

Enhancing *Saccharomyces cerevisiae* alcohol production by Discoloring red sorghum (*Sorghum bicolor* L. Moench) malt: use of Gompertz 3-parameters Model

Arthur K. Amisi ^{1,2} and Jean-Claude T. Bwanganga ^{1,2}

¹ Fermentation and Distillation Laboratory, Department of Chemistry and Agricultural Industries, Faculty of Agricultural Sciences and Environment, University of Kinshasa, PO Box. 14071, Kinshasa 1, Democratic Republic of Congo, E-mail: arthur.amisi@unikin.ac.cd; arthur.amisi-kapepa.1@ulaval.ca; Tel : +243 811 527 917 / 842 320 455

² Research-Innovations Laboratory in Agri-Food Industries (LRIIAA), Bandundu-Ville, Democratic Republic of Congo

Supplementary table 1. Calculated alcohol levels of different treatments over time

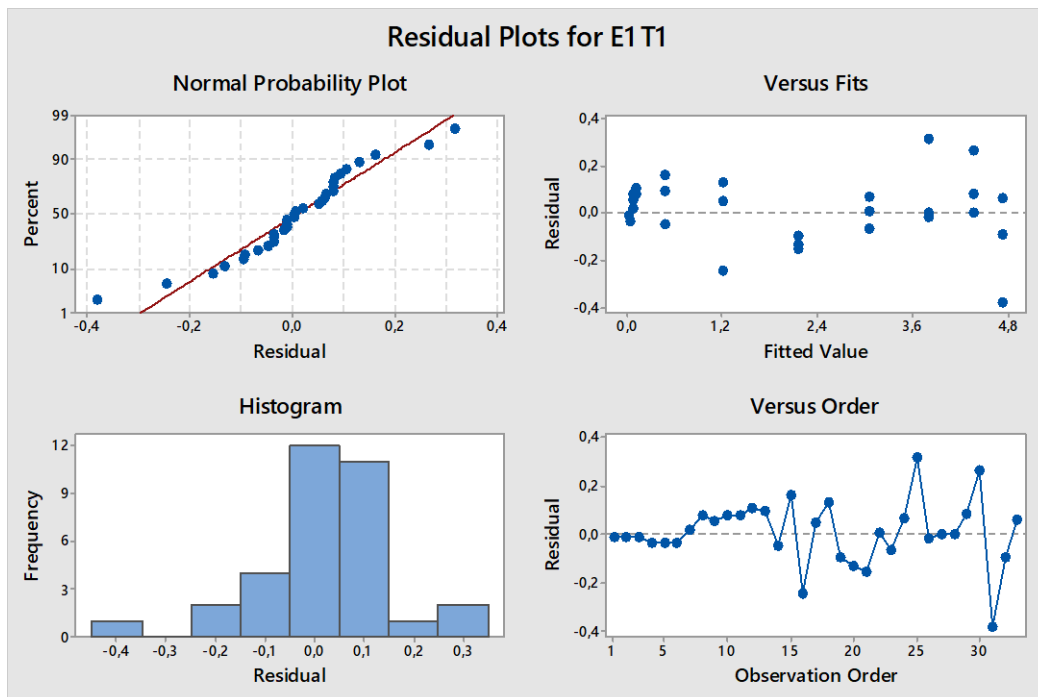
Duration (h)	E1T1	E1T2	E2T1	E2T2
0	0.0	0.0	0.0	0.0
0	0.0	0.0	0.0	0.0
0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0
9	0.1	0.1	0.1	0.1
9	0.1	0.2	0.4	0.1
9	0.1	0.2	0.4	0.1
12	0.2	0.2	0.3	0.1
12	0.2	0.1	0.3	0.3
12	0.2	0.3	0.3	0.2
24	0.6	0.4	0.5	0.5
24	0.4	0.5	0.6	0.6
24	0.6	0.5	0.8	0.5
36	1.0	0.8	1.0	1.1
36	1.3	1.0	1.1	1.1
36	1.3	1.1	1.2	1.0
48	2.1	1.5	1.7	1.7
48	2.0	1.5	1.9	1.6
48	2.0	1.5	1.9	1.5
60	3.1	2.2	2.7	2.4
60	3.0	2.0	2.9	2.3
60	3.1	2.3	2.9	2.3
72	4.1	2.8	3.4	2.7
72	3.8	2.9	3.4	2.6
72	3.8	2.8	3.5	2.8
84	4.4	3.3	3.9	2.9
84	4.4	3.2	3.9	3.0
84	4.6	3.4	4.3	3.0
96	4.4	3.5	4.5	2.9
96	4.7	3.6	4.3	3.0
96	4.8	3.2	4.2	3.1

