

7. LAMPIRAN

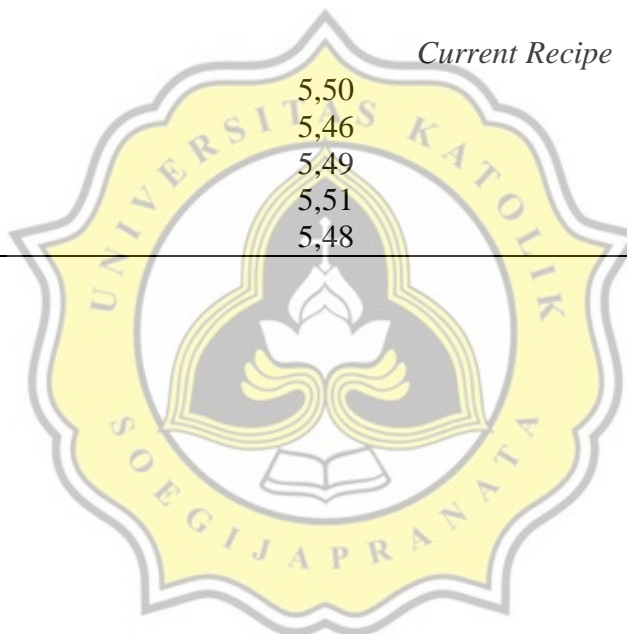
LAMPIRAN 1. Rekap Data Analisa Proses *Milling* dengan metode *Sieving* pada *Flexible Recipe* dan *Current Recipe*.Tabel 15. Tabel Data Proses *Milling* dengan metode *Sieving* pada *Flexible Recipe* dan *Current Recipe*

Resep	Putaran	Husks ≥1,25 mm	Course grits 1-1,25 mm	Fine grits I 0,56-1 mm	Fine grits II 0,25-0,56 mm	Flour I 0,15-0,25 mm	Flour II ≤0,15 mm
Fraksi A malt (%)							
<i>Flexible Recipe</i>	Kanan	0,19	1,93	12,17	30,94	47,03	7,74
	Kiri	0,33	0,65	11,56	30,67	49,84	0,33
<i>Current Recipe</i>	Kanan	0,90	1,79	11,64	28,09	35,53	22,05
	Kiri	0,84	1,76	13,22	30,03	32,46	21,70
Fraksi Barley (%)							
<i>Flexible Recipe</i>	Kanan	1,29	4,67	29,34	38,86	14,07	11,77
	Kiri	1,24	5,62	31,61	37,04	24,36	1,24
<i>Current Recipe</i>	Kanan	2,20	6,37	27,56	37,53	11,10	15,23
	Kiri	2,00	7,08	30,86	35,47	10,95	13,63
Fraksi C malt (%)							
<i>Flexible Recipe</i>	Kanan	0,28	1,14	13,01	31,07	34,43	20,07
	Kiri	0,36	1,46	14,67	32,06	36,21	0,36
<i>Current Recipe</i>	Kanan	0,73	1,74	13,73	31,31	26,11	26,37
	Kiri	0,78	1,69	14,44	29,99	32,88	20,22

LAMPIRAN 2. Rekap Data Analisa Parameter pada Proses *Mashing* pada *Flexible Recipe* dan *Current Recipe*.

Tabel 16. Tabel Data Proses *Mashing*

Nomor Brew	pH	Uji Iodin
<i>Flexible Recipe</i>		
Brew 1	5,47	Negatif
Brew 2	5,50	Negatif
Brew 3	5,48	Negatif
Brew 4	5,47	Negatif
Brew 5	5,44	Negatif
<i>Current Recipe</i>		
Brew 1	5,50	Negatif
Brew 2	5,46	Negatif
Brew 3	5,49	Negatif
Brew 4	5,51	Negatif
Brew 5	5,48	Negatif



LAMPIRAN 3. Rekap Data Analisa Parameter pada Proses *Wort Separation Sieving* pada *Flexible Recipe* dan *Current Recipe*.

