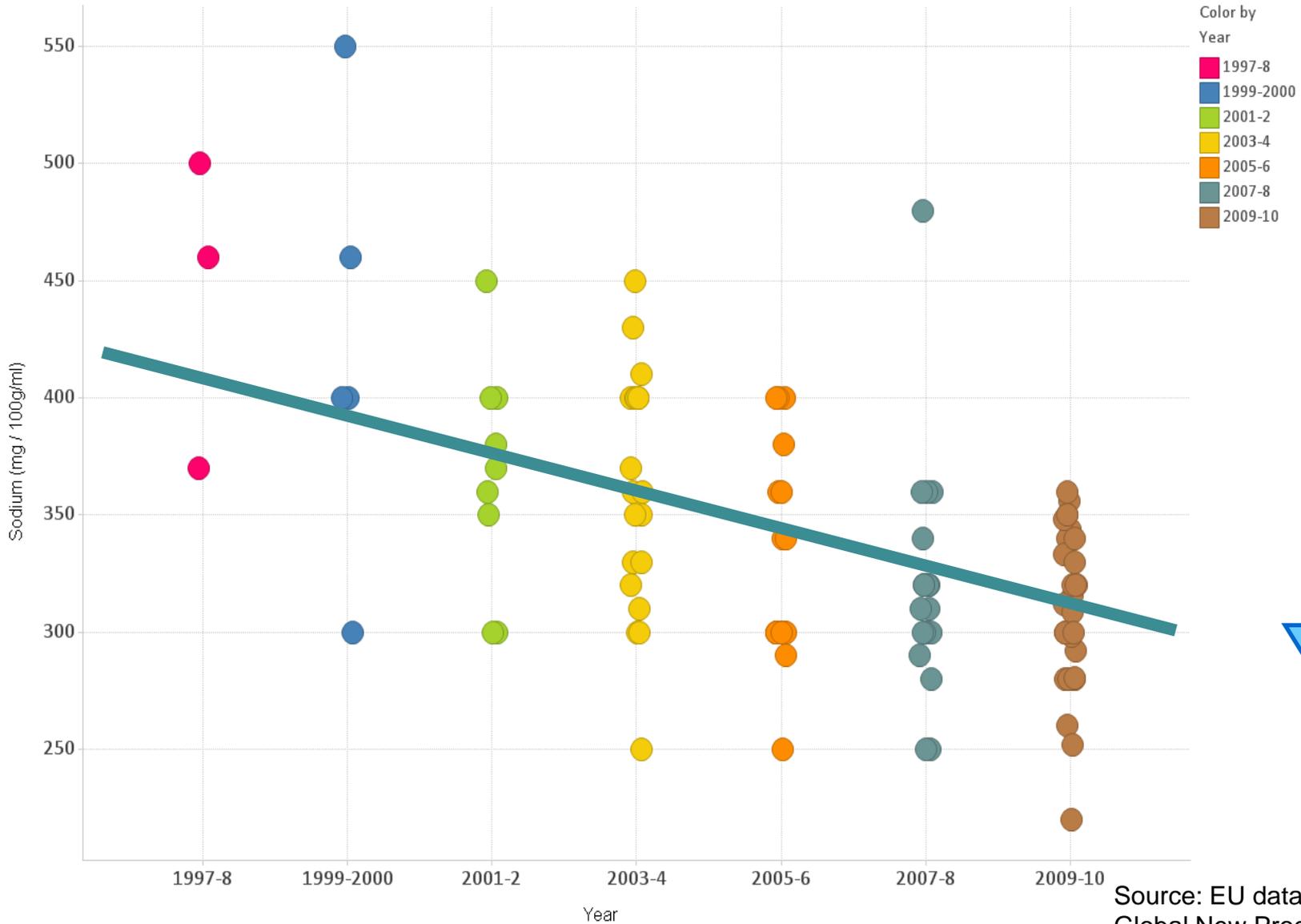
- in these 80 projects, in total 690 different soups for different clients have been tasted
- in each project around 100 consumers participated
- around 70.000 individual ratings have been collected (on average 100 per soup)
- the soups were canned, pouch, instant, tablet or fresh in many different tastes
- between 1997 till 2007 a large number of soups have been tested for Unilever
  
- in all projects, perceived and ideal salt taste has been asked and in most projects perceived and ideal sweet-, bitter-, sour taste and taste intensity has also been asked
- in a large number of projects between 1997-2007, overall liking has been asked using a 7-point category scale, in the remaining projects overall liking has been asked using a standard 9-point category scale

## Soup and salt

- salt is the most efficient and cheapest compound to improve the taste of savoury products
- for that reason, the food industry has used (and still uses) this compound eagerly
- in contrast to sugar, there is no simple replacement for salt
- excessive usage of salt is causing serious health problems and poses similar threads as obesitas
  
- in the past decade, there has been a strong urge to reduce salt in our food, both from within the industry and from the European Union and the governments of different European countries
  
- the next two slides show the reduction in salt by Unilever and in the industry in general in the past decade\*
  
- \* *courtesy of Johanneke Busch Unilever Vlaardingen*

# Sodium levels of newly launched Unilever 'wet' soups (n=107) regression line drawn by hand (php)

Unilever European GNPD launches



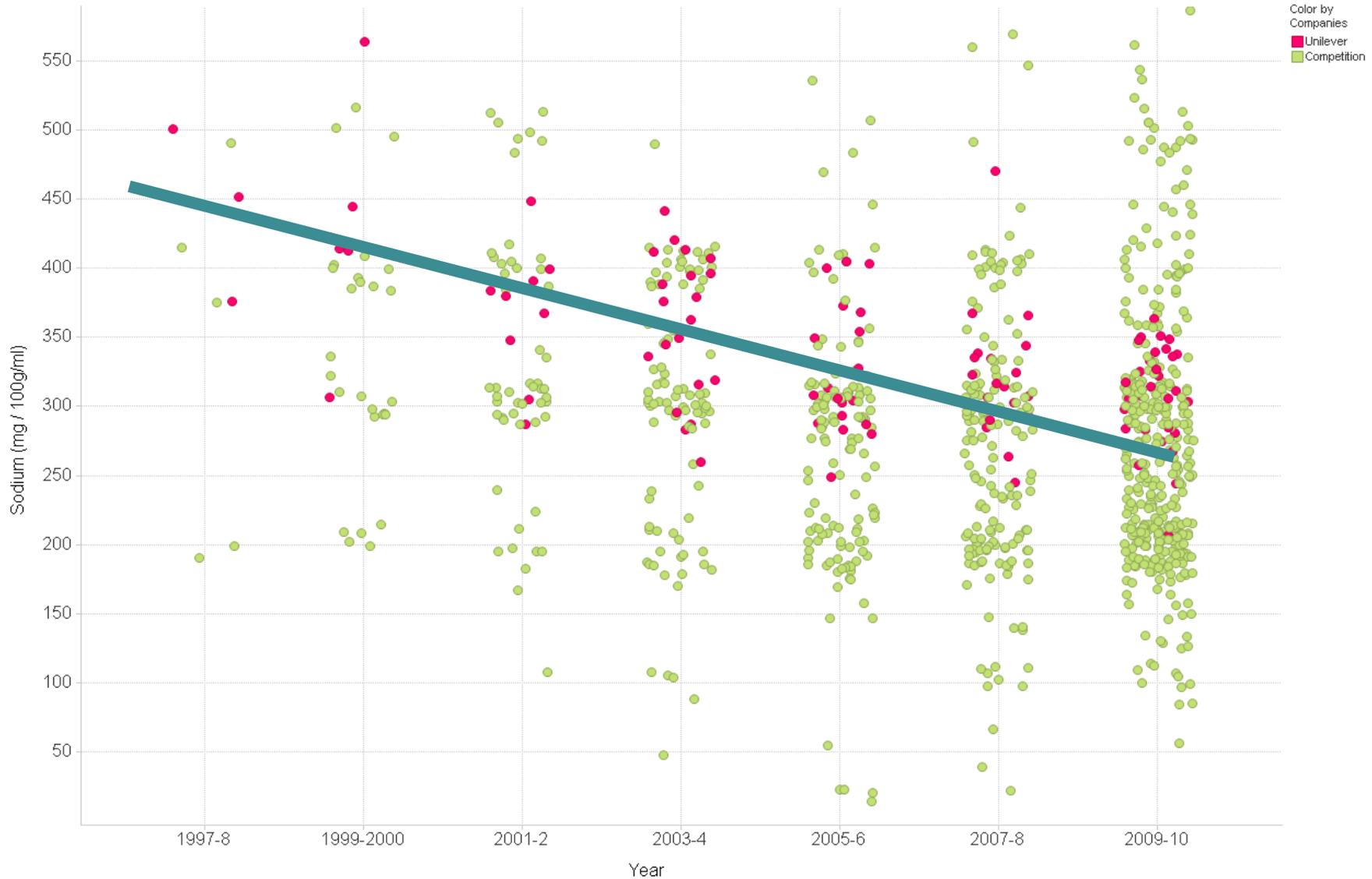
Source: EU data from  
Global New Product Data Base

