

LAMPIRAN

Lampiran 1 Penghitungan Dosis Probiotik dan Zinc

1. Dosis probiotik

Dosis probiotik didapatkan dari konversi berat badan manusia dewasa (70 kg) ke berat badan tikus (200 g), yaitu 0.018. Dosis probiotik untuk orang dewasa perhari adalah 340 mg/hari. Perhitungan dosis probiotik untuk tikus dengan berat 200 g, yaitu $0.018 \times 340 \text{ mg/hari} = 6.12 \text{ mg/hari}$

2. Dosis Zinc

Dosis zinc yang diberikan didapatkan dari konversi berat badan manusia dewasa (70 kg) ke berat badan tikus (200 g), yaitu 0.018. Dosis zinc untuk orang dewasa per hari adalah 20 mg/hari. Perhitungan dosis zinc untuk tikus dengan berat 200 g, yaitu $0.018 \times 20 \text{ mg/hari} = 0.36 \text{ mg/hari}$

Lampiran 2 Hasil Analisis SPSS

1. Hasil Deskriptif SPSS

Descriptives

	Kelompok		Statistic	Std. Error	
TinggiVili	Kontrol Negatif	Mean	302.2200	17.43933	
		95% Confidence Interval for Mean	Lower Bound	253.8006	
			Upper Bound	350.6394	
		5% Trimmed Mean	300.3889		
		Median	291.0000		
		Variance	1520.652		
		Std. Deviation	38.99554		
		Minimum	268.40		
		Maximum	369.00		
		Range	100.60		
		Interquartile Range	57.95		
		Skewness	1.766	.913	
		Kurtosis	3.530	2.000	
		Kontrol Positif	Mean	199.5600	12.67524
	95% Confidence Interval for Mean		Lower Bound	164.3679	
			Upper Bound	234.7521	
	5% Trimmed Mean		199.3667		
	Median		201.3000		
	Variance		803.308		
	Std. Deviation		28.34269		
	Minimum		161.90		
	Maximum		240.70		
	Range		78.80		
	Interquartile Range		45.95		
	Skewness		.284	.913	
	Kurtosis		1.459	2.000	
	Probiotik+Zinc	Mean	256.0000	15.49571	
95% Confidence Interval for Mean		Lower Bound	212.9770		
		Upper Bound	299.0230		
5% Trimmed Mean		256.6056			
Median		258.2000			
Variance		1200.585			
Std. Deviation		34.64946			
Minimum		210.80			
Maximum		290.30			
Range		79.50			

		Interquartile Range	67.50	
		Skewness	-.318	.913
		Kurtosis	-1.999	2.000
Probiotik		Mean	210.3600	19.62159
		95% Confidence Interval for Mean	Lower Bound Upper Bound	155.8817 264.8383
		5% Trimmed Mean	208.9333	
		Median	197.7000	
		Variance	1925.033	
		Std. Deviation	43.87520	
		Minimum	165.60	
		Maximum	280.80	
		Range	115.20	
		Interquartile Range	73.25	
		Skewness	1.222	.913
		Kurtosis	1.751	2.000
Zinc		Mean	245.8000	18.88846
		95% Confidence Interval for Mean	Lower Bound Upper Bound	193.3572 298.2428
		5% Trimmed Mean	245.1944	
		Median	246.5000	
		Variance	1783.870	
		Std. Deviation	42.23589	
		Minimum	194.70	
		Maximum	307.80	
		Range	113.10	
		Interquartile Range	74.05	
		Skewness	.519	.913
		Kurtosis	.606	2.000
TebalMukosa	Kontrol Negatif	Mean	273.2200	28.75175
		95% Confidence Interval for Mean	Lower Bound Upper Bound	193.3923 353.0477
		5% Trimmed Mean	270.9222	
		Median	260.4000	
		Variance	4133.317	
		Std. Deviation	64.29088	
		Minimum	207.10	
		Maximum	380.70	
		Range	173.60	
		Interquartile Range	91.15	
		Skewness	1.479	.913
		Kurtosis	3.174	2.000
	Kontrol Positif	Mean	155.2000	6.94039
			Lower Bound	135.9304