Tabel 17. Tabel Data Proses *Wort Separation*

Nomor <i>Brew</i>	<i>Theoretical OG</i> (°P)	<i>OG Main Wort</i> (°P)	Total Waktu <i>Sparging</i> (menit)
<i>Flexible Recipe</i>			
Brew 1	16,57	22,21	50
Brew 2	16,95	22,27	49
Brew 3	16,32	21,43	48
Brew 4	16,92	22,46	50
Brew 5	16,40	21,70	51
<i>Current Recipe</i>			
Brew 1	16,96	23,16	45
Brew 2	16,49	22,30	45
Brew 3	16,76	22,93	43
Brew 4	16,53	22,42	44
Brew 5	16,69	22,75	44



LAMPIRAN 4. Rekap Data Analisa Parameter pada Proses Wort Cooling pada *Flexible Recipe* dan *Current Recipe*.

Tabel 18. Tabel Data Proses Wort Cooling

Nomor Brew	OG (%wt)	Volume (hl)	Colour (EBC)	AEFA (%wt)	pH	FAN (ppm)	Brewhouse Yield (%)	Extract Losses (%)
<i>Flexible Recipe</i>								
Brew 1	16,05	207,00	17,41	2,34	5,22	178,00	97,58	2,71
Brew 2	16,17	206,00	17,03	2,43	5,27	163,00	96,24	4,91
Brew 3	15,50	201,00	17,11	2,44	5,23	167,00	93,38	8,03
Brew 4	15,85	214,00	16,36	2,47	5,27	154,00	97,43	2,96
Brew 5	15,72	208,00	15,42	2,54	5,21	154,00	97,01	3,38
<i>Current Recipe</i>								
Brew 1	16,74	208,00	16,49	2,86	5,24	156,00	100,54	,31
Brew 2	16,28	208,00	15,73	2,99	5,23	144,00	100,20	,19
Brew 3	16,42	210,00	15,54	3,05	5,22	154,00	100,85	,15
Brew 4	16,58	204,00	16,28	3,02	5,22	150,00	100,19	,50
Brew 5	16,48	207,00	15,72	3,00	5,25	145,00	100,35	,71

LAMPIRAN 5. Rekap Data Analisa Parameter pada Proses Fermentasi per hari *Sieving* pada *Flexible Recipe* dan *Current Recipe*.

Tabel 19. Tabel Data Proses Fermentasi Per Hari

Parameter	Hari ke-														
	<i>Main Fermentation</i>				<i>Wait For RUH</i>					<i>RUH</i>		<i>Deep Cooling</i>		<i>Storage</i>	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	<i>Flexible Recipe</i>														
Suhu (°C)	10,5	10,5	10,5	10,5	10,5	10,5	11,7	12,9	14,1	14,3	14,4	14,4	6,9	2,1	1
AE (°P)	15,46	15,04	12,56	10,23	6,88	6,3	5,45	4	3,39	3,28	3,19	3,12	3,1	3,09	3,03
pH	5	4,69	4,52	4,37	4,34	4,31	4,32	4,35	4,39	4,4	4,4	4,4	4,41	4,41	4,41
Colour (EBC)	15,04	14,34	14,36	14,16	14	13,8	13,66	13,62	13,6	13,85	13,67	13,46	13,25	13,11	12,93
	<i>Current Recipe</i>														
Suhu (°C)	10,5	10,5	10,5	10,5	10,5	10,5	11,2	11,8	13	13,5	13,8	14	9,7	1,7	1
AE (°P)	13,48	12,57	11,8	8,92	7,83	6,36	5,49	4,52	3,6	3,28	3,08	3,07	3,02	3,02	3,02
pH	4,87	4,65	4,46	4,35	4,33	4,3	4,32	4,31	4,32	4,31	4,32	4,42	4,41	4,41	4,41
Colour (EBC)	14,85	14,58	14,35	13,98	13,83	13,64	13,45	13,65	13,64	13,58	13,48	13,42	13,26	12,98	12,61

