

Spontaneous Fermentation of Beetroot – Effect of Fermentation Time and Temperature and Slice Thickness on Leaven Quality by *Izabela Miszczak, Małgorzata Tańska, Wojciech Rejmer, Iwona Konopka, Magdalena Zielińska*

Supplementary Materials

Table S1. Regression equations for curves shown in Figures 1–6.

Table S1. Regression equations for curves shown in Figures 1–6.

Parameter	Slice thickness (mm)	Temperature (°C)	Regression equation	R ²	Optimum time (days)
Total soluble solid content	2	15	$y = -0.0208x^2 + 0.6783x + 1.3733$	0.8304	15
	2	20	$y = -0.0500x^2 + 0.9656x + 1.7639$	0.8291	9
	2	25	$y = -0.0266x^2 + 0.517x + 3.1606$	0.4882	10
	4	15	$y = -0.0129x^2 + 0.5343x + 1.6011$	0.8200	15
	4	20	$y = -0.0359x^2 + 0.7935x + 1.3466$	0.7655	11
	4	25	$y = -0.0094x^2 + 0.3838x + 2.3376$	0.6326	15
	6	15	$y = 0.3518x + 1.6358$	0.913	15
	6	20	$y = -0.052x^2 + 1.0821x + 0.8354$	0.8609	11
	6	25	$y = -0.0355x^2 + 0.6991x + 2.3625$	0.7478	10
Turbidity	2	15	$y = -8.2723x^2 + 180.01x - 257.67$	0.7962	11
	2	20	$y = -6.2975x^2 + 176.17x - 155.39$	0.9289	15
	2	25	$y = -8.2065x^2 + 178.85x - 9.9545$	0.8007	11
	4	15	$y = 72.322x - 89.403$	0.9546	15
	4	20	$y = -6.851x^2 + 180.05x - 205.03$	0.9276	13
	4	25	$y = -11.616x^2 + 240.36x - 173.34$	0.9499	10
	6	15	$y = 70.571x - 110.58$	0.9383	15
	6	20	$y = -8.3743x^2 + 204.26x - 258.69$	0.9104	13
	6	25	$y = -10.411x^2 + 219.36x - 97.514$	0.7729	10
pH	2	15	$y = 0.0233x^2 - 0.5175x + 6.3298$	0.9095	11
	2	20	$y = 0.0159x^2 - 0.3373x + 5.5013$	0.8254	11
	2	25	$y = 0.0221x^2 - 0.4447x + 5.3428$	0.8300	10
	4	15	$y = 0.0222x^2 - 0.5007x + 6.2835$	0.9137	11
	4	20	$y = 0.0177x^2 - 0.3745x + 5.6555$	0.8149	11
	4	25	$y = 0.0209x^2 - 0.4255x + 5.3054$	0.8087	10
	6	15	$y = 0.0206x^2 - 0.4781x + 6.2908$	0.9232	12
	6	20	$y = 0.0162x^2 - 0.3402x + 5.4980$	0.8017	11
	6	25	$y = 0.0210x^2 - 0.4239x + 5.2707$	0.7978	10
Titratable acidity	2	15	$y = 0.5643x - 0.3895$	0.9644	15
	2	20	$y = -0.0777x^2 + 1.8001x - 1.8234$	0.9482	11
	2	25	$y = -0.0535x^2 + 1.5463x - 0.0596$	0.9098	15
	4	15	$y = 0.5398x - 0.7061$	0.9653	15
	4	20	$y = -0.0637x^2 + 1.6357x - 2.1392$	0.9659	12
	4	25	$y = -0.0477x^2 + 1.529x - 0.6727$	0.9573	15
	6	15	$y = 0.506x - 0.8325$	0.9603	15
	6	20	$y = -0.0675x^2 + 1.5545x - 2.1364$	0.9249	11
	6	25	$y = -0.0602x^2 + 1.6522x - 0.9937$	0.9624	15
Total carbohydrate content	2	15	$y = -0.0138x^2 + 0.3524x - 0.0696$	0.6223	13
	2	20	$y = -0.0228x^2 + 0.3696x + 0.184$	0.4857	8
	2	25	$y = -0.0219x^2 + 0.3082x + 0.4874$	0.6133	7
	4	15	$y = -0.0171x^2 + 0.4043x - 0.5439$	0.6385	11
	4	20	$y = -0.0371x^2 + 0.6234x - 0.3915$	0.6191	8
	4	25	$y = -0.0183x^2 + 0.212x + 0.9051$	0.3172	6
	6	15	$y = 0.1848x - 0.3022$	0.8278	15
	6	20	$y = -0.0316x^2 + 0.5608x - 0.3768$	0.6331	9
	6	25	$y = -0.0307x^2 + 0.4514x + 0.0371$	0.723	8
L*	2	15	$y = 0.0277x^2 - 0.8584x + 13.068$	0.2715	15
	2	20	$y = 0.1291x^2 - 2.8426x + 20.025$	0.6767	11
	2	25	$y = 0.093x^2 - 1.8312x + 13.352$	0.582	10
	4	15	$y = -0.0151x^2 - 0.5004x + 15.762$	0.3468	15