	95% Confidence Interval for Mean	Upper Bound	174.4696	
	5% Trimmed Mean		155.2667	
	Median		156.1000	
	Variance		240.845	
	Std. Deviation		15.51918	
	Minimum		135.60	
	Maximum		173.60	
	Range		38.00	
	Interquartile Range		29.95	
	Skewness		-.133	.913
	Kurtosis		-1.729	2.000
Probiotik+Zinc	Mean		151.9800	14.34892
	95% Confidence Interval for Mean	Lower Bound	112.1410	
		Upper Bound	191.8190	
	5% Trimmed Mean		151.8500	
	Median		139.3000	
	Variance		1029.457	
	Std. Deviation		32.08515	
	Minimum		113.80	
	Maximum		192.50	
	Range		78.70	
	Interquartile Range		59.40	
	Skewness		.272	.913
	Kurtosis		-1.749	2.000
Probiotik	Mean		168.5000	13.47527
	95% Confidence Interval for Mean	Lower Bound	131.0866	
		Upper Bound	205.9134	
	5% Trimmed Mean		169.0278	
	Median		183.1000	
	Variance		907.915	
	Std. Deviation		30.13163	
	Minimum		128.40	
	Maximum		199.10	
	Range		70.70	
	Interquartile Range		56.10	
	Skewness		-.599	.913
	Kurtosis		-2.067	2.000
Zinc	Mean		238.6400	20.77536
	95% Confidence Interval for Mean	Lower Bound	180.9584	
		Upper Bound	296.3216	
	5% Trimmed Mean		239.1833	
	Median		244.3000	
	Variance		2158.078	
	Std. Deviation		46.45512	
	Minimum		181.60	

		Maximum	285.90	
		Range	104.30	
		Interquartile Range	91.55	
		Skewness	-.252	.913
		Kurtosis	-2.505	2.000
BBAwal	Kontrol Negatif	Mean	170.0000	1.44914
		95% Confidence Interval for Mean	Lower Bound Upper Bound	165.9765 174.0235
		5% Trimmed Mean	170.0556	
		Median	172.0000	
		Variance	10.500	
		Std. Deviation	3.24037	
		Minimum	166.00	
		Maximum	173.00	
		Range	7.00	
		Interquartile Range	6.00	
		Skewness	-.588	.913
		Kurtosis	-2.898	2.000
	Kontrol Positif	Mean	164.0000	1.94936
		95% Confidence Interval for Mean	Lower Bound Upper Bound	158.5877 169.4123
		5% Trimmed Mean	163.8333	
		Median	163.0000	
		Variance	19.000	
		Std. Deviation	4.35890	
		Minimum	160.00	
		Maximum	171.00	
		Range	11.00	
		Interquartile Range	7.50	
		Skewness	1.268	.913
		Kurtosis	1.488	2.000
	Probiotik+Zinc	Mean	166.4000	1.80555
		95% Confidence Interval for Mean	Lower Bound Upper Bound	161.3870 171.4130
		5% Trimmed Mean	166.5000	
		Median	167.0000	
		Variance	16.300	
		Std. Deviation	4.03733	
		Minimum	160.00	
		Maximum	171.00	
		Range	11.00	
		Interquartile Range	6.50	
		Skewness	-1.017	.913
		Kurtosis	2.031	2.000
	Probiotik	Mean	164.8000	1.85472
		Lower Bound	159.6505	

		95% Confidence Interval for Mean	Upper Bound	169.9495	
		5% Trimmed Mean		164.7778	
		Median		164.0000	
		Variance		17.200	
		Std. Deviation		4.14729	
		Minimum		160.00	
		Maximum		170.00	
		Range		10.00	
		Interquartile Range		8.00	
		Skewness		.236	.913
		Kurtosis		-1.963	2.000
Zinc		Mean		163.8000	1.39284
		95% Confidence Interval for Mean	Lower Bound	159.9329	
			Upper Bound	167.6671	
		5% Trimmed Mean		163.8333	
		Median		165.0000	
		Variance		9.700	
		Std. Deviation		3.11448	
		Minimum		160.00	
		Maximum		167.00	
		Range		7.00	
		Interquartile Range		6.00	
		Skewness		-.437	.913
		Kurtosis		-2.681	2.000
BBPreTreat	Kontrol Negatif	Mean		190.6000	1.63095
		95% Confidence Interval for Mean	Lower Bound	186.0718	
			Upper Bound	195.1282	
		5% Trimmed Mean		190.7222	
		Median		192.0000	
		Variance		13.300	
		Std. Deviation		3.64692	
		Minimum		185.00	
		Maximum		194.00	
		Range		9.00	
		Interquartile Range		6.50	
		Skewness		-1.064	.913
		Kurtosis		.202	2.000
	Kontrol Positif	Mean		176.4000	1.93907
		95% Confidence Interval for Mean	Lower Bound	171.0163	
			Upper Bound	181.7837	
		5% Trimmed Mean		176.2778	
		Median		177.0000	
		Variance		18.800	
		Std. Deviation		4.33590	
		Minimum		172.00	

