



## Drinkability – new and old concept in brewing industry

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# **Sensorial beer characteristics and drinkability are different properties**

**Till the end of the 19st. century, European beers had similar drinkability.**

**Concentration of production led to decline in drinkability of beer and change of sensorial characteristics.**

**Differences between Czech and foreign beers increased already at the end of the industrial revolution**



## Opinion of the Czech professional journal Kvas from 1906

**„What a name does the North German beer have it is a product without any characteristics, intended mainly for a very wide consumption. That, who in Germany wants beer to enjoy, either a native or fellow countryman, is forced to ask for beer Bavarian or Czech. Beer in Czech countries is not “fabricated“, our product is not spirit, sugar or cloth but North German beer is neither flesh nor fowl, everywhere the same and nowhere exceeding.“**



## Tables of beer consumption in the selected European countries

	1970	1980	1995	2000	2004
Italy	11	17	25	28	30
France	41		39	37	33
Holland	57	86	86	83	78
Switzerland	79		63	58	57
Austria	99	102	116	108	109
Ireland	101	122	113	125	108
Great Britain	102	117	100	97	101
Denmark	107	131	124	102	90
Czech republic	128	149	159	159	157
Belgium - Lux.	135	131	131	99	93
Germany	139	146	138	125	116

## **What is drinkability?**

**A researcher of the RIBM Jiří Cuřín formulated in the 70s. of the 20th century a new term characterizing beer - drinkability. He followed the principle that beer should encourage to another drink although a consumer is not thirsty any more.**

**Drinkability is a complex beer characteristics given by a number of factors that affect total perception of a consumer, such as sensorial properties and taste, and also response and experience of the human organism.**

**Drinkable beer should provoke taste to further drinking.**

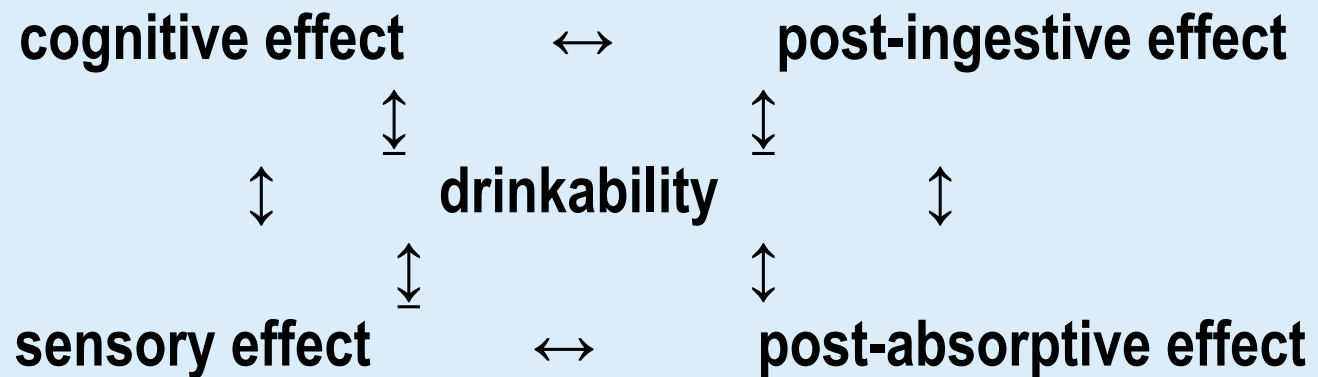


# What is drinkability?

**Japanese researchers (Kirin) when carrying out experiments with rats found that rodents preferred Czech beer to foreign beers and water, and in case of some beers they preferred water to particular brands.**



# Model Mattos: drinkability arises from a complex interaction



Edinburgh 2006



# Changes in production of beer

## Raw materials

**malt – thin husk**

**high extract content**

**high fermentation**

**low wort colour**

**shortening of malting process by 50 %**

**hop - use of hop extract without polyphenols**

**hopping only according to  $\alpha$  acid content**



# Changes in beer production

- Beer - Indirect heating in baths without oxygen access.**
- Change from congress mashing to infusion mashing.**
- Fermentation in CK tanks.**
- Reduction of the secondary fermentation process even to 1 day.**