	4	20	$y = 0.1931x^2 - 3.9078x + 24.285$	0.8207	10
	4	25	$y = 0.1423x^2 - 2.7659x + 17.745$	0.7418	10
	6	15	$y = -0.0534x^2 + 0.0528x + 15.897$	0.3736	15
	6	20	$y = 0.1997x^2 - 4.2236x + 26.83$	0.8692	11
	6	25	$y = 0.168x^2 - 3.4294x + 21.434$	0.7512	10
<i>a*</i>	2	15	$y = -0.0276x^2 + 0.1017x + 40.263$	0.1021	2
	2	20	$y = 0.1026x^2 - 2.7471x + 51.04$	0.6492	1
	2	25	$y = 0.1252x^2 - 2.4079x + 44.727$	0.5502	1
	4	15	$y = -0.1309x^2 + 1.454x + 40.445$	0.2464	6
	4	20	$y = 0.1711x^2 - 3.6373x + 54.482$	0.7276	1
	4	25	$y = 0.162x^2 - 3.246x + 49.213$	0.6683	1
	6	15	$y = -0.1796x^2 + 2.2209x + 40.302$	0.2822	6
	6	20	$y = 0.1551x^2 - 3.7368x + 56.692$	0.7874	1
	6	25	$y = 0.1279x^2 - 3.083x + 50.421$	0.7238	1
<i>b*</i>	2	15	$y = 0.0472x^2 - 1.468x + 22.454$	0.27	1
	2	20	$y = 0.1799x^2 - 4.0238x + 30.539$	0.7729	1
	2	25	$y = 0.1604x^2 - 3.1537x + 23.007$	0.5813	1
	4	15	$y = -0.0454x^2 - 0.2784x + 23.03$	0.3598	1
	4	20	$y = 0.0566x^2 - 1.6348x + 21.414$	0.576	1
	4	25	$y = 0.1884x^2 - 3.9789x + 28.57$	0.7198	1
	6	15	$y = -0.128x^2 + 1.3709x + 17.156$	0.3833	5
	6	20	$y = 0.034x^2 - 1.2516x + 20.404$	0.4757	1
	6	25	$y = 0.1852x^2 - 4.0564x + 29.601$	0.7933	1
ΔE	2	15	$y = -0.5857x + 49.248$	0.1414	1
	2	20	$y = 0.173x^2 - 4.1912x + 62.248$	0.6809	1
	2	25	$y = 0.1635x^2 - 3.3367x + 53.087$	0.6404	1
	4	15	$y = -0.1372x^2 + 1.221x + 49.353$	0.2579	3
	4	20	$y = 0.1757x^2 - 4.1044x + 61.661$	0.8603	1
	4	25	$y = 0.2337x^2 - 4.7376x + 60.026$	0.8043	1
	6	15	$y = -0.2206x^2 + 2.6888x + 46.338$	0.3072	6
	6	20	$y = 0.1886x^2 - 4.3554x + 64.135$	0.8467	1
	6	25	$y = 0.2195x^2 - 4.635x + 61.741$	0.7014	1
Total phenolic content	2	15	$y = -0.4601x^2 + 12.328x - 13.491$	0.8064	13
	2	20	$y = -0.744x^2 + 14.283x + 2.5851$	0.4934	10
	2	25	$y = -0.4916x^2 + 10.27x + 22.798$	0.3874	11
	4	15	$y = -0.5253x^2 + 15.095x - 27.528$	0.8177	14
	4	20	$y = -0.8076x^2 + 16.144x - 9.8475$	0.7100	10
	4	25	$y = -0.9808x^2 + 16.746x + 11.462$	0.4829	9
	6	15	$y = 5.8537x - 10.735$	0.6963	15
	6	20	$y = -1.1632x^2 + 22.289x - 31.458$	0.7721	10
	6	25	$y = -0.8269x^2 + 17.677x - 11.104$	0.7999	11
Total betacyanin content	2	15	$y = -0.3364x^2 + 6.8925x - 10.905$	0.8399	10
	2	20	$y = -0.2443x^2 + 5.4126x - 3.7143$	0.7959	11
	2	25	$y = -0.2543x^2 + 5.361x - 2.4407$	0.878	11
	4	15	$y = -0.2921x^2 + 6.2795x - 10.77$	0.8393	10
	4	20	$y = -0.2224x^2 + 5.1528x - 5.4197$	0.8559	11
	4	25	$y = -0.1851x^2 + 4.1003x - 0.7062$	0.8267	11
	6	15	$y = -0.2376x^2 + 5.4433x - 9.8839$	0.826	11
	6	20	$y = -0.3057x^2 + 6.2843x - 9.2978$	0.9141	10
	6	25	$y = -0.2324x^2 + 5.481x - 6.3112$	0.9593	12
Total betaxanthin content	2	15	$y = -0.0757x^2 + 1.4127x - 1.28$	0.8369	9
	2	20	$y = -0.0828x^2 + 1.2053x + 2.1331$	0.2792	8
	2	25	$y = -0.1739x^2 + 2.4869x + 2.5709$	0.7464	7
	4	15	$y = -0.0485x^2 + 0.9999x - 0.594$	0.8206	9
	4	20	$y = -0.082x^2 + 1.2918x + 1.4027$	0.3455	8
	4	25	$y = -0.0828x^2 + 1.2031x + 3.6326$	0.3844	8
	6	15	$y = -0.034x^2 + 0.8937x - 0.9884$	0.8804	13
	6	20	$y = -0.127x^2 + 2.17x - 1.5215$	0.7395	9
	6	25	$y = -0.0833x^2 + 1.3309x + 2.6275$	0.4748	8

*L**, lightness; *a**, (+)redness/(-)greenness; *b**, (+)yellowness/(-)blueness; ΔE , total color difference; R^2 , coefficient of determination.