		Maximum	183.00	
		Range	11.00	
		Interquartile Range	7.50	
		Skewness	.835	.913
		Kurtosis	.510	2.000
Probiotik+Zinc		Mean	180.0000	2.00000
		95% Confidence Interval for Mean	Lower Bound Upper Bound	174.4471 185.5529
		5% Trimmed Mean	180.1111	
		Median	181.0000	
		Variance	20.000	
		Std. Deviation	4.47214	
		Minimum	173.00	
		Maximum	185.00	
		Range	12.00	
		Interquartile Range	7.50	
		Skewness	-.978	.913
		Kurtosis	1.512	2.000
Probiotik		Mean	178.6000	1.56844
		95% Confidence Interval for Mean	Lower Bound Upper Bound	174.2453 182.9547
		5% Trimmed Mean	178.6111	
		Median	178.0000	
		Variance	12.300	
		Std. Deviation	3.50714	
		Minimum	174.00	
		Maximum	183.00	
		Range	9.00	
		Interquartile Range	6.50	
		Skewness	-.025	.913
		Kurtosis	-.874	2.000
Zinc		Mean	177.0000	1.37840
		95% Confidence Interval for Mean	Lower Bound Upper Bound	173.1729 180.8271
		5% Trimmed Mean	177.0556	
		Median	177.0000	
		Variance	9.500	
		Std. Deviation	3.08221	
		Minimum	173.00	
		Maximum	180.00	
		Range	7.00	
		Interquartile Range	6.00	
		Skewness	-.256	.913
		Kurtosis	-1.989	2.000
BBTreat2	Kontrol Negatif	Mean	205.4000	1.69115
			Lower Bound	200.7046

	95% Confidence Interval for Mean	Upper Bound	210.0954	
	5% Trimmed Mean		205.5000	
	Median		207.0000	
	Variance		14.300	
	Std. Deviation		3.78153	
	Minimum		200.00	
	Maximum		209.00	
	Range		9.00	
	Interquartile Range		7.00	
	Skewness		-.793	.913
	Kurtosis		-1.253	2.000
Kontrol Positif	Mean		184.4000	1.80555
	95% Confidence Interval for Mean	Lower Bound	179.3870	
		Upper Bound	189.4130	
	5% Trimmed Mean		184.3333	
	Median		185.0000	
	Variance		16.300	
	Std. Deviation		4.03733	
	Minimum		180.00	
	Maximum		190.00	
	Range		10.00	
	Interquartile Range		7.50	
	Skewness		.351	.913
	Kurtosis		-.950	2.000
Probiotik+Zinc	Mean		192.4000	2.06398
	95% Confidence Interval for Mean	Lower Bound	186.6695	
		Upper Bound	198.1305	
	5% Trimmed Mean		192.4444	
	Median		193.0000	
	Variance		21.300	
	Std. Deviation		4.61519	
	Minimum		186.00	
	Maximum		198.00	
	Range		12.00	
	Interquartile Range		8.50	
	Skewness		-.350	.913
	Kurtosis		-.450	2.000
Probiotik	Mean		191.4000	1.43527
	95% Confidence Interval for Mean	Lower Bound	187.4151	
		Upper Bound	195.3849	
	5% Trimmed Mean		191.4444	
	Median		191.0000	
	Variance		10.300	
	Std. Deviation		3.20936	
	Minimum		187.00	