# The good news: market is also moving

Sodium levels in all new wet soups on EU market (1997-2010)

n=966

European GNPD launches

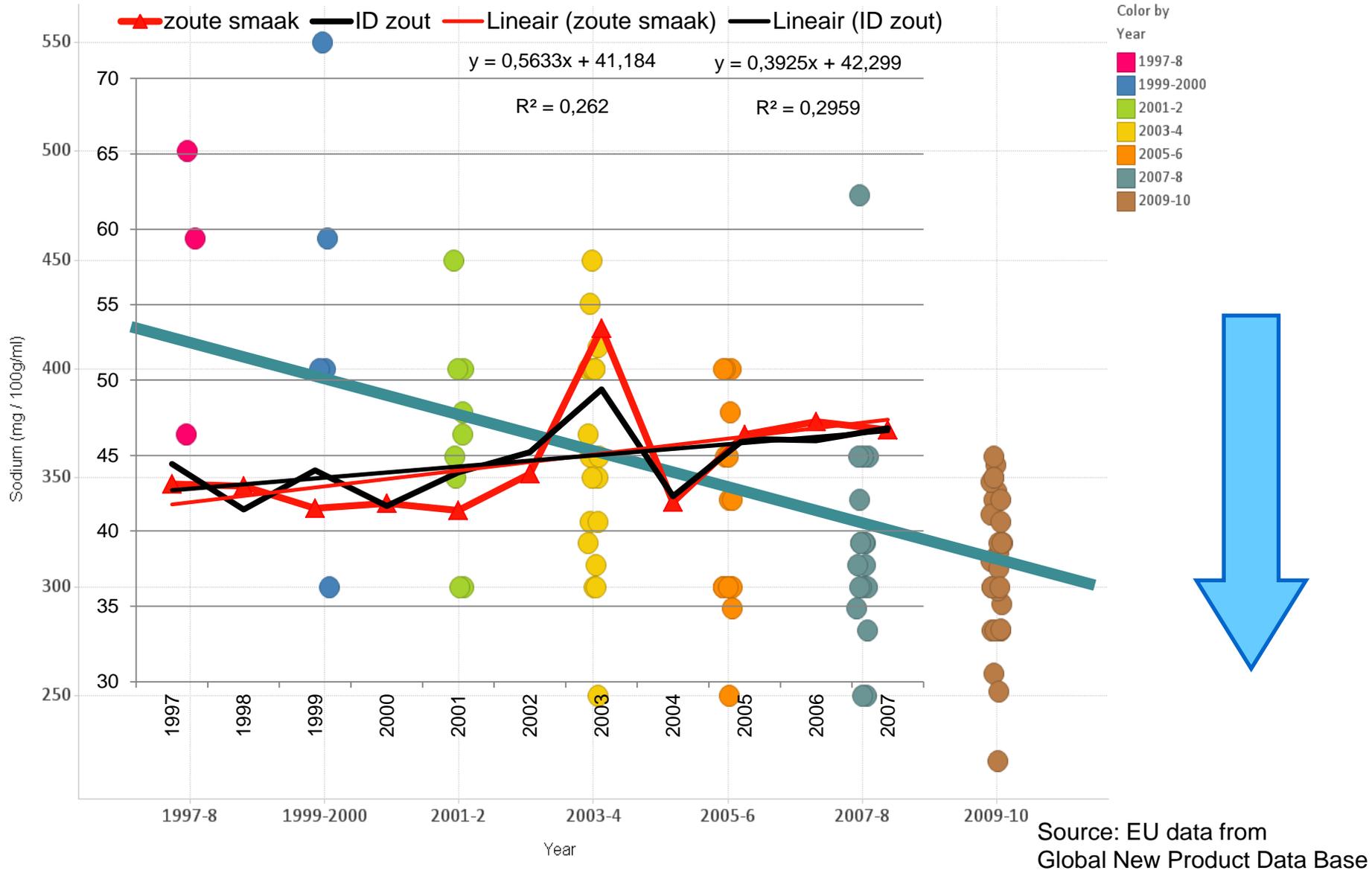


## Salt reduction in soups over the last decade (2)

- there is clearly a significant reduction in the salt content of soups, both from Unilever and from the food industry in general
  - » so we can expect that the perceived saltiness in soups also shows a reduction over time
  - » a soup in 1998 should taste more salty than a soup in 2008 and it could deviate more from ideal
  - » let's take a look at the perceived and ideal saltiness in soups over the years

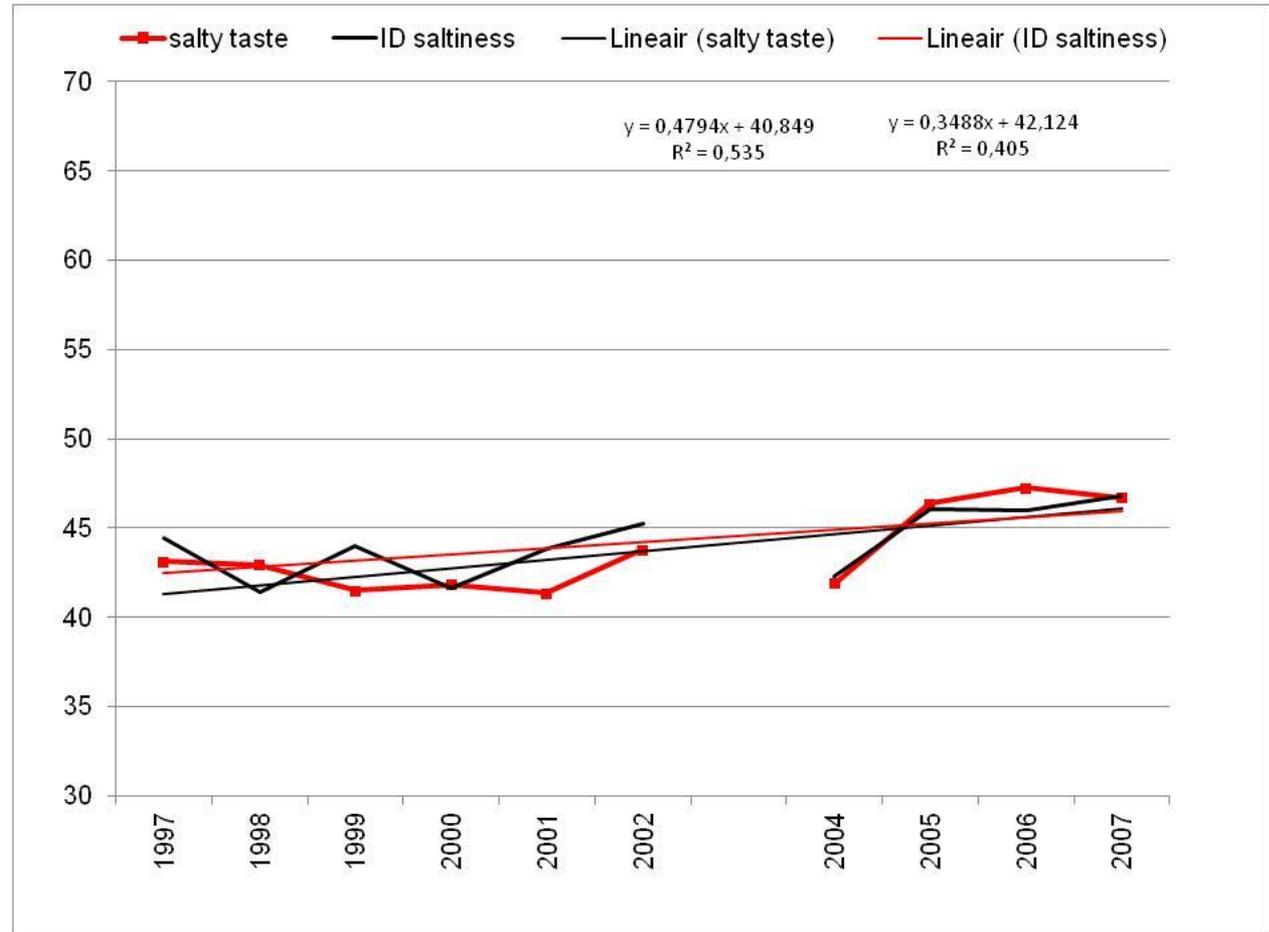
# Sodium levels of newly launched Unilever 'wet' soups (n=107) and salt perception

Unilever European GNPD launches



## Effect of the odd year (2003)

- there is still an increase in the perceived and ideal saltiness over the years when the odd year is removed
- also note that the perceived saltiness is closer to ideal over the years (the soups were perceived as too salt and they became more ideal)