Where E1T1: Sample of discolored sorghum, fermentation carried out at 10°C

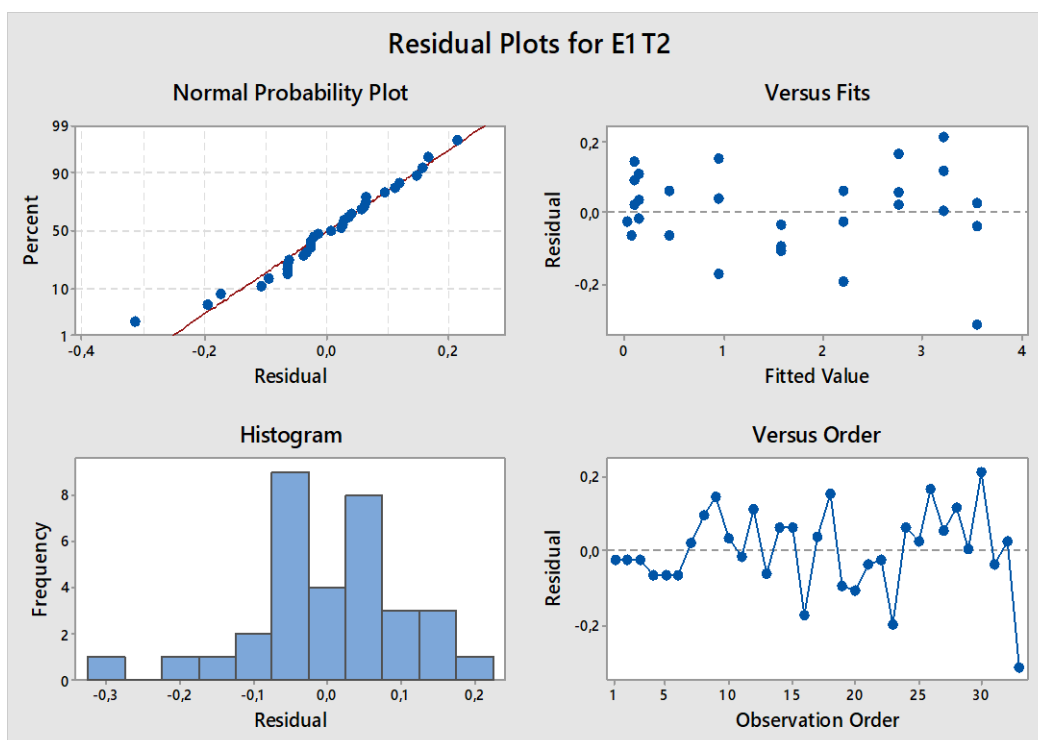
E1T2: Sample of discolored sorghum, fermentation carried out at room temperature

E2T1: Sample of non-discolored sorghum, fermentation carried out at 10°C

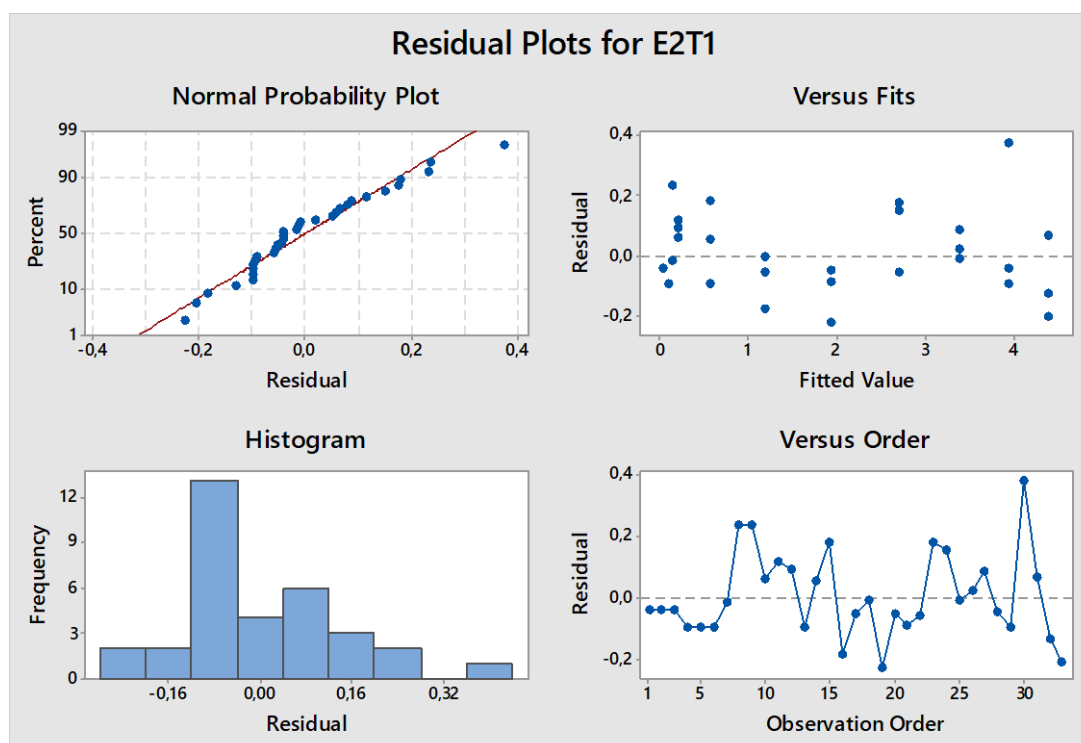
E2T2: Sample of non-discolored sorghum, fermentation carried out at room temperature