		Maximum	195.00	
		Range	8.00	
		Interquartile Range	6.00	
		Skewness	-.299	.913
		Kurtosis	-1.021	2.000
Zinc		Mean	188.8000	1.28062
		95% Confidence Interval for Mean	Lower Bound Upper Bound	185.2444 192.3556
		5% Trimmed Mean	188.8333	
		Median	189.0000	
		Variance	8.200	
		Std. Deviation	2.86356	
		Minimum	185.00	
		Maximum	192.00	
		Range	7.00	
		Interquartile Range	5.50	
		Skewness	-.307	.913
		Kurtosis	-1.544	2.000
Ghrelin	Kontrol Negatif	Mean	59.9000	.86507
		95% Confidence Interval for Mean	Lower Bound Upper Bound	57.4982 62.3018
		5% Trimmed Mean	59.9067	
		Median	60.2900	
		Variance	3.742	
		Std. Deviation	1.93436	
		Minimum	57.74	
		Maximum	61.94	
		Range	4.20	
		Interquartile Range	3.83	
		Skewness	-.227	.913
		Kurtosis	-2.869	2.000
	Kontrol Positif	Mean	164.4740	3.59087
		95% Confidence Interval for Mean	Lower Bound Upper Bound	154.5042 174.4438
		5% Trimmed Mean	164.1783	
		Median	161.7300	
		Variance	64.472	
		Std. Deviation	8.02942	
		Minimum	156.48	
		Maximum	177.79	
		Range	21.31	
		Interquartile Range	12.36	
		Skewness	1.451	.913
		Kurtosis	2.724	2.000
Probiotik+Zinc		Mean	72.8700	1.44764
		Lower Bound	68.8507	

		95% Confidence Interval for Mean	Upper Bound	76.8893	
		5% Trimmed Mean		72.7583	
		Median		72.7500	
		Variance		10.478	
		Std. Deviation		3.23701	
		Minimum		69.75	
		Maximum		78.00	
		Range		8.25	
		Interquartile Range		5.55	
		Skewness		1.123	.913
		Kurtosis		1.324	2.000
	Probiotik	Mean		80.3100	1.56216
		95% Confidence Interval for Mean	Lower Bound	75.9727	
			Upper Bound	84.6473	
		5% Trimmed Mean		80.2833	
		Median		81.0000	
		Variance		12.202	
		Std. Deviation		3.49310	
		Minimum		76.35	
		Maximum		84.75	
		Range		8.40	
		Interquartile Range		6.67	
		Skewness		.038	.913
		Kurtosis		-1.827	2.000
	Zinc	Mean		87.1840	.56214
		95% Confidence Interval for Mean	Lower Bound	85.6233	
			Upper Bound	88.7447	
		5% Trimmed Mean		87.1872	
		Median		87.4500	
		Variance		1.580	
		Std. Deviation		1.25697	
		Minimum		85.80	
		Maximum		88.51	
		Range		2.71	
		Interquartile Range		2.48	
		Skewness		-.231	.913
		Kurtosis		-2.896	2.000
GLP1	Kontrol Negatif	Mean		19.8020	.55193
		95% Confidence Interval for Mean	Lower Bound	18.2696	
			Upper Bound	21.3344	
		5% Trimmed Mean		19.8500	
		Median		19.8700	
		Variance		1.523	
		Std. Deviation		1.23415	

	Minimum		17.87	
	Maximum		20.87	
	Range		3.00	
	Interquartile Range		2.17	
	Skewness		-1.063	.913
	Kurtosis		.912	2.000
Kontrol Positif	Mean		5.2680	.26763
	95% Confidence Interval for Mean	Lower Bound	4.5249	
		Upper Bound	6.0111	
	5% Trimmed Mean		5.2756	
	Median		5.2000	
	Variance		.358	
	Std. Deviation		.59843	
	Minimum		4.53	
	Maximum		5.87	
	Range		1.34	
	Interquartile Range		1.17	
	Skewness		-.056	.913
	Kurtosis		-2.304	2.000
Probiotik+Zinc	Mean		11.5340	.23547
	95% Confidence Interval for Mean	Lower Bound	10.8802	
		Upper Bound	12.1878	
	5% Trimmed Mean		11.5339	
	Median		11.5300	
	Variance		.277	
	Std. Deviation		.52653	
	Minimum		10.87	
	Maximum		12.20	
	Range		1.33	
	Interquartile Range		1.00	
	Skewness		.009	.913
	Kurtosis		-1.229	2.000
Probiotik	Mean		15.8660	.34992
	95% Confidence Interval for Mean	Lower Bound	14.8945	
		Upper Bound	16.8375	
	5% Trimmed Mean		15.8289	
	Median		15.5300	
	Variance		.612	
	Std. Deviation		.78245	
	Minimum		15.20	
	Maximum		17.20	
	Range		2.00	