LAMPIRAN 6. Hasil Uji Sensori Bir Akhir yang telah dikemas

Tabel 20. Tabel Data Hasil Uji Sensori

Panelis	<i>Flexible Recipe</i>		<i>Current Recipe</i>	
	Skor	Remarks <i>off flavour</i>	Skor	Remarks <i>off flavour</i>
1	65	-	63	-
2	60	-	62	<i>sulphury</i>
3	66	<i>floral</i>	58	-
4	65	<i>sulphury</i>	62	-
5	59	-	60	-

Keterangan :

- *Range* skor antara 50-75 (*Heineken Scale*) dan ditentukan berdasarkan senyawa-senyawa *off flavour* yang tercium oleh masing-masing panelis



LAMPIRAN 7. Analisa Data Proses *Milling*

a. Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Husks	,294	4	.	,807	4	,115
Course_grits	,290	4	.	,806	4	,113
Fine_grits_I	,290	4	.	,827	4	,161
Fine_grits_II	,268	4	.	,898	4	,422
Flour_I	,213	4	.	,956	4	,754
Flour_II	,174	4	.	,987	4	,944

a. Lilliefors Significance Correction

b. Uji Homogenitas dan Uji Independent T Test pada Proses *Milling*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Husks	Equal variances assumed	6E+015	,000	-13,181	2	,006	-,55424	,04205	-,73516	-,37332
	Equal variances not assumed			-13,181	1,208	,030	-,55424	,04205	-,91357	-,19491
Course_grits	Equal variances assumed	8E+015	,000	-14,515	2	,005	-,62894	,04333	-,81537	-,44251
	Equal variances not assumed			-14,515	1,504	,013	-,62894	,04333	-,88855	-,36932
Fine_grits_I	Equal variances assumed	.	.	-,094	2	,934	-,08301	,88742	-3,90128	3,73527
	Equal variances not assumed			-,094	1,886	,934	-,08301	,88742	-4,13085	3,96484
Fine_grits_II	Equal variances assumed	.	.	4,922	2	,039	1,24639	,25325	,15675	2,33604
	Equal variances not assumed			4,922	1,191	,098	1,24639	,25325	-,97689	3,46968
Flour_I	Equal variances assumed	8E+015	,000	3,954	2	,058	8,75779	2,21471	-,77132	18,28690
	Equal variances not assumed			3,954	1,883	,064	8,75779	2,21471	-1,35925	18,87483
Flour_II	Equal variances assumed	9E+014	,000	-2,896	2	,101	-8,73800	3,01703	-21,71925	4,24324
	Equal variances not assumed			-2,896	1,878	,109	-8,73800	3,01703	-22,56311	5,08710

LAMPIRAN 8. Analisa Data Proses *Mashing*

a. Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pH_mashing	,129	10	,200*	,967	10	,865

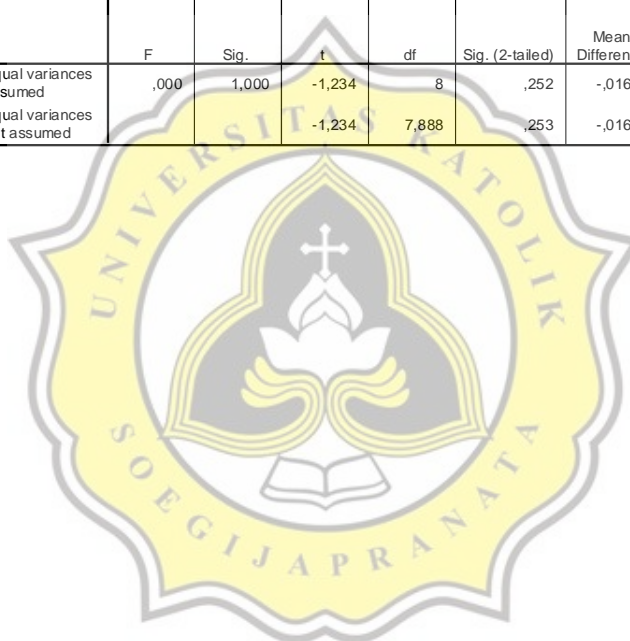
*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

b. Uji Homogenitas dan Uji Independent T Test pada Proses *Mashing*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
pH_mashing	Equal variances assumed	,000	1,000	-1,234	8	,252	-,01600	,01296	-,04589	,01389
	Equal variances not assumed			-1,234	7,888	,253	-,01600	,01296	-,04596	,01396