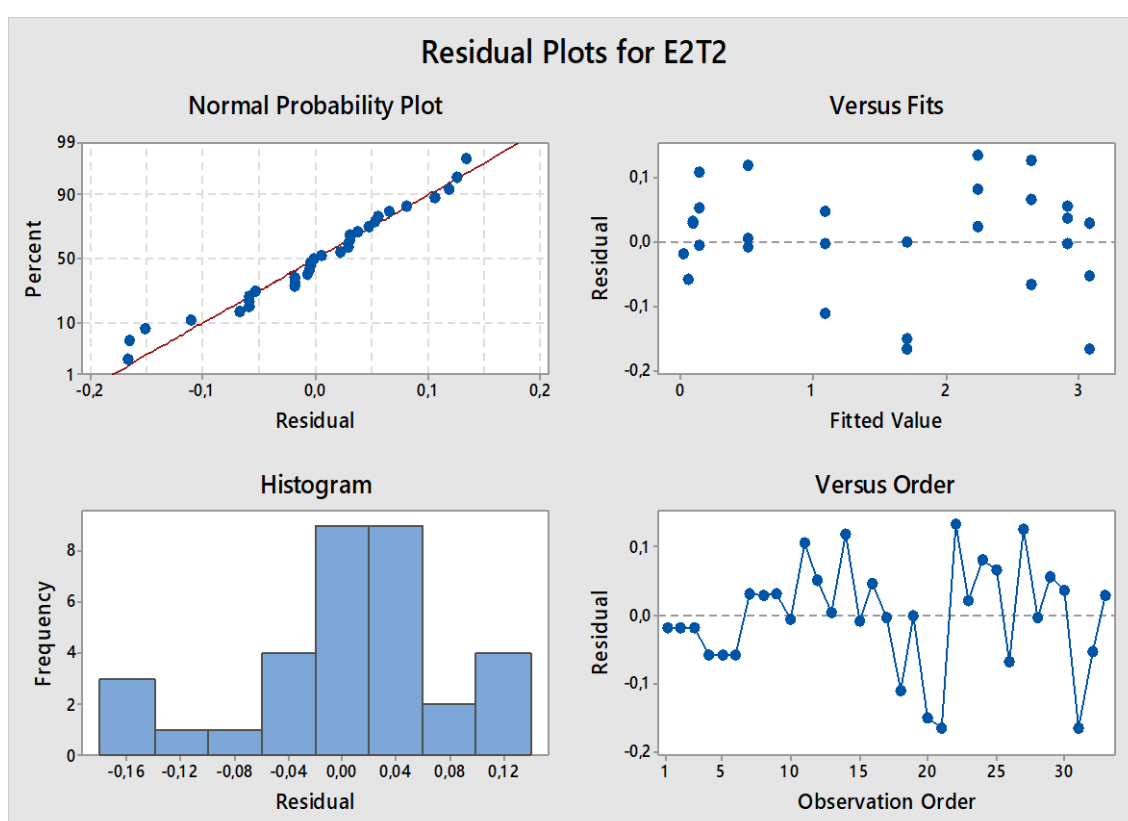
Supplementary Figure 1. Residuals versus fitted values of the E1T1 sample where E1T1: Sample of discolored sorghum, fermentation carried out at 10°C



Supplementary Figure 2. Residuals based on fitted values of sample E1T2 where E1T2: Sample of discolored sorghum, fermentation carried out at 25°C



Supplementary **Figure 3. Residuals versus fitted values of the E2T1 sample**
 where E2T2: non-discolored sorghum, fermentation carried out at 10°C



Supplementary **Figure 4. Residuals versus fitted values of the E2T2 sample**
 where E2T2: discolored sorghum, fermentation carried out at 25°C