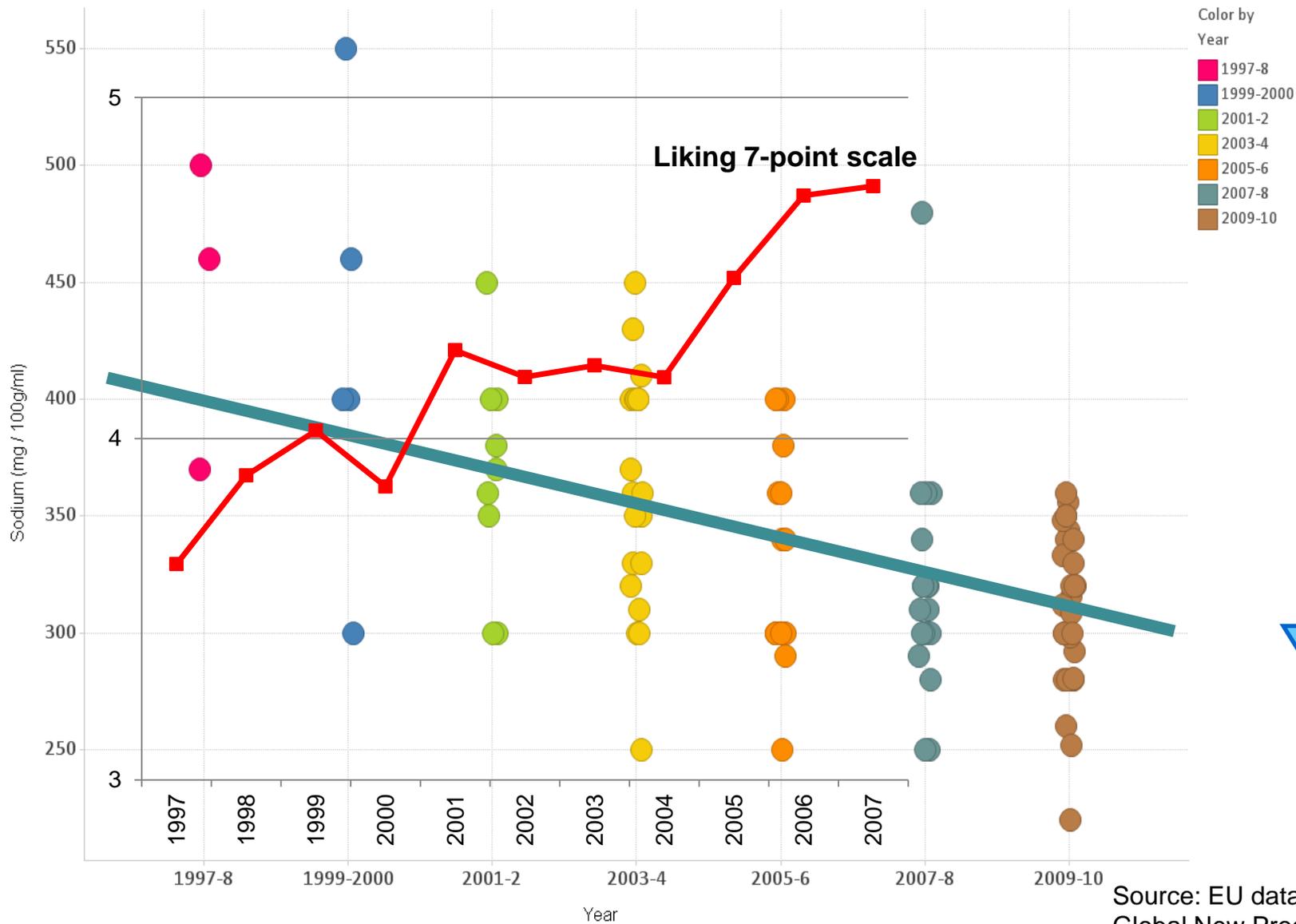


## Salty taste and ideal over time

- although there is considerable variation over the years, there is no sign of a reduction in the perceived salty taste or the ideal salty taste
- over the years, the perceived salty taste actually shows an increase and became closer to the ideal salty taste (which also increased)
- although the amount of salt in these soups has clearly been reduced, consumers do not perceive this as such:
  - less salt in the soup, but more salty taste
- *Note: consumers could not add salt to the soups themselves, they tasted the industry soups without additions*
- how can this be?
  - » the industry has found an alternative for salt similar to aspartame for sugar
  - » consumers are not able to assess the saltiness in complex mixtures
- so what happened to liking and to sweet, sour, bitter and taste intensity over the years?

# Sodium levels of newly launched Unilever 'wet' soups (n=107) and overall liking

Unilever European GNPD launches



Source: EU data from Global New Product Data Base

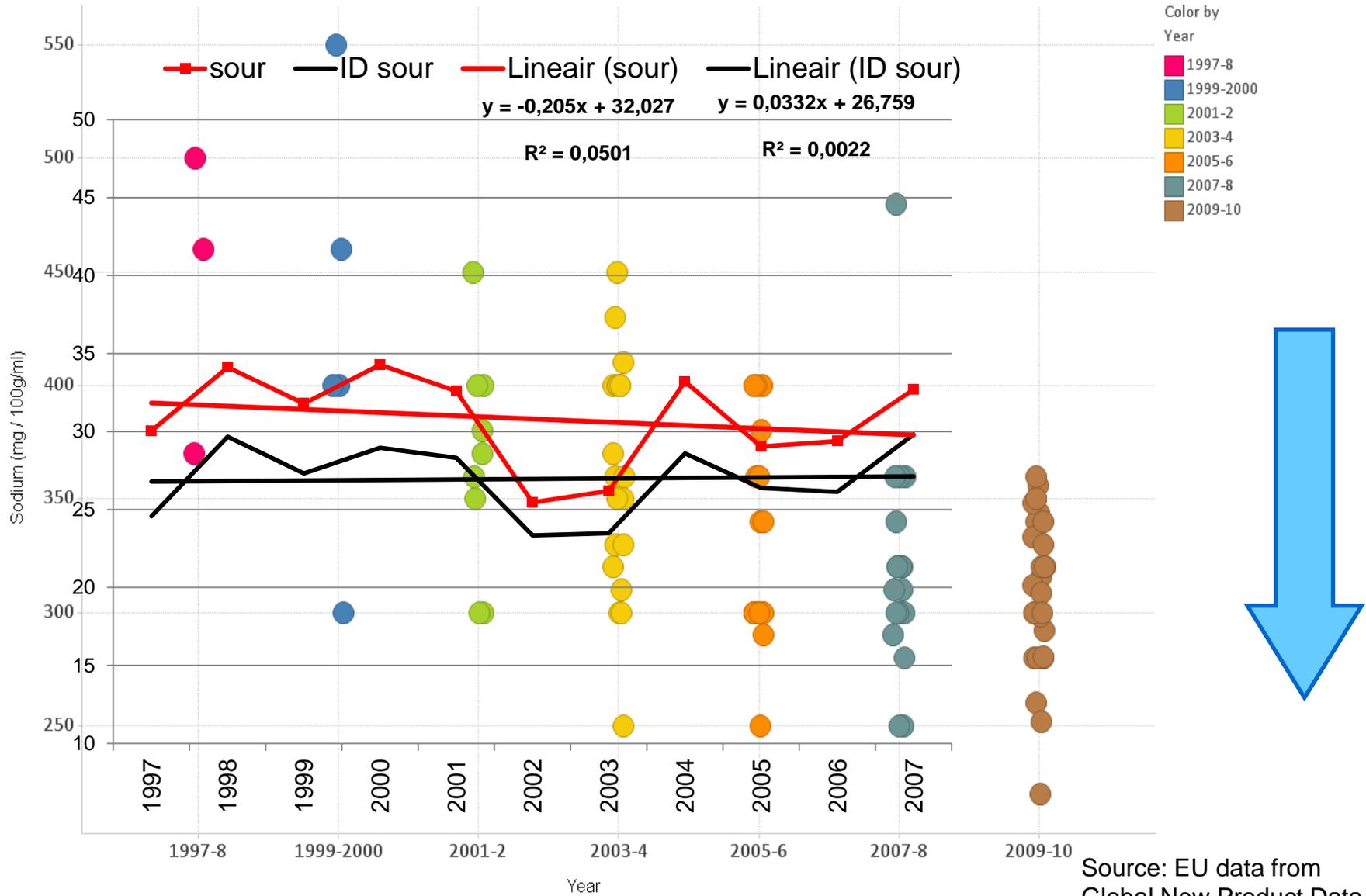
## Strong improvement in liking over time!

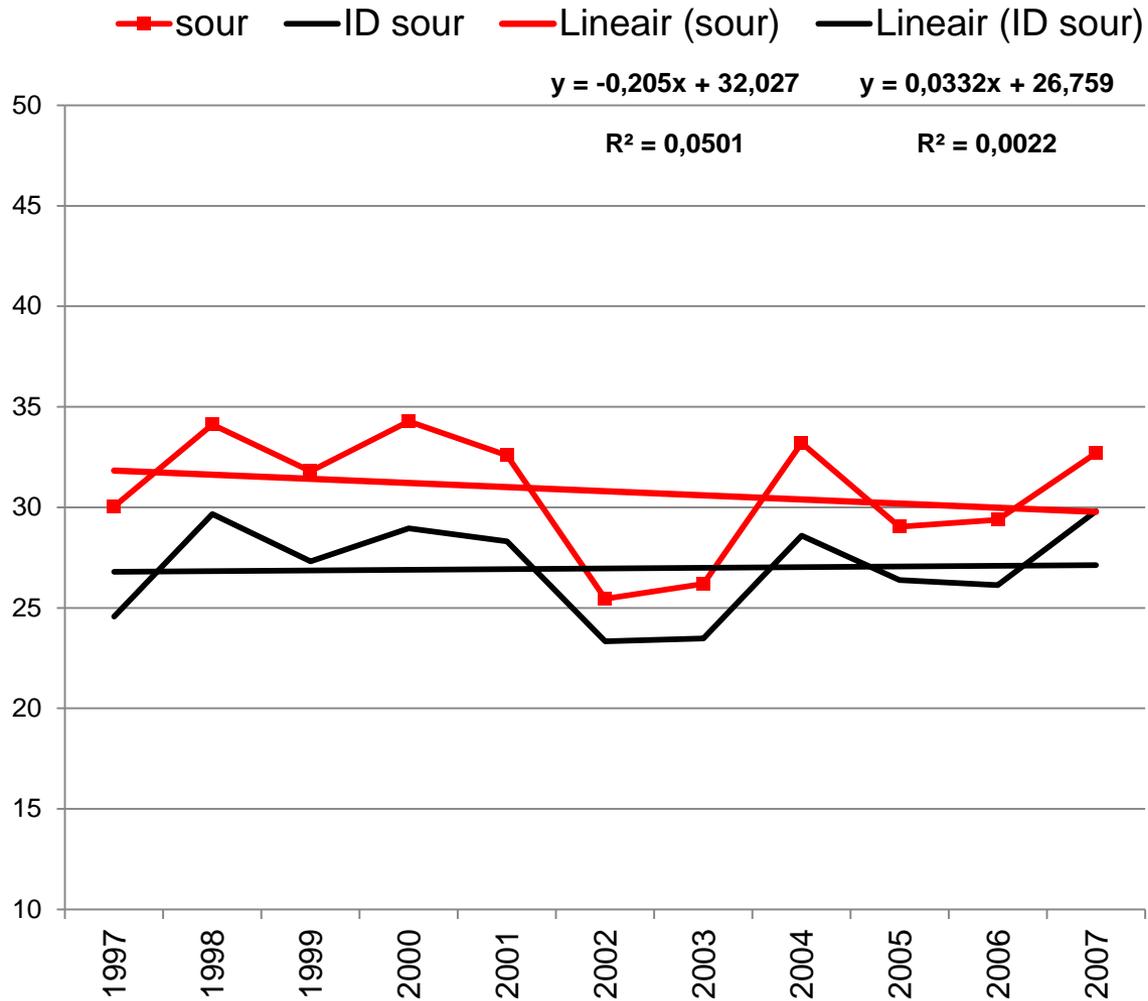
- there is a strong and highly significant increase in liking over the years for the Unilever soups
- this reflects an improvement in processing technology and in packaging (going from canned soups to pouches)
- it is unlikely that the salt reduction by itself had an effect on liking in this case