LAMPIRAN 9. Analisa Data Proses *Wort Separation*

a. Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OG_main_wort	,185	10	,200*	,963	10	,823
sparging_time	,237	10	,118	,885	10	,149
Theoretical_OG	,169	10	,200*	,925	10	,403

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

b. Uji Homogenitas dan Uji Independent T Test pada Proses *Wort Separation*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OG_main_wort	Equal variances assumed	,586	,466	-2,795	8	,023	-,69800	,24972	-1,27385	-,12215
	Equal variances not assumed			-2,795	7,719	,024	-,69800	,24972	-1,27752	-,11848
Theoretical_OG	Equal variances assumed	2,167	,179	-,336	8	,746	-,05230	,15570	-,41133	,30674
	Equal variances not assumed			-,336	6,956	,747	-,05230	,15570	-,42093	,31633
sparging_time	Equal variances assumed	,554	,478	8,538	8	,000	5,40000	,63246	3,94155	6,85845
	Equal variances not assumed			8,538	7,339	,000	5,40000	,63246	3,91839	6,88161

LAMPIRAN 10. Analisa Data Proses Wort Cooling

a. Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OG_cold_wort	,127	10	,200*	,972	10	,906
colour_CW	,194	10	,200*	,926	10	,411
AEFA_CW	,227	10	,154	,826	10	,030
pH_CW	,211	10	,200*	,884	10	,145
FAN_CW	,219	10	,190	,919	10	,351
Brewhouse_Yield	,270	10	,037	,868	10	,095
Extract_losses	,241	10	,102	,841	10	,046
Volume_CW	,219	10	,190	,947	10	,633

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

b. Uji Homogenitas dan Uji Independent T Test pada Proses Wort Cooling

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
OG_cold_wort	Equal variances assumed	,938	,361	-4,536	8	,002	-,64200	,14154	-,96840	-,31560
	Equal variances not assumed			-4,536	6,873	,003	-,64200	,14154	-,97795	-,30605
colour_CW	Equal variances assumed	2,240	,173	1,785	8	,112	,71400	,39995	-,20829	1,63629
	Equal variances not assumed			1,785	5,980	,125	,71400	,39995	-,26544	1,69344
AEFA_CW	Equal variances assumed	,001	,979	-11,750	8	,000	-,54000	,04596	-,64598	-,43402
	Equal variances not assumed			-11,750	7,999	,000	-,54000	,04596	-,64598	-,43402
pH_CW	Equal variances assumed	8,056	,022	,574	8	,582	,00800	,01393	-,02412	,04012
	Equal variances not assumed			,574	5,627	,588	,00800	,01393	-,02664	,04264
FAN_CW	Equal variances assumed	1,375	,275	2,639	8	,030	13,40000	5,07740	1,69149	25,10851
	Equal variances not assumed			2,639	6,077	,038	13,40000	5,07740	1,01430	25,78570
Brewhouse_Yield	Equal variances assumed	4,298	,072	-5,236	8	,001	-4,09800	,78265	-5,90279	-2,29321
	Equal variances not assumed			-5,236	4,204	,006	-4,09800	,78265	-6,22996	-1,96604
Extract_losses	Equal variances assumed	7,578	,025	4,064	8	,004	4,02600	,99055	1,74178	6,31022
	Equal variances not assumed			4,064	4,089	,015	4,02600	,99055	1,29933	6,75267
Volume_CW	Equal variances assumed	,958	,356	-,087	8	,933	-,20000	2,30217	-5,50882	5,10882
	Equal variances not assumed			-,087	5,687	,934	-,20000	2,30217	-5,90922	5,50922

LAMPIRAN 11. Analisa Data Hasil Uji Sensori

a. Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Sensori	,167	10	,200*	,942	10	,576

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

b. Uji Homogenitas dan Independent T Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Sensori	Equal variances assumed	4,800	,060	1,174	8	,274	2,00000	1,70294	-1,92698	5,92698
	Equal variances not assumed			1,174	6,661	,280	2,00000	1,70294	-2,06868	6,06868



LAMPIRAN 12. Surat Penerimaan TA Magang di PT. Multi Bintang Indonesia, Tbk.