Zinc	Interquartile Range		1.17	
	Skewness		1.742	.913
	Kurtosis		3.302	2.000
	Mean		15.4000	.40222
	95% Confidence Interval for Mean		Lower Bound	14.2833
			Upper Bound	16.5167
	5% Trimmed Mean		15.4039	
	Median		15.5300	
	Variance		.809	
	Std. Deviation		.89939	
	Minimum		14.20	
	Maximum		16.53	
	Range		2.33	
	Interquartile Range		1.66	
	Skewness		-.188	.913
	Kurtosis		-.679	2.000

2. Hasil Uji Normalitas

Tests of Normality

	Kelompok	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
TinggiVili	Kontrol Negatif	.333	5	.073	.818	5	.114
	Kontrol Positif	.245	5	.200*	.960	5	.807
	Probiotik+Zinc	.223	5	.200*	.914	5	.489
	Probiotik	.217	5	.200*	.919	5	.523
	Zinc	.191	5	.200*	.980	5	.934
TebalMukosa	Kontrol Negatif	.361	5	.032	.835	5	.151
	Kontrol Positif	.163	5	.200*	.968	5	.864
	Probiotik+Zinc	.254	5	.200*	.933	5	.617
	Probiotik	.286	5	.200*	.895	5	.382
	Zinc	.214	5	.200*	.904	5	.433
BBAwal	Kontrol Negatif	.331	5	.076	.817	5	.111
	Kontrol Positif	.209	5	.200*	.901	5	.417
	Probiotik+Zinc	.261	5	.200*	.932	5	.608
	Probiotik	.180	5	.200*	.952	5	.754
	Zinc	.250	5	.200*	.885	5	.332
BBPreTreat	Kontrol Negatif	.249	5	.200*	.907	5	.451
	Kontrol Positif	.245	5	.200*	.911	5	.473
	Probiotik+Zinc	.212	5	.200*	.946	5	.709
	Probiotik	.168	5	.200*	.981	5	.940
	Zinc	.235	5	.200*	.903	5	.429
BBTreat2	Kontrol Negatif	.264	5	.200*	.903	5	.429
	Kontrol Positif	.200	5	.200*	.946	5	.708
	Probiotik+Zinc	.152	5	.200*	.990	5	.978
	Probiotik	.191	5	.200*	.958	5	.794
	Zinc	.179	5	.200*	.962	5	.823
Ghrelin	Kontrol Negatif	.232	5	.200*	.878	5	.298
	Kontrol Positif	.279	5	.200*	.871	5	.270

	Probiotik+Zinc	.241	5	.200*	.909	5	.459
	Probiotik	.209	5	.200*	.941	5	.674
	Zinc	.237	5	.200*	.871	5	.272
GLP1	Kontrol Negatif	.213	5	.200*	.881	5	.316
	Kontrol Positif	.243	5	.200*	.895	5	.380
	Probiotik+Zinc	.138	5	.200*	.986	5	.964
	Probiotik	.298	5	.168	.813	5	.104
	Zinc	.157	5	.200*	.990	5	.980

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

a. Lilliefors Significance Correction

3. Hasil Uji Homogenitas

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
TinggiVili	.241	4	20	.912
TebalMukosa	1.427	4	20	.261
Ghrelin	2.192	4	20	.107
GLP1	.784	4	20	.549

4. Hasil Uji *One Way Anova*

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
TinggiVili	Between Groups	33180.134	4	8295.034	5.734	.003
	Within Groups	28933.792	20	1446.690		
	Total	62113.926	24			
TebalMukosa	Between Groups	60641.890	4	15160.473	8.950	.000
	Within Groups	33878.448	20	1693.922		
	Total	94520.338	24			
Ghrelin	Between Groups	34021.039	4	8505.260	459.876	.000
	Within Groups	369.893	20	18.495		
	Total	34390.932	24			
GLP1	Between Groups	602.634	4	150.658	210.440	.000
	Within Groups	14.318	20	.716		
	Total	616.952	24			