» what happened to sourness, sweetness, bitterness and taste intensity?

# Sodium levels of newly launched Unilever 'wet' soups (n=107) and perceived sourness

Unilever European GNPD launches

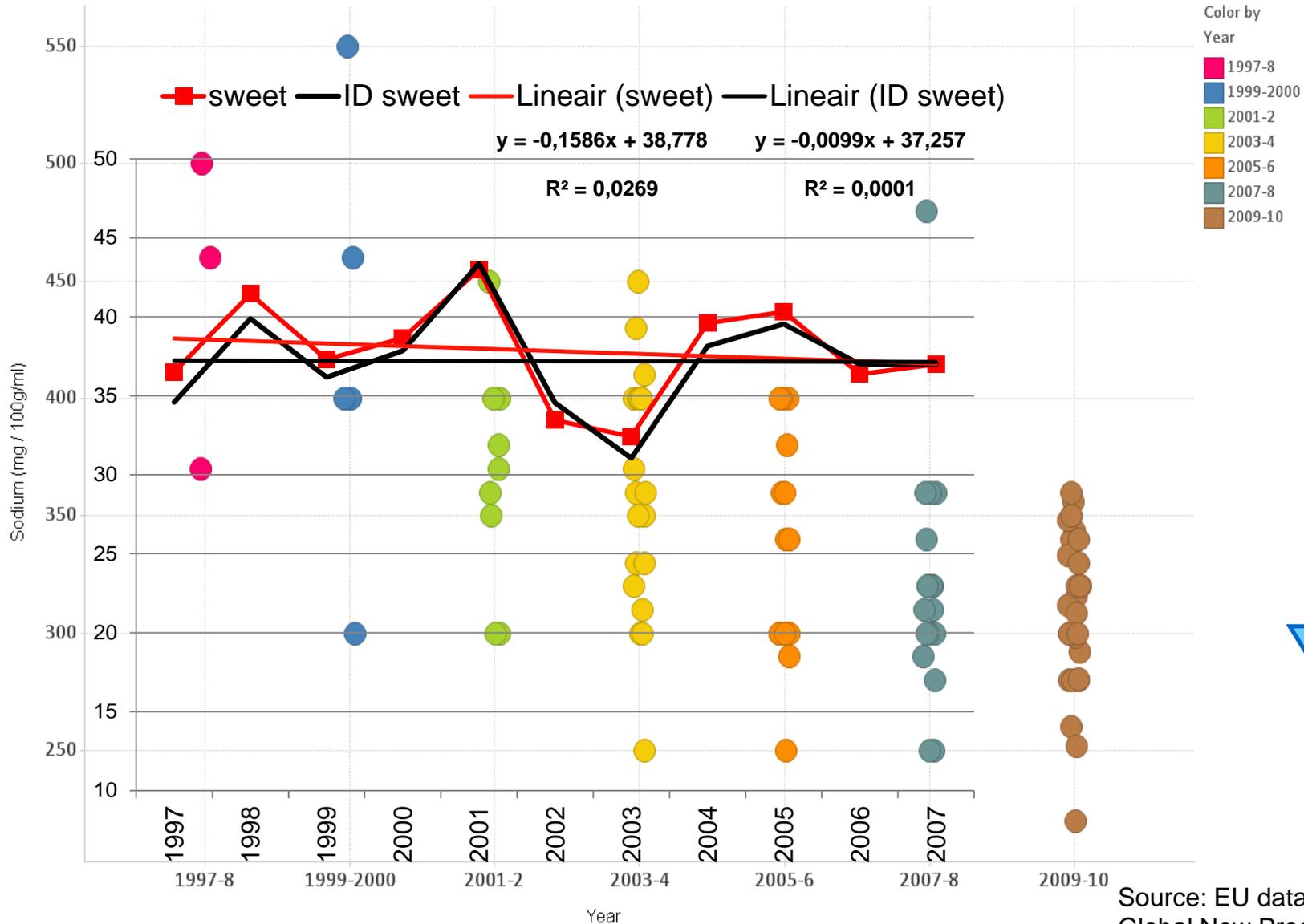




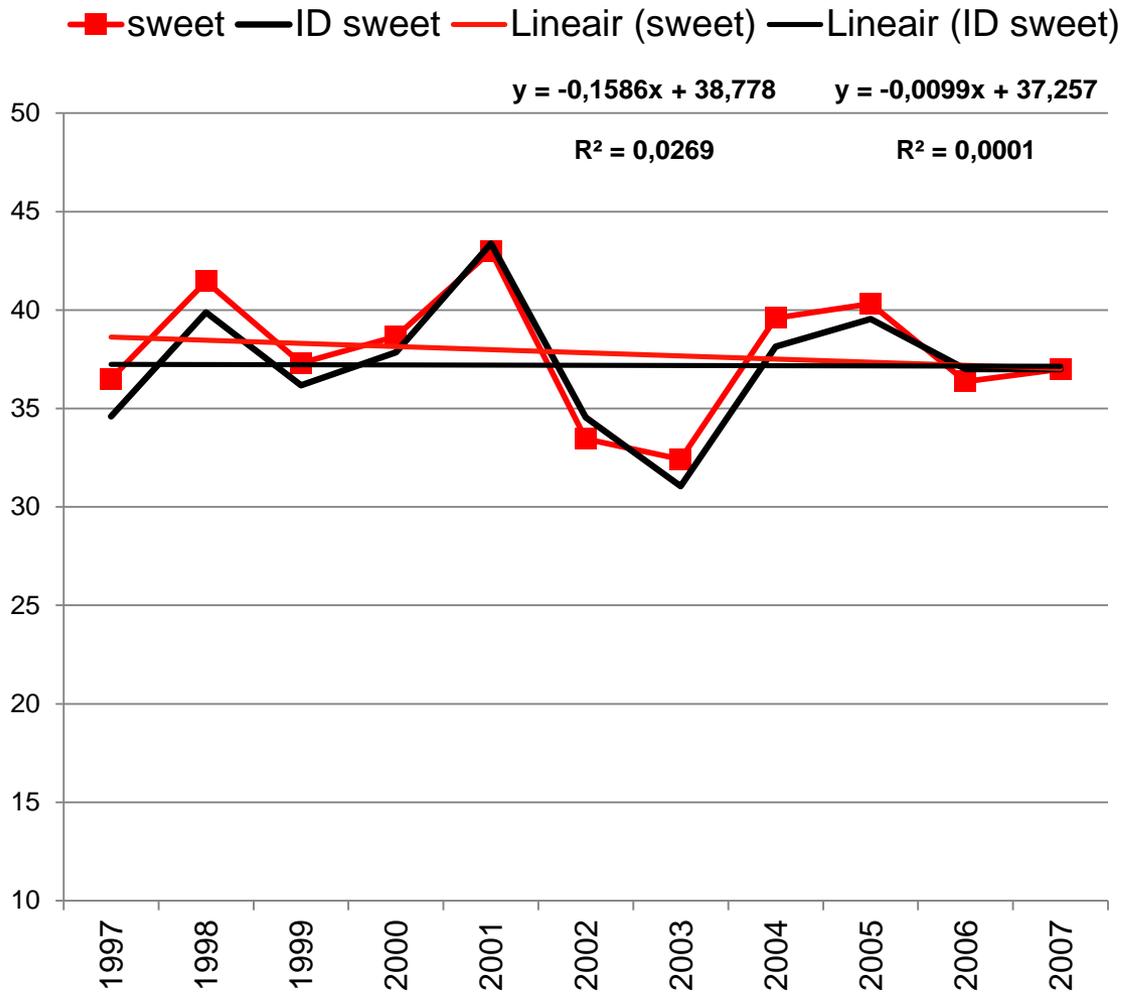
- the ideal sourness did not change over the years
- the perceived sourness decreased
- this is likely a consequence of improved processing