Mojokerto, 15 April 2019

No. 1.04/HR/1.21/IV/2019

Kepada Yth.
Koordinator Tugas Akhir UNIKA Soegijapranata
Up. Ibu Meliana, S.Gz, MS
Di
tempat

Perihal : Proposal Tugas Akhir (Magang)

Dengan hormat,

Membalas surat Saudara tgl 27 Maret 2019, tentang perihal tersebut diatas, maka bersama ini diberitahukan bahwa kami dapat menerima mahasiswa dari Program Studi Teknologi Pangan dengan nama :

1. Tan Enrico Christian. A (16.11.0004).
2. Margareth Cindy L (16.11.0103).

Untuk melakukan Praktek Kerja Lapangan/Magang di PT Multi Bintang Indonesia Tbk. Sampangagung - Mojokerto.

Waktu pelaksanaan : 1 september 2019 s/d 31 Desember 2019 dan dimohon untuk menemui Bp. Asep Saepulloh (HR Brewery Personnel Officer) Telp. 08230 34 432.

Demikian disampaikan dan atas perhatiannya diucapkan terima kasih.

Hormat kami,
PT. MULTI BINTANG INDONESIA TBK.
Sampangagung - Mojokerto



PT MULTI BINTANG INDONESIA TBK
Ninuk Januartini
Human Resources Manager

CC. Brewing & Quality Manager SA
HR Brewery Personnel Officer

PT Multi Bintang Indonesia Tbk.
T (62-321) 2800-800 (Hunting) | F (62-321) 592-508
Jl. Raya Mojosari, Pacet KM. 50, Ds. Sampangagung, Kec. Kutorejo
Mojokerto 61383 - Jawa Timur, Indonesia

LAMPIRAN 13. Hasil Scan Plagiasi



0.87% PLAGIARISM APPROXIMATELY

0.07% IN QUOTES

Report #10265314

PENDAHULUAN
 LATAR BELAKANG PT Multi Bintang Indonesia adalah salah satu perusahaan besar di Indonesia yang bergerak dalam bidang industri minuman bir dan soft drink. Perusahaan yang telah berdiri sejak 1931 ini terkenal lewat produk birnya yang sekarang kita kenal dengan merk "Bintang". Hingga sekarang, perusahaan ini telah memiliki 2 brewery di Indonesia yaitu di Tangerang dan Sampang Agung. Jenis bir yang diproduksi oleh PT Multi Bintang Indonesia Tbk. adalah bir jenis lager dengan kadar alkohol $\pm 4,5\%$. Secara umum, dalam pembuatan bir "Bintang" ini diperlukan dua jenis bahan baku yang meliputi bahan utama dan bahan tambahan (adjuncts). Bahan baku utama ini terdiri dari air, malt, barley dan yeast. Selain itu, dalam proses produksi bir juga ditambahkan bahan baku tambahan seperti CaCl_2 , ZnCl_2 , hops, black malt dan gula. Untuk malt, ada 2 tipe malt yang digunakan yaitu A-malt dan C-malt. A-malt memiliki kandungan ekstrak yang lebih tinggi dan harga yang lebih tinggi daripada C-malt. Seiring berjalannya waktu, penggunaan A-malt yang banyak akan berdampak pada semakin tingginya biaya produksi. Oleh karena itu, sejalan dengan visi, misi, dan nilai-nilai perusahaan, PT Multi Bintang Indonesia selalu berupaya untuk melakukan inovasi dalam meningkatkan kualitas produk yang dihasilkan dengan harga produksi yang lebih rendah. Salah satu upaya yang

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