# Differences between Czech and foreign beers

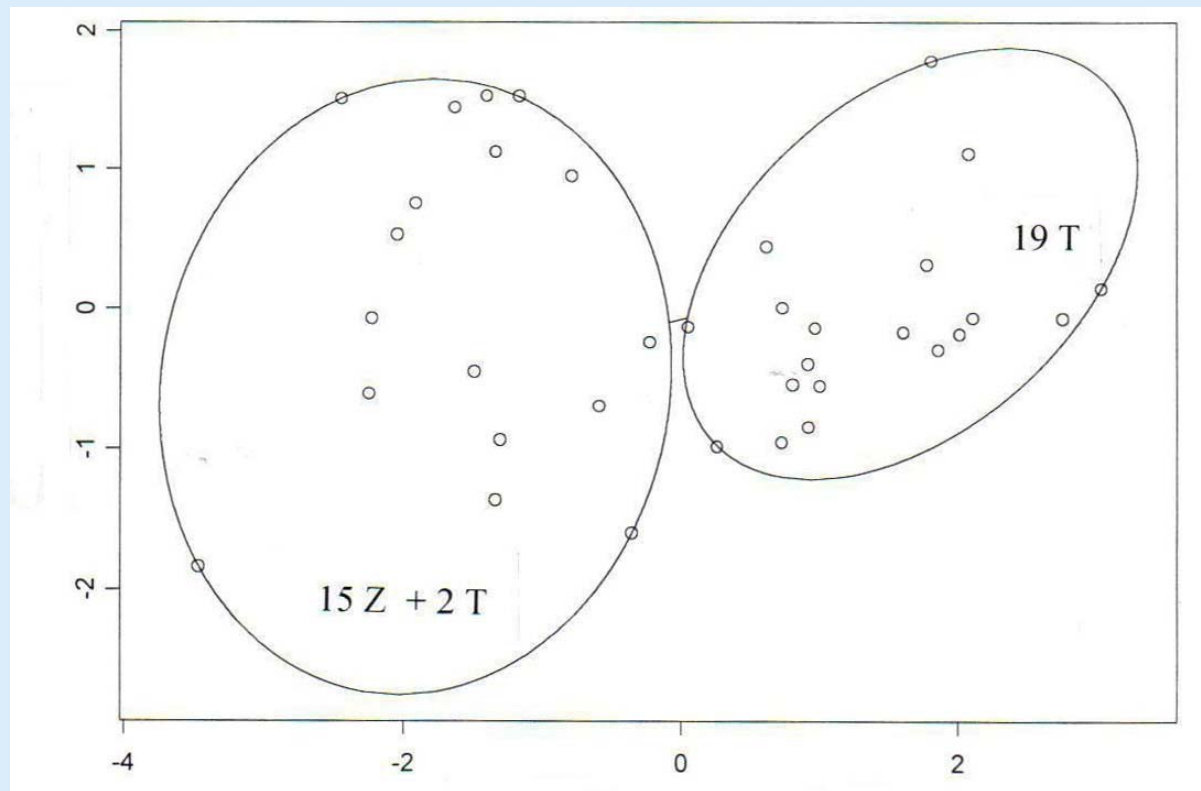
	Czech beers	foreign beers
Colour	>	
Bitterness	>	
Extract difference	>	
Polyphenols	>	



# Differences between Czech and foreign beers

In the sample illustration, beers are split into two groups; most foreign beers are in the first group and domestic beers in the second one.

T means domestic  
Z foreign beers.



Grouping of domestic and foreign beers



## Malt quality index

		MQI	MQI Czech beer
Extract malt in d. m.	%	min. 81,5	min. 81,5
Relative extract at 45 °C	%	40 - 48	max. 38
Kolbach index	%	42 - 48	38 - 40
Diastatic power	WK u.	300	min. 220
Final attenuation	%	82	max. 80
Friability	%	86	min. 75
$\beta$ -glucans in wort	mg/l	100	max. 250



**Thank you for your attention**

4.7.2007