# Sodium levels of newly launched Unilever 'wet' soups (n=107) and perceived sweetness

Unilever European GNPD launches



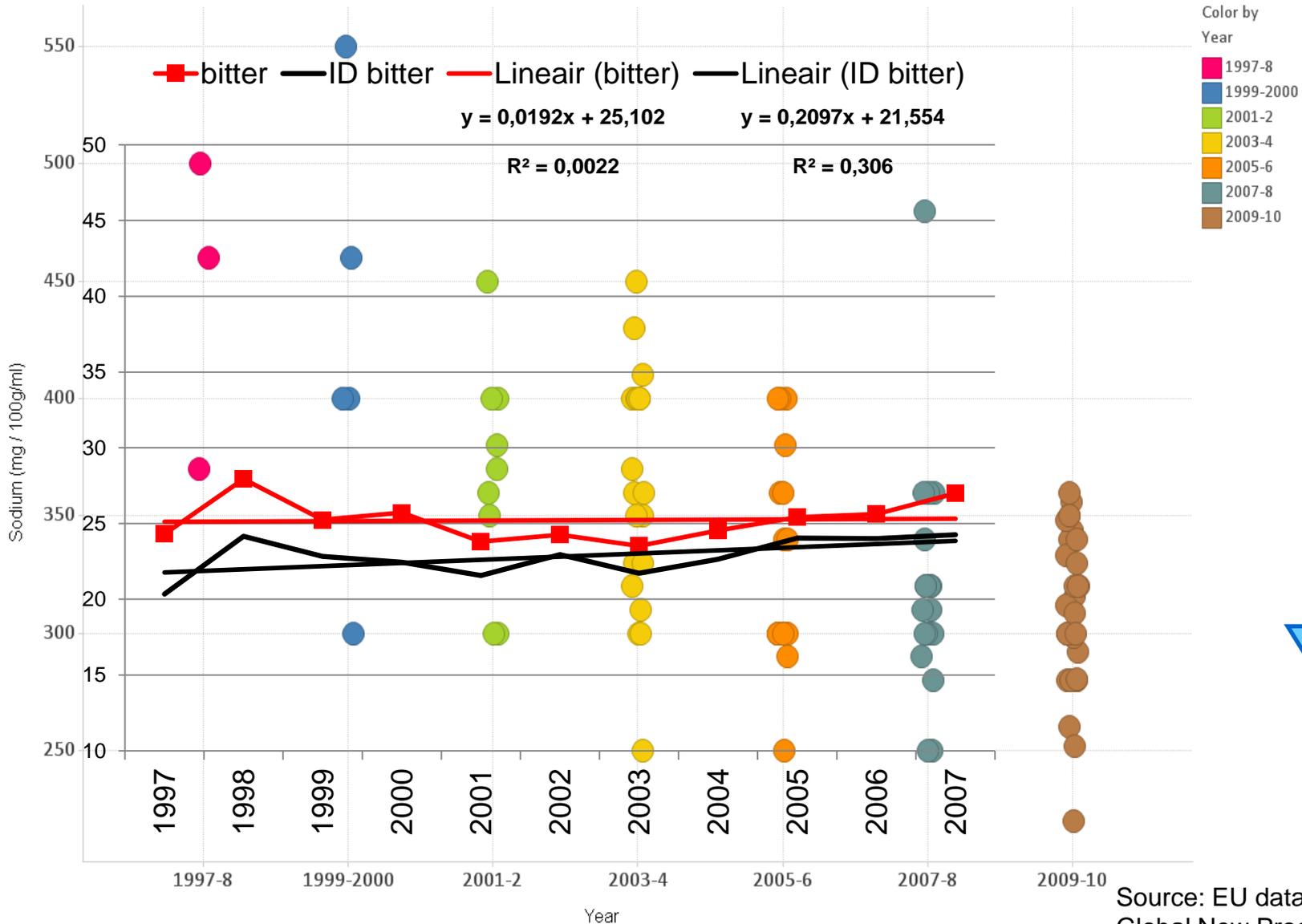
Source: EU data from Global New Product Data Base



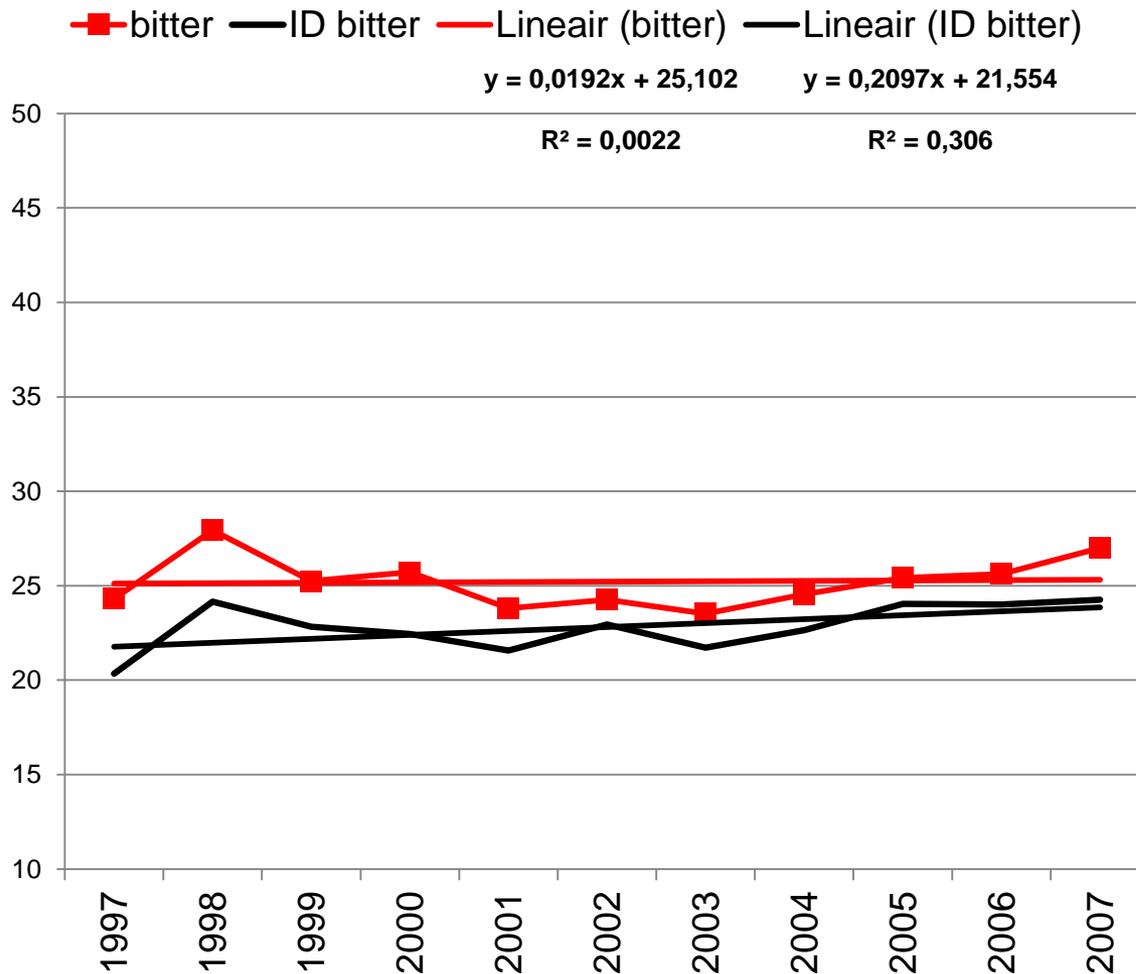
- the ideal sweetness did not change over the years
- the perceived sweetness decreased and reached the ideal level