5. Hasil Uji Post Hoc

Multiple Comparisons

LSD

Dependent Variable	(I) Kelompok	(J) Kelompok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
TinggiVili	Kontrol Negatif	Kontrol Positif	102.66000*	24.05568	.000	52.4807	152.8393
	Kontrol Negatif	Probiotik+Zinc	46.22000	24.05568	.069	-3.9593	96.3993

	Probiotik	91.86000*	24.05568	.001	41.6807	142.0393
	Zinc	56.42000*	24.05568	.029	6.2407	106.5993
Kontrol	Kontrol Negatif	-102.66000*	24.05568	.000	-152.8393	-52.4807
Positif	Probiotik+Zinc	-56.44000*	24.05568	.029	-106.6193	-6.2607
	Probiotik	-10.80000	24.05568	.658	-60.9793	39.3793
	Zinc	-46.24000	24.05568	.069	-96.4193	3.9393
Probiotik+	Kontrol Negatif	-46.22000	24.05568	.069	-96.3993	3.9593
Zinc	Kontrol Positif	56.44000*	24.05568	.029	6.2607	106.6193
	Probiotik	45.64000	24.05568	.072	-4.5393	95.8193
	Zinc	10.20000	24.05568	.676	-39.9793	60.3793
Probiotik	Kontrol Negatif	-91.86000*	24.05568	.001	-142.0393	-41.6807
	Kontrol Positif	10.80000	24.05568	.658	-39.3793	60.9793
	Probiotik+Zinc	-45.64000	24.05568	.072	-95.8193	4.5393
	Zinc	-35.44000	24.05568	.156	-85.6193	14.7393
Zinc	Kontrol Negatif	-56.42000*	24.05568	.029	-106.5993	-6.2407
	Kontrol Positif	46.24000	24.05568	.069	-3.9393	96.4193
	Probiotik+Zinc	-10.20000	24.05568	.676	-60.3793	39.9793
	Probiotik	35.44000	24.05568	.156	-14.7393	85.6193
TebalMukosa	Kontrol Positif	118.02000*	26.03015	.000	63.7220	172.3180
Negatif	Probiotik+Zinc	121.24000*	26.03015	.000	66.9420	175.5380
	Probiotik	104.72000*	26.03015	.001	50.4220	159.0180
	Zinc	34.58000	26.03015	.199	-19.7180	88.8780
Kontrol	Kontrol Negatif	-118.02000*	26.03015	.000	-172.3180	-63.7220
Positif	Probiotik+Zinc	3.22000	26.03015	.903	-51.0780	57.5180
	Probiotik	-13.30000	26.03015	.615	-67.5980	40.9980
	Zinc	-83.44000*	26.03015	.004	-137.7380	-29.1420
Probiotik+	Kontrol Negatif	-121.24000*	26.03015	.000	-175.5380	-66.9420
Zinc	Kontrol Positif	-3.22000	26.03015	.903	-57.5180	51.0780
	Probiotik	-16.52000	26.03015	.533	-70.8180	37.7780
	Zinc	-86.66000*	26.03015	.003	-140.9580	-32.3620
Probiotik	Kontrol Negatif	-104.72000*	26.03015	.001	-159.0180	-50.4220
	Kontrol Positif	13.30000	26.03015	.615	-40.9980	67.5980
	Probiotik+Zinc	16.52000	26.03015	.533	-37.7780	70.8180
	Zinc	-70.14000*	26.03015	.014	-124.4380	-15.8420
Zinc	Kontrol Negatif	-34.58000	26.03015	.199	-88.8780	19.7180
	Kontrol Positif	83.44000*	26.03015	.004	29.1420	137.7380
	Probiotik+Zinc	86.66000*	26.03015	.003	32.3620	140.9580
	Probiotik	70.14000*	26.03015	.014	15.8420	124.4380
Ghrelin	Kontrol Positif	-104.57400*	2.71990	.000	-110.2476	-98.9004
Negatif	Probiotik+Zinc	-12.97000*	2.71990	.000	-18.6436	-7.2964
	Probiotik	-20.41000*	2.71990	.000	-26.0836	-14.7364
	Zinc	-27.28400*	2.71990	.000	-32.9576	-21.6104
Kontrol	Kontrol Negatif	104.57400*	2.71990	.000	98.9004	110.2476
Positif	Probiotik+Zinc	91.60400*	2.71990	.000	85.9304	97.2776
	Probiotik	84.16400*	2.71990	.000	78.4904	89.8376
	Zinc	77.29000*	2.71990	.000	71.6164	82.9636
Probiotik+	Kontrol Negatif	12.97000*	2.71990	.000	7.2964	18.6436
Zinc	Kontrol Positif	-91.60400*	2.71990	.000	-97.2776	-85.9304
	Probiotik	-7.44000*	2.71990	.013	-13.1136	-1.7664
	Zinc	-14.31400*	2.71990	.000	-19.9876	-8.6404
Probiotik	Kontrol Negatif	20.41000*	2.71990	.000	14.7364	26.0836
	Kontrol Positif	-84.16400*	2.71990	.000	-89.8376	-78.4904
	Probiotik+Zinc	7.44000*	2.71990	.013	1.7664	13.1136
	Zinc	-6.87400*	2.71990	.020	-12.5476	-1.2004
Zinc	Kontrol Negatif	27.28400*	2.71990	.000	21.6104	32.9576

