



Research Center Weihenstephan for Brewing and Food Quality

Aging Effects of a Beer

Determination of the aging behavior helps to identify potential technological weaknesses clearly. The aging behavior forms the basis for the taste optimization in terms of quality assurance.

The determination is carried out via:

- sensory and instrumental analysis
 of the flavor stability in fresh and forced aged beer
- · statistical comparison of the aging, oxygen and heat indicators
- · representative analysis of weak points

Comparison with beers of the branch in the three-digit range since 2009

Aging Indicators in Beer

Aging indicators Thermal stress indicators Oxidation indicators Total Aging Components Percentage of deviation from the mean for all bottom-fermented beers in the comparison

Aging indicators Thermal stress indicators Oxidation indicators Total Aging Components Total Oxidation indicators Oxidation indicators Total Oxidation indicators Total Oxidation indicators Oxidation indicators Total Oxidation indicators Total Oxidation indicators Oxidation indicators Total Oxidation indicators Total Oxidation indicators Oxidation indicators Oxidation indicators Total Oxidation indicators Oxidation indicators Oxidation indicators Total Oxidation indicators Oxidation indicators Oxidation indicators Oxidation indicators

cially aged bottom-fermented beers in the comparison

Percentage of deviation from the mean for all artifi-

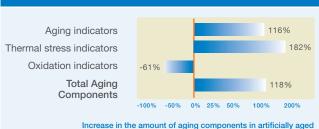
Analysis of Aging Components

Brewery XY - Plisher, fresh					
Parameter	Einheit	Bezug	Wert	Mittelwert	Differenz
			Ihr BIER	alle Biere	
2-Methyl-Butanal (S,A)	μg/l	a/o	<5	3	-3
2-Acetyl-Furan (A)	μg/l	a	5	10	-5
2-Propionyl-Furan (A)	μg/l	a	<5	1	-1
gamma-Nonalacton (W,A)	μg/l	a/h	56	43	13
3-Methyl-Butanal (S,A)	μg/l	a/o	6	7	-1
2-Furfural (W,A)	μg/l	a/h	40	26	14
5-Methyl-Furfural (A)	μg/l	a	<5	6	-6
Benzaldehyd (S,A)	μg/l	a/o	<5	0	-0
2-Phenyl-Ethanal (S,A)	μg/l	a/o	22	12	10
Bernsteinsäure-Diethyl-Ester (A)	μg/l	a	<5	3	-3
Nicotinsäure-Ethyl-Ester	μg/l	*	6	14	-8
Phenylessigsäure-Ethyl-Ester (A)	μg/l	a	<5	0	-0
Summe der Alterungskomponenten im frischen Bier	µg/l	a	129	109	20
Summe der Sauerstoffindikatoren im frischen Bier	μg/l	0	28	23	5
Summe der Wärmeindikatoren im frischen Bier	μg/l	h	96	67	29

- a = Alterungsindikator
- o = Sauerstoffindikator (Oxidation)
- h = Wärmeindikator (Hitzeeinfluss)
- * = allgemeiner Alterungsindikator

Analysis scope & Prices

Brewery XY - Pilsner / A Comparison of the Increase in the Amount of Aging Indicators



beer. Percentage of values above and below the mean for all

bottom-fermented beers in the comparison.

Service-Package

The service package "Aging Indicators in Beer" comprises the following:

- sensory evaluation rating of fresh and artificially aged beer samples
- basic chemical analysis (°P/alcohol/pH)
- aging components (thermal stress, oxidation and aging indicators) in fresh and artificially aged beer
- comparative evaluation of the results with those of the other beers

Package Price

375,00 EUR plus VAT