# Sodium levels of newly launched Unilever 'wet' soups (n=107) and perceived bitterness

Unilever European GNPD launches



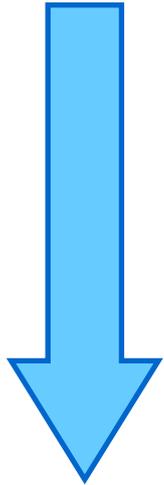
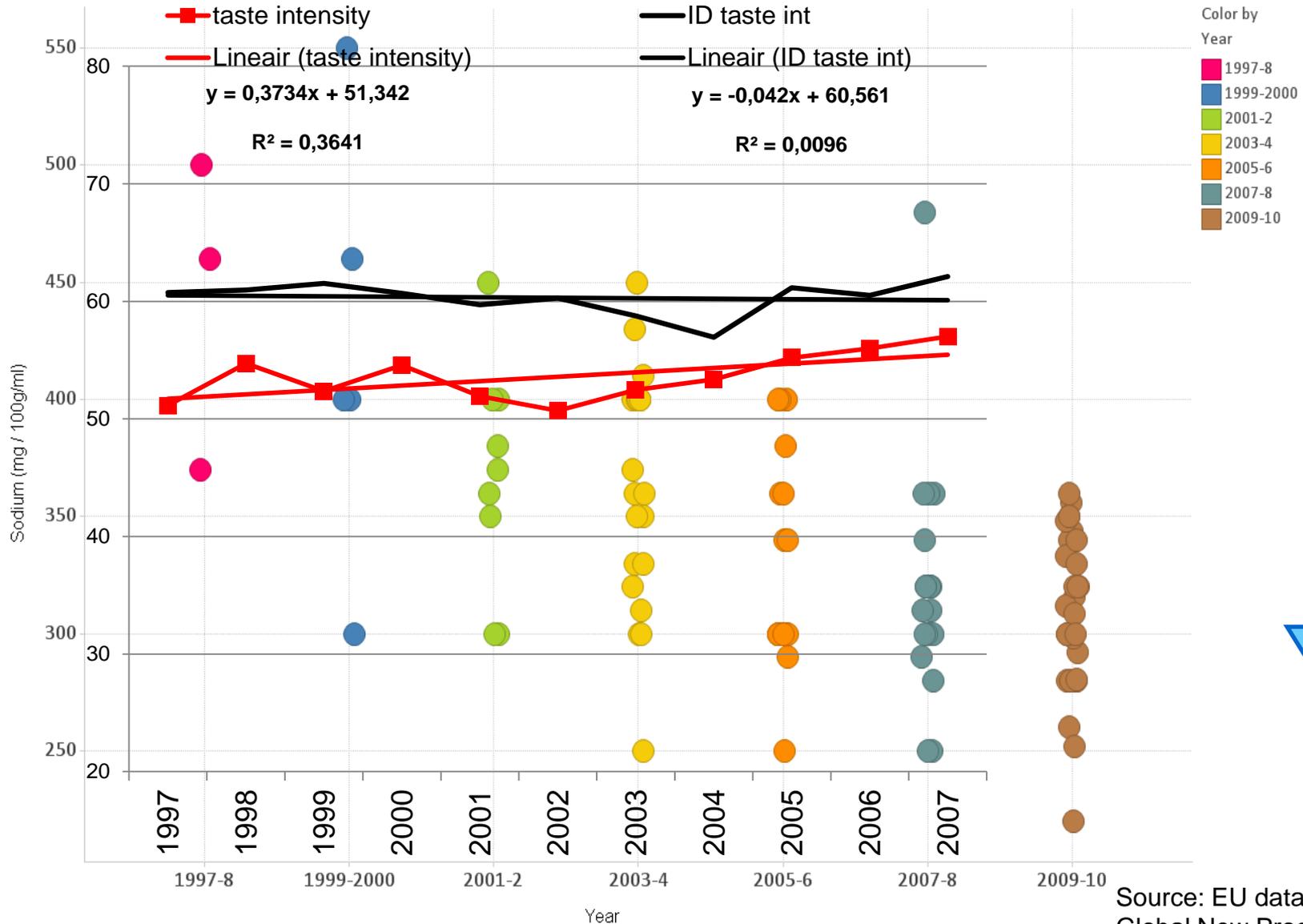
Source: EU data from Global New Product Data Base



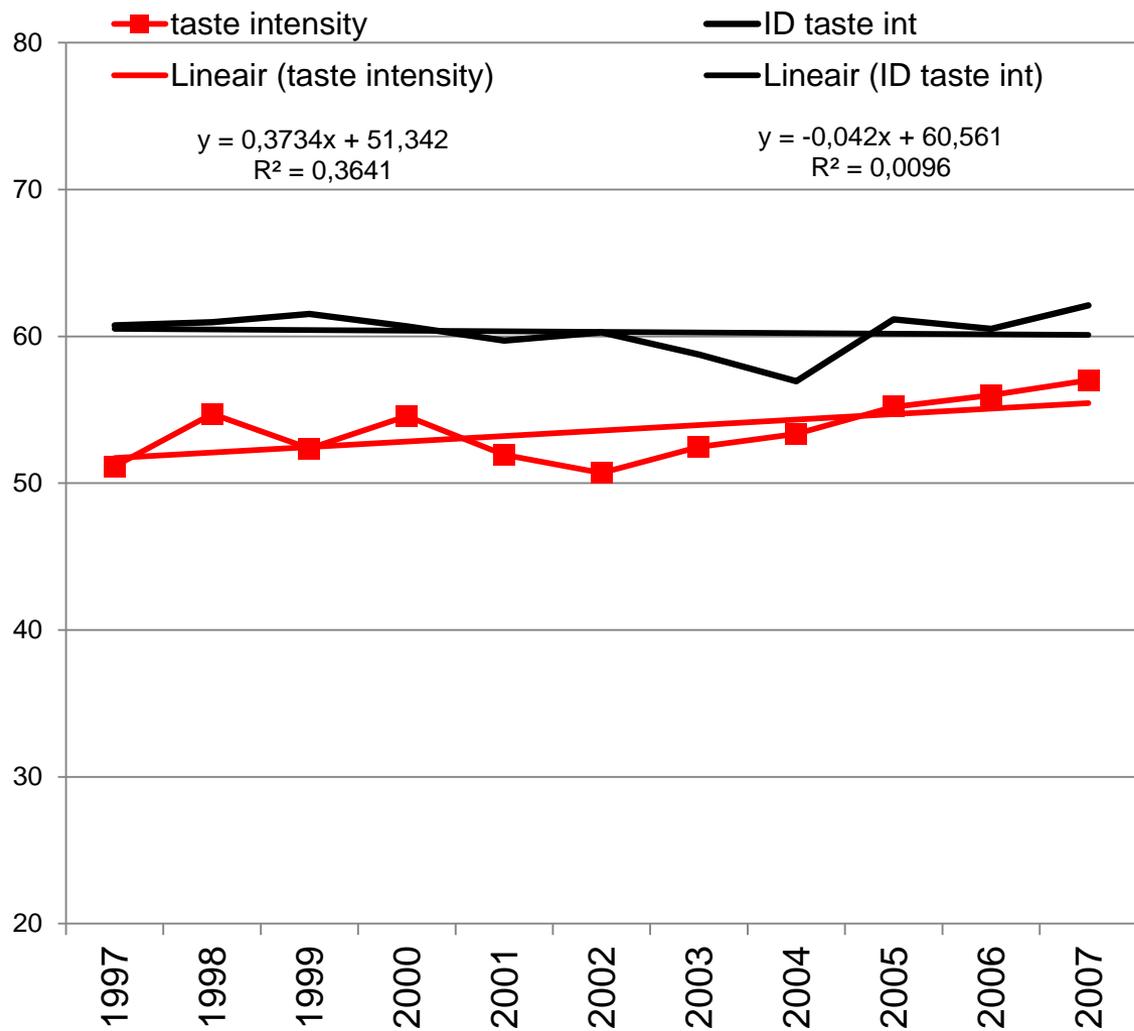
- the ideal bitterness actually shows an increase, consumers want more bitterness
- the perceived bitterness did not change, soups have kept the same bitterness

# Sodium levels of newly launched Unilever 'wet' soups (n=107) and perceived taste intensity

Unilever European GNPD launches



Source: EU data from Global New Product Data Base



- the ideal taste intensity does not show an increase over time
- the difference between the actual and ideal is quite large in this case
- over the years, consumers perceive more taste intensity
- so the taste of the soups is perceived as more intense although salt levels have decreased

## Changes in the soups over time

- in spite of the reduction in salt content, both perceived saltiness and ideal saltiness seems to have increased, but perceived stayed very close to ideal
- perceived sourness decreased and became closer to ideal (this is probably a technology improvement), the ideal level did not change over time
- perceived sweetness also shows a small decrease and stayed very close to ideal, the ideal level did not change over time
- the perceived bitterness did not change (soups still are slightly too bitter), but the ideal for bitterness shows a small increase over time, consumers adjusted their ideal for bitterness
- perceived taste intensity shows an increase over time but is still far from ideal, the ideal level did not change over time
- although the salt content decreased, salty taste and taste intensity increased

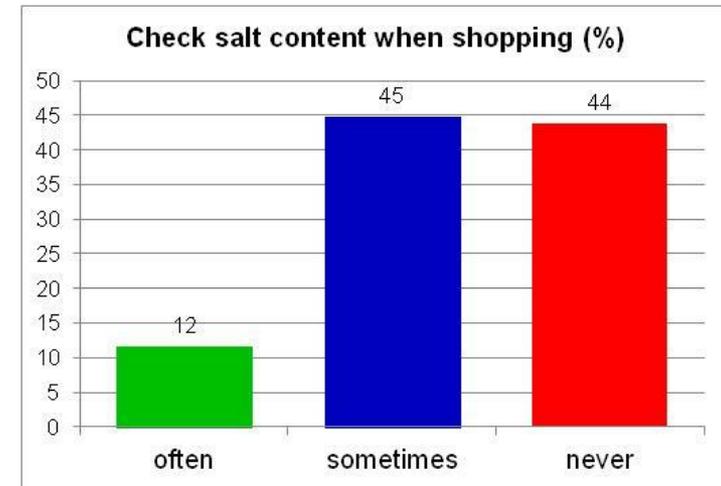
➤ *what is happening in the consumer mind when salt is involved?*

## What do consumers know about salt?

- we interviewed about 900 consumers through an internet questionnaire about their salt perception and usage of salt (+ additional questions)
- the first part of the questionnaire is a copy of the salt questionnaire from Deakin University:
  - » *Consumer understanding of salt: Effects on health and food labeling 8 of 8 Deakin University: School of Exercise and Nutrition Sciences 10/21/2009*
- the second part is a series of questions about salt, the usage of salt and the ideas consumers have about changes in the taste of their food