		Kontrol Positif	-77.29000*	2.71990	.000	-82.9636	-71.6164
		Probiotik+Zinc	14.31400*	2.71990	.000	8.6404	19.9876
		Probiotik	6.87400*	2.71990	.020	1.2004	12.5476
GLP1	Kontrol Negatif	Kontrol Positif	14.53400*	.53513	.000	13.4177	15.6503
		Probiotik+Zinc	8.26800*	.53513	.000	7.1517	9.3843
		Probiotik	3.93600*	.53513	.000	2.8197	5.0523
		Zinc	4.40200*	.53513	.000	3.2857	5.5183
	Kontrol Positif	Kontrol Negatif	-14.53400*	.53513	.000	-15.6503	-13.4177
		Probiotik+Zinc	-6.26600*	.53513	.000	-7.3823	-5.1497
		Probiotik	-10.59800*	.53513	.000	-11.7143	-9.4817
		Zinc	-10.13200*	.53513	.000	-11.2483	-9.0157
	Probiotik+Zinc	Kontrol Negatif	-8.26800*	.53513	.000	-9.3843	-7.1517
		Kontrol Positif	6.26600*	.53513	.000	5.1497	7.3823
		Probiotik	-4.33200*	.53513	.000	-5.4483	-3.2157
		Zinc	-3.86600*	.53513	.000	-4.9823	-2.7497
Probiotik	Kontrol Negatif	-3.93600*	.53513	.000	-5.0523	-2.8197	
	Kontrol Positif	10.59800*	.53513	.000	9.4817	11.7143	
	Probiotik+Zinc	4.33200*	.53513	.000	3.2157	5.4483	
	Zinc	.46600	.53513	.394	-.6503	1.5823	
Zinc	Kontrol Negatif	-4.40200*	.53513	.000	-5.5183	-3.2857	
	Kontrol Positif	10.13200*	.53513	.000	9.0157	11.2483	
	Probiotik+Zinc	3.86600*	.53513	.000	2.7497	4.9823	
	Probiotik	-.46600	.53513	.394	-1.5823	.6503	

*. The mean difference is significant at the 0.05 level.

6. Hasil Uji *Repeated Anova* dan Post Hoc

Multivariate Tests^a

Effect	Value	F	Hypothesis df	Error df	Sig.
BB Pillai's Trace	.966	680.692 ^b	1.000	24.000	.000
Wilks' Lambda	.034	680.692 ^b	1.000	24.000	.000
Hotelling's Trace	28.362	680.692 ^b	1.000	24.000	.000
Roy's Largest Root	28.362	680.692 ^b	1.000	24.000	.000

a. Design: Intercept
Within Subjects Design: BB

b. Exact statistic

Pairwise Comparisons

Measure: MEASURE_1

(I) BB	(J) BB	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-26.680*	1.023	.000	-28.791	-24.569
2	1	26.680*	1.023	.000	24.569	28.791

