

**Table S1.** Characteristics of the beers studied.

<b>Beer brand</b>	<b>Ethanol content [v/v %]</b>	<b>Extract content [% w/w]</b>	<b>Producer or distributor</b>
Rauchdoppelbock Wędzony Podwójny Kozłak	8	21	Trzech Kumpli Brewery, Tarnów, Poland
Kozel Cerny	3.8	10	Kompania Piwowarska, Poznań, Poland
Porter Bałtycki Książęce	8	20	Kompania Piwowarska, Poznań, Poland
Okocim Jasne Okocimskie	5.2	11.3	Carlsberg Poland, Warsaw, Poland
Triple Blackcyl	9	21	Trzech Kumpli Brewery, Tarnów, Poland
Miłosław Chmielony Lager	4.5	10	Fortuna Brewery, Miłosław, Poland
Pszeniczne IPA	4.8	11.4	Żywiec Group, Żywiec, Poland
Łomża Niepasteryzowane	5.7	12	Łomża Brewery, Łomża, Poland
Idiota Russian Imperial Stout	10.5	28	ZAPANBRAT Brewery, Żywiec, Poland
Okocim Mocne Dubeltowe	6.5	13.5	Carlsberg Poland, Warsaw, Poland

**Table S2.** Characteristics of the strong alcoholic beverages studied.

<b>Beverage</b>	<b>Original name</b>	<b>Alcohol content [% v/v]/Remarks</b>	<b>Producer or distributor</b>
Brandy	Royben King Brandy	36 Matured $\geq 12$ months	Kvint Tiraspol Winery & Distillery, Tiraspol, Moldova
Whisky	Highlander Blended Scotch Whisky	40 Matured 3 years	AWW Group, Kalisz, Poland
Plum liqueur	Nalewka Soplica śliwkowa	30	CEDC International, Oborniki, Poland
Cherry liqueur 1	Nalewka Soplica wiśniowa	28	CEDC International, Oborniki, Poland
Cherry liqueur 2	Nalewka wiśniowa	30	Home made
Blackcurrant liqueur	Nalewka Soplica czarna porzeczka	30	CEDC International, Oborniki, Poland
Raspberry liqueur	Nalewka Soplica malinowa	28	CEDC International, Oborniki, Poland
Curcuma liqueur	Nalewka z kurkumy	30	Home made
Coffee liqueur	Nalewka kawowa	30	Home made
Dogwood liqueur	Dereniówka	30	Home made
Quince liqueur	Nalewka Soplica pigwowa	28	CEDC International, Oborniki, Poland
Hazelnut liqueur	Nalewka Soplica orzech laskowy	28	CEDC International, Oborniki, Poland
Lemon liqueur	Nalewka Lubelska cytrynowa	28	Stock Poland, Lublin, Poland
Apricot liqueur	Nalewka Soplica morelowa	28	CEDC International, Oborniki, Poland

**Table S3.** Analysis of the dependence of the initial hydrogen peroxide concentration and hydrogen peroxide generation on the available parameters of the beverages by multiple regression.

**Table S3.1.** Hydrogen peroxide concentration in beers (diluted 4-fold).

Beer	H <sub>2</sub> O <sub>2</sub> concentration [μmol/L]	TPC [mmol GAE/L]	Extract content [% w/w]	Alcohol content [% v/v]
Rauchdoppelbock	0.058972	48.54675	21.0	8.0
Kozel Cerny	0.088362	30.72154	10.0	3.8
Okocim	0.111	120.4475	11.3	5.2
Triple Blackcyl	0.319	129.6275	21.0	9.0
Miłosław Chmielony	0.3912	170.4425	10.0	4.5
Pszeniczne	0.422	177.58	11.4	4.8
Łomża	0.50112	190.2475	12.0	5.7
Idiota	0.939	231.6325	28.0	10.5
Okocim Mocne	1.011	325.2475	13.5	6.5

The data for Porter Bałtycki were omitted as it produced an extreme result (deviation from the expected value > 2 standard errors).

#### SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.980403
R Square	0.96119
Adjusted R Square	0.937904
Standard Error	0.086844
Observations	9

#### ANOVA

	df	SS	MS	F	Significance F
Regression	3	0.933931	0.31131	41.27763	0.000596
Residual	5	0.037709	0.007542		
Total	8	0.971641			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.22543	0.105982	-2.12708	0.086724	-0.49787	0.047003	-0.49787	0.047003
TPC [mmol GAE/L]	0.004048	0.000432	9.375388	0.000233	0.002938	0.005157	0.002938	0.005157
Extract content [%]	0.065642	0.026767	2.452344	0.05777	-0.00316	0.134448	-0.00316	0.134448
Alcohol content [%]	-0.1546	0.07736	-1.9985	0.102135	-0.35346	0.044256	-0.35346	0.044256

#### RESIDUAL OUTPUT

Observation	Predicted H <sub>2</sub> O <sub>2</sub> concentration [μmol/L]	Residuals
1	0.112718	-0.05375
2	-0.03216	0.120519
3	0.199911	-0.08891
4	0.286301	0.032699
5	0.425162	-0.03396

6	0.499569	-0.07757
7	0.451085	0.050035
8	0.926769	0.012231
9	0.972297	0.038703

**Table S3.2.** Hydrogen peroxide concentration in strong alcoholic beverages.

Beverage	H <sub>2</sub> O <sub>2</sub> concentration [μmol/L]	TPC [mmol GAE/L]	Alcohol content [% v/v]
Brandy	2.163	0.543614	36
Whisky	21.64549	0.102271	40
Plum	2.16319	2.654009	30
Cherry 1	2.864686	1.691159	28
Cherry 2	3.3868	1.543387	30
Blackcurrant	3.48333	2.598401	30
Raspberry	4.36598	1.578768	28
Curcuma	5.11396	1.96185	30
Coffee	5.48265	0.707089	30
Dogwood	8.673681	2.873266	30
Quince	22.7917	0.521926	28
Hazelnut	23.261	0.877792	28
Lemon	41.4459	0.146308	28
Apricot	48.29011	0.066667	28

#### SUMMARY OUTPUT

Regression Statistics					
Multiple R		0.753978			
R Square		0.568483			
Adjusted R Square		0.490026			
Standard Error		10.93962			
Observations		14			

  

	df	SS	MS	F	Significance F
Regression	2	1734.272	867.136	7.245742	0.009828
Residual	11	1316.428	119.6753		
Total	13	3050.7			

	Coeffi- cients	Stand. Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	74.03896	28.42082	2.605096	0.024471	11.48515	136.5928	11.48515	136.5928
TPC [mmol GAE/L]	-11.7416	3.157598	-3.71853	0.00339	-18.6914	-4.79179	-18.6914	-4.79179
Alcohol content	-1.4897	0.893098	-1.66801	0.123497	-3.45539	0.475996	-3.45539	0.475996

## RESIDUAL OUTPUT

Observation	Predicted H <sub>2</sub> O <sub>2</sub> concentration	Residuals
	[ $\mu\text{mol/L}$ ]	
1	14.02689	-11.8639
2	13.25018	8.39531
3	-1.81436	3.977546
4	12.47045	-9.60577
5	11.22614	-7.83934
6	-1.16143	4.644761
7	13.79011	-9.42413
8	6.312702	-1.19874
9	21.04563	-15.563
10	-4.38879	13.06247
11	26.19914	-3.40744
12	22.0207	1.240304
13	30.6095	10.8364
14	31.54461	16.7455

Table S3.3. Generation of hydrogen peroxide in beers (diluted 4-fold).

Beer	H <sub>2</sub> O <sub>2</sub> generation [ $\mu\text{mol/L}$ ]	TPC [mmol GAE/L]	Extract content [% w/w]	Alcohol content [% v/v]	H <sub>2</sub> O <sub>2</sub> concentration [ $\mu\text{mol/L}$ ]
Rauchdoppelbock	0.607716	48.54675	21.0	8.0	0.058972
Kozel Cerny	0.427168	30.72154	10.0	3.8	0.088362
Porter Bałtycki	7.88933	230.97	20.0	8.0	0.095205
Okocim	0.5217	120.4475	11.3	5.2	0.111
Triple Blackcyl	0.802	129.6275	21.0	9.0	0.319
Miłosław					
Chmielony	1.3328	170.4425	10.0	4.5	0.3912
Pszeniczne	1.5718	177.58	11.4	4.8	0.422
Łomża	1.995	190.2475	12.0	5.7	0.50112
Idiota	2.4788	231.6325	28.0	10.5	0.939
Okocim Mocne	4.182	325.2475	13.5	6.5	1.011

## SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.753978
R Square	0.568483
Adjusted R Square	0.490026
Standard Error	10.93962
Observations	14

## ANOVA

	df	SS	MS	F	Significance F
Regression	2	1734.272	867.136	7.245742	0.009828
Residual	11	1316.428	119.6753		
Total	13	3050.7			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	74.03896	28.42082	2.605096	0.024471	11.48515	136.5928	11.48515	136.5928
TPC [mmol GAE/L]	-11.7416	3.157598	-3.71853	0.00339	-18.6914	-4.79179	-18.6914	-4.79179
Alcohol content	-1.4897	0.893098	-1.66801	0.123497	-3.45539	0.475996	-3.45539	0.475996

#### RESIDUAL OUTPUT

Observation	Predicted H <sub>2</sub> O <sub>2</sub> generation [μmol/L]	Residuals
1	14.02689	-11.8639
2	13.25018	8.39531
3	-1.81436	3.977546
4	12.47045	-9.60577
5	11.22614	-7.83934
6	-1.16143	4.644761
7	13.79011	-9.42413
8	6.312702	-1.19874
9	21.04563	-15.563
10	-4.38879	13.06247
11	26.19914	-3.40744
12	22.0207	1.240304
13	30.6095	10.8364
14	31.54461	16.7455

**Table S3.4.** Generation of hydrogen peroxide in strong alcoholic beverages.

Beverage	H <sub>2</sub> O <sub>2</sub> generation [μmol/L]	TPC [mmol GAE/L]	Alcohol content [%]	H <sub>2</sub> O <sub>2</sub> concentration [μmol/L]
Brandy	0.293126	0.543614	36	2.163
Whisky	0.422827	0.102271	40	21.64549
Plum	5.71521	2.654009	30	2.16319
Cherry 1	3.7393	1.691159	28	2.864686
Cherry 2	2.97292	1.543387	30	3.3868
Blackcurrant	4.32754	2.598401	30	3.48333
Raspberry	1.81596	1.578768	28	4.36598
Curcuma	3.69576	1.96185	30	5.11396
Coffee	6.2514	0.707089	30	5.48265
Dogwood	6.57625	2.873266	30	8.673681
Quince	0.6388	0.521926	28	22.7917
Hazelnut	2.348	0.877792	28	23.261
Lemon	1.5896	0.146308	28	41.4459
Apricot	0.810082	0.066667	28	48.29011

#### SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.762595

R Square	0.581551
Adjusted R Square	0.456017
Standard Error	1.605993
Observations	14

#### ANOVA

	df	SS	MS	F	Significance F
Regression	3	35.84534	11.94845	4.632596	0.028001
Residual	10	25.79212	2.579212		
Total	13	61.63746			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.938154	5.30551	0.742276	0.474994	-7.88326	15.75957	-7.88326	15.75957
TPC [mmol GAE/L]	1.443471	0.696415	2.072718	0.064987	-0.10824	2.99518	-0.10824	2.99518
Alcohol content [%]	-0.0875	0.146759	-0.59621	0.564285	-0.4145	0.2395	-0.4145	0.2395
H <sub>2</sub> O <sub>2</sub> concentration [μmol/L]	-0.01346	0.044263	-0.3042	0.767211	-0.11209	0.08516	-0.11209	0.08516

#### RESIDUAL OUTPUT

Observation	Predicted H <sub>2</sub> O <sub>2</sub> generation [μmol/L]	Residuals
1	1.543743	-1.25062
2	0.294349	0.128478
3	5.115031	0.600179
4	3.890738	-0.15144
5	3.495404	-0.52248
6	5.016987	-0.68945
7	3.70829	-1.89233
8	4.076188	-0.38043
9	2.260012	3.991388
10	5.343859	1.232391
11	1.934667	-1.29587
12	2.442031	-0.09403
13	1.141297	0.448303
14	0.93418	-0.1241