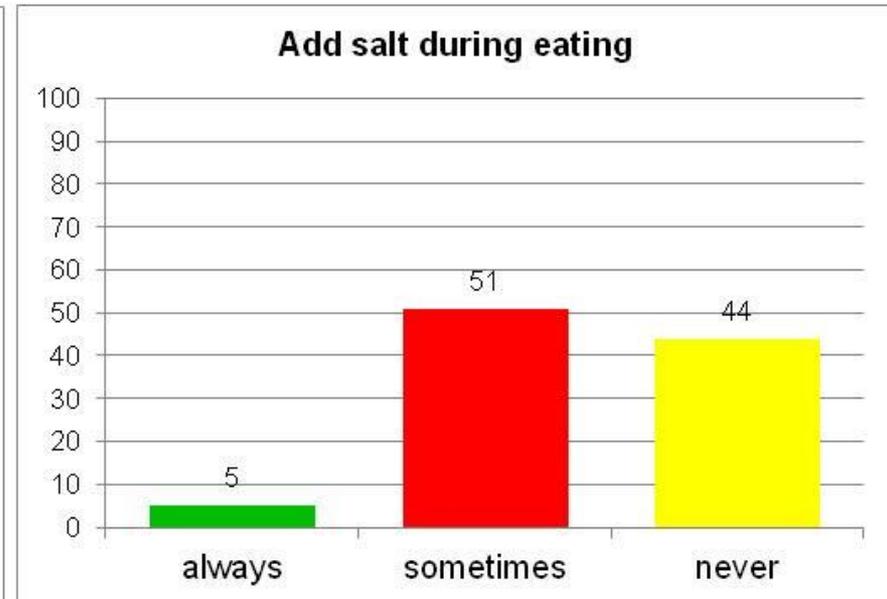
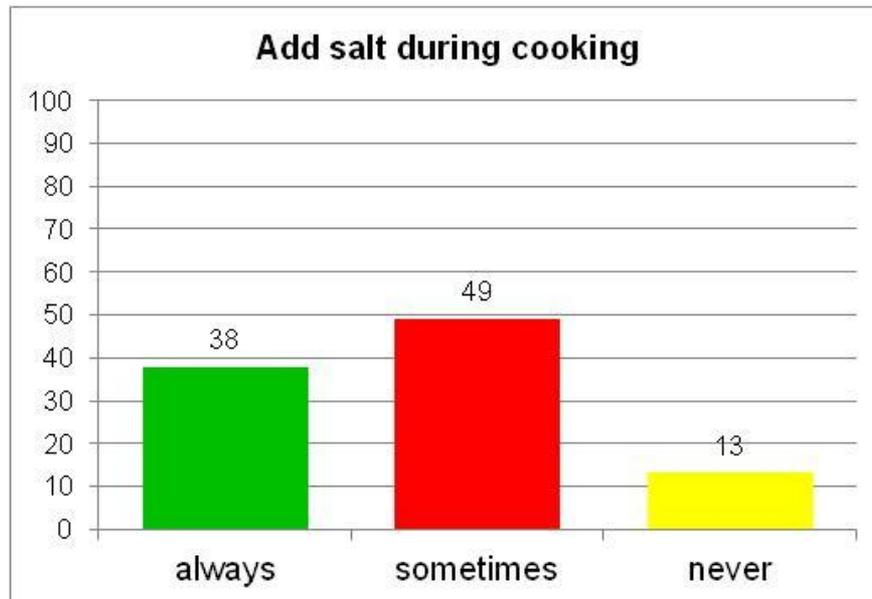
# Salt questions

- only 12% will check the salt content of products when shopping, 44% never does
- still 60% buys low salt products sometimes and 68% would prefer to buy low salt products
- the last two results should be taken with a lot of salt



## Salt and cooking

- almost 40% always adds salt to the food when cooking, only 13% never adds salt
- during eating, only 5% always adds salt to the meal, 44% never adds salt to the meal and 51% sometimes

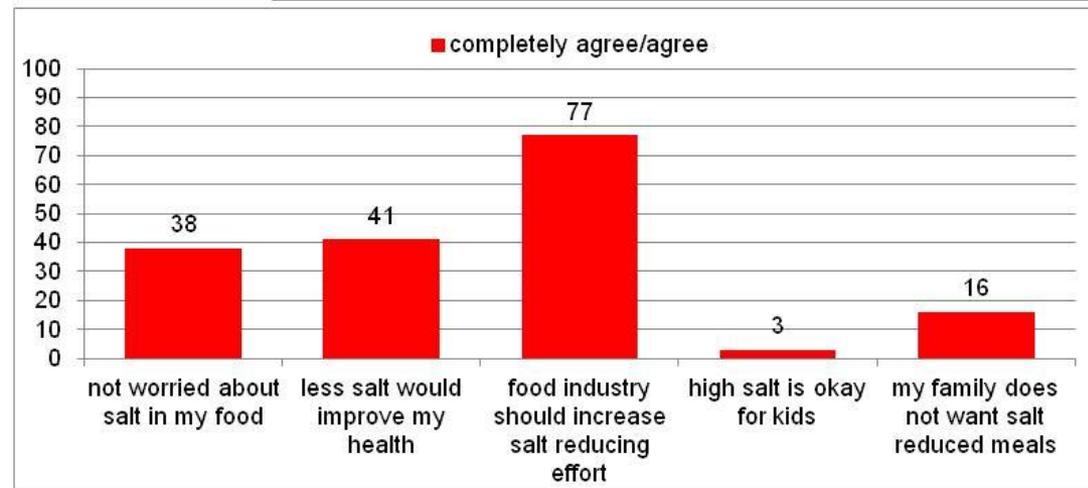
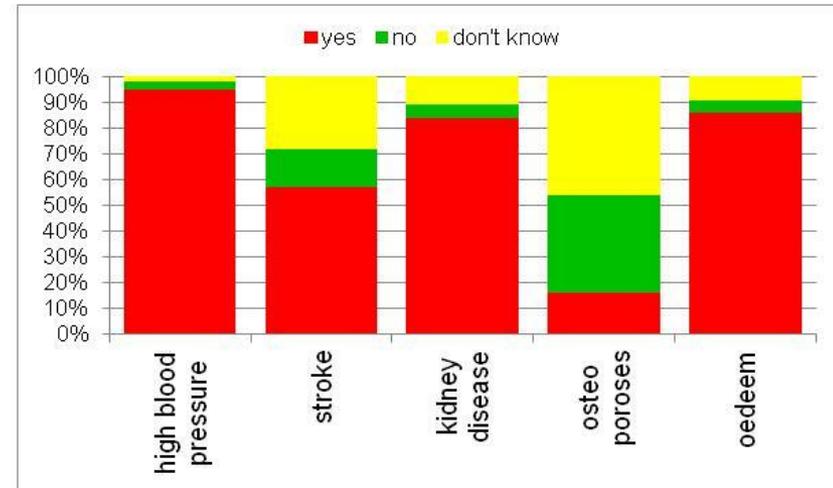


# What does salt do to you?

- the majority of the consumers have a correct idea about the effects of salt on their health

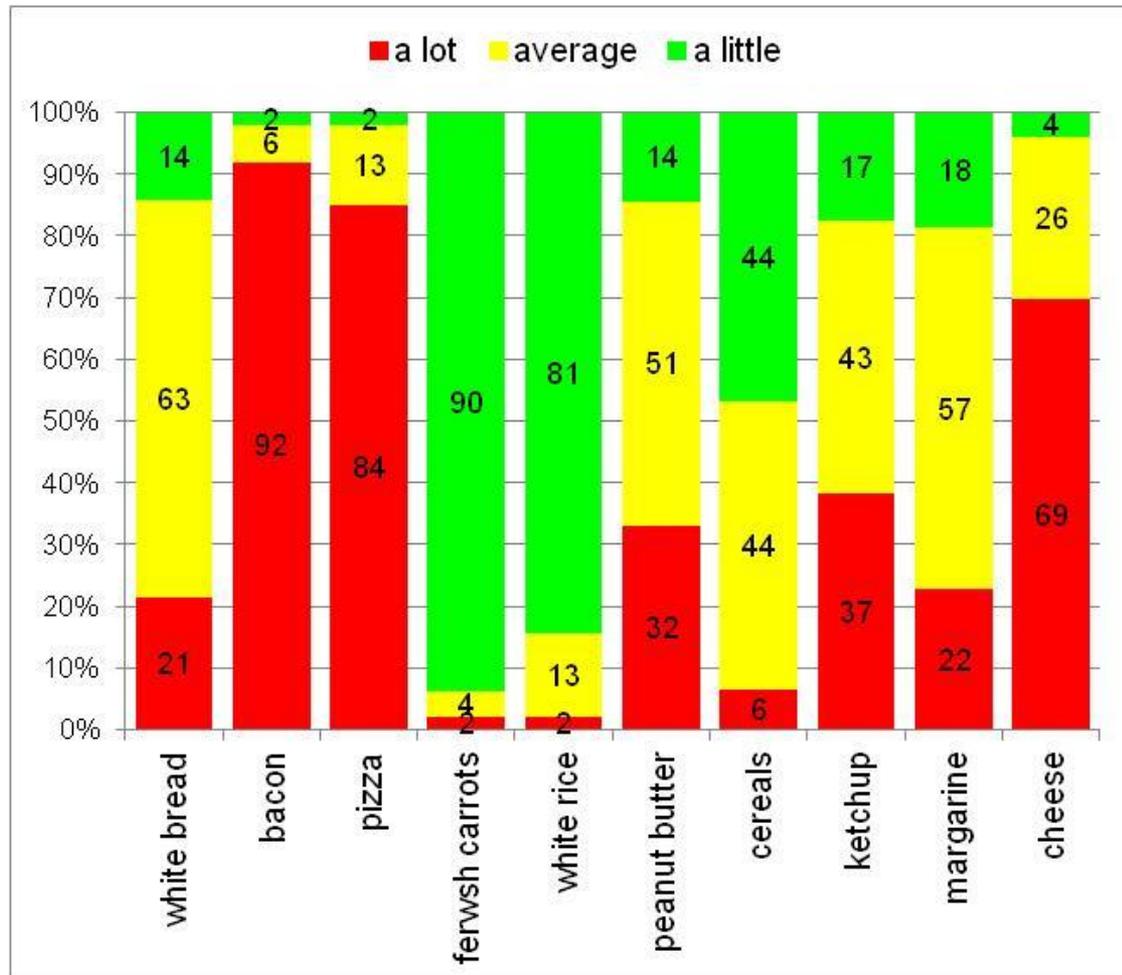
- 41% agree that less salt would improve it
- still 38% does not care about salt in their food
- 77% wants the food industry to take action

*agreement with different statements  
more answers possible*



## Knowledge about salt content in their food

- the consumers were also asked how much salt they thought different foods contained
- they clearly differentiate between the foods but the question is whether they are correct about this
- *meeste zout in bacon, pizza en kaas*
- *minste zout in wortelen witte rijst*
- *margarine, pindakaas en brood gemiddeld*

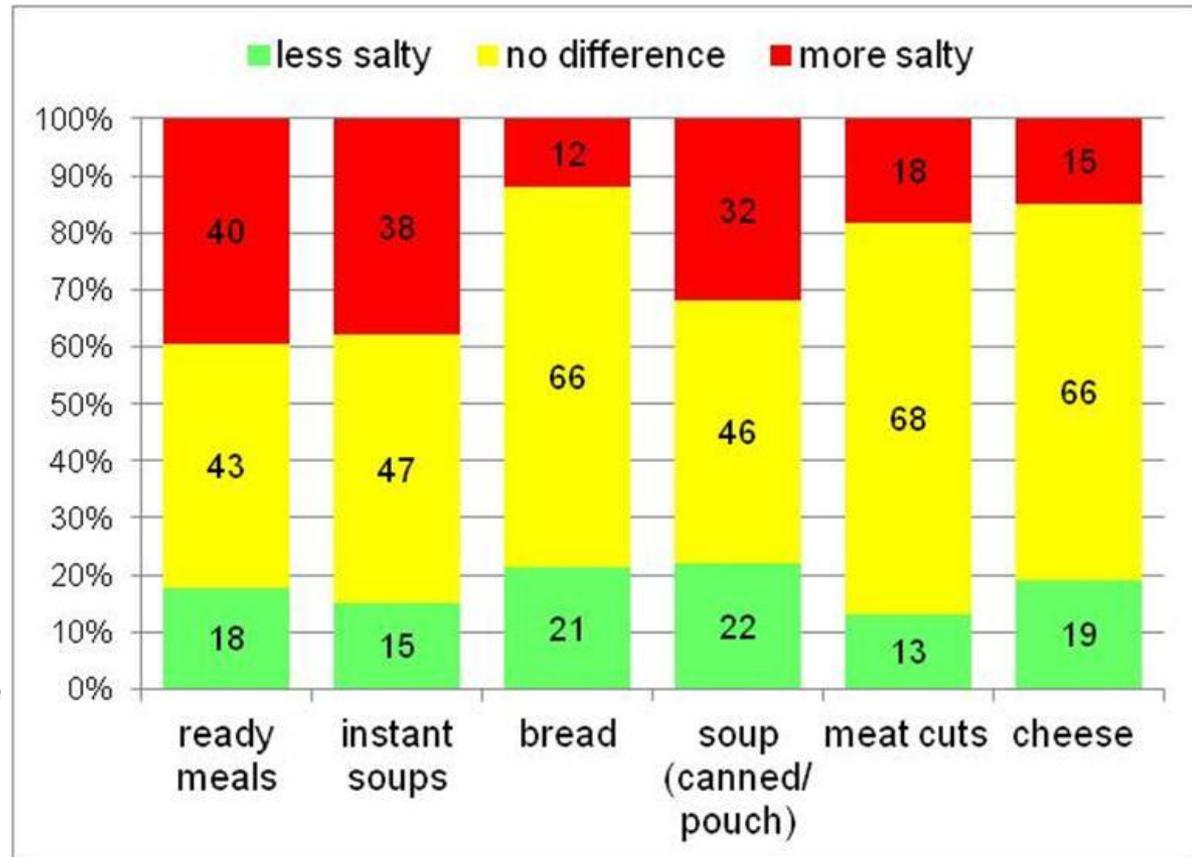


# What happened to saltiness in the past 5-10 years?

- the question was:

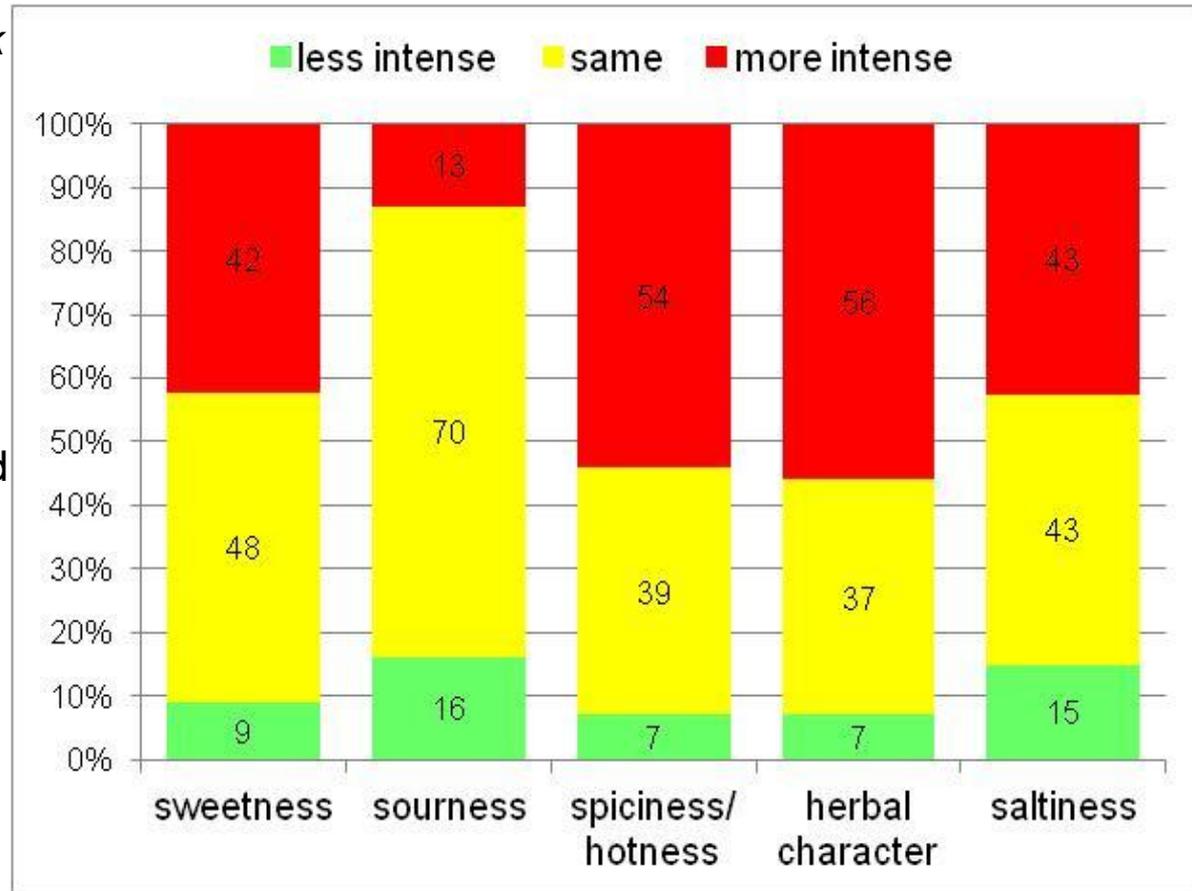
*“to what extent do you think that the salty taste has changed in the past 10-15 years for the following foods?”*

- in spite of the efforts of the industry and in spite of the actual reduction in salt content, most consumers think that it stayed the same or that there is an increase for most categories



## What happened to other aspects in the past 10 years?

- “to what extent do you think the following taste aspects have changed in intensity over the past 10-15 years?”
- sourness has not really changed but sweetness, spiciness, herbal character and saltiness have increased
- for spiciness, this is certainly correct



## So what?

- what would be the conclusion?
  - simply reduce salt because consumers want/don't notice it anyway
  - in spite of the reduction, they think their food tastes more salty
- do consumers compensate for the reduction by adding more salt?
  - we don't know
  - `by simply asking, they give mostly political correct answers
- what happened to the actual salt consumption in the past 10-15 years?
  - can we get valid estimates of the production/sales?
  - how would they compensate (other tastants?, spices are a good option)

and finally:

- could we recreate the 1997 recipes and test these alongside 2011 recipes?
- could we develop a standard which could be used in the next 10 years as a benchmark?

**Bedankt voor uw aandacht**

vragen