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

7. Hasil Uji Normalitas Kenaikan Berat Badan

Tests of Normality^c

	Kelompok	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
KenaikanBB1	Kontrol Negatif	.367	5	.026	.684	5	.006
	Kontrol Positif	.237	5	.200*	.961	5	.814
	Probiotik+Zinc	.473	5	.001	.552	5	.000
	Probiotik	.473	5	.001	.552	5	.000
KenaikanBB2	Kontrol Negatif	.231	5	.200*	.881	5	.314
	Kontrol Positif	.241	5	.200*	.821	5	.119
	Probiotik+Zinc	.349	5	.046	.771	5	.046
	Probiotik	.473	5	.001	.552	5	.000
	Zinc	.473	5	.001	.552	5	.000

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

a. Lilliefors Significance Correction

c. KenaikanBB1 is constant when Kelompok = Zinc. It has been omitted.

8. Hasil Uji *Kruskal-Wallis* dan *Mann-Whitney*

Test Statistics^{a,b}

	KenaikanBB1	KenaikanBB2
Chi-Square	18.328	20.946
df	4	4
Asymp. Sig.	.001	.000

a. Kruskal Wallis Test

b. Grouping Variable: Kelompok

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Negatif	5	8.00	40.00
	Kontrol Positif	5	3.00	15.00
	Total	10		
KenaikanBB2	Kontrol Negatif	5	8.00	40.00
	Kontrol Positif	5	3.00	15.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	.000	.000
Wilcoxon W	15.000	15.000
Z	-2.660	-2.643
Asymp. Sig. (2-tailed)	.008	.008
Exact Sig. [2*(1-tailed Sig.)]	.008 ^b	.008 ^b

a. Grouping Variable: Kelompok

b. Not corrected for ties.

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Negatif	5	8.00	40.00
	Probiotik+Zinc	5	3.00	15.00
	Total	10		
KenaikanBB2	Kontrol Negatif	5	8.00	40.00
	Probiotik+Zinc	5	3.00	15.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	.000	.000
Wilcoxon W	15.000	15.000
Z	-2.739	-2.660
Asymp. Sig. (2-tailed)	.006	.008
Exact Sig. [2*(1-tailed Sig.)]	.008 ^b	.008 ^b

a. Grouping Variable: Kelompok

b. Not corrected for ties.

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Negatif	5	8.00	40.00
	Probiotik	5	3.00	15.00
	Total	10		
KenaikanBB2	Kontrol Negatif	5	8.00	40.00
	Probiotik	5	3.00	15.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	.000	.000
Wilcoxon W	15.000	15.000
Z	-2.739	-2.712
Asymp. Sig. (2-tailed)	.006	.007
Exact Sig. [2*(1-tailed Sig.)]	.008 ^b	.008 ^b

a. Grouping Variable: Kelompok

b. Not corrected for ties.

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Negatif	5	8.00	40.00
	Zinc	5	3.00	15.00
	Total	10		
KenaikanBB2	Kontrol Negatif	5	8.00	40.00
	Zinc	5	3.00	15.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	.000	.000
Wilcoxon W	15.000	15.000
Z	-2.835	-2.712
Asymp. Sig. (2-tailed)	.005	.007
Exact Sig. [2*(1-tailed Sig.)]	.008 ^b	.008 ^b

a. Grouping Variable: Kelompok

b. Not corrected for ties.

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Positif	5	3.80	19.00
	Probiotik+Zinc	5	7.20	36.00
	Total	10		
KenaikanBB2	Kontrol Positif	5	3.00	15.00
	Probiotik+Zinc	5	8.00	40.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	4.000	.000
Wilcoxon W	19.000	15.000
Z	-1.921	-2.660
Asymp. Sig. (2-tailed)	.055	.008
Exact Sig. [2*(1-tailed Sig.)]	.095 ^b	.008 ^b

a. Grouping Variable: Kelompok

b. Not corrected for ties.

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Positif	5	3.80	19.00
	Probiotik	5	7.20	36.00
	Total	10		
KenaikanBB2	Kontrol Positif	5	3.00	15.00
	Probiotik	5	8.00	40.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	4.000	.000
Wilcoxon W	19.000	15.000
Z	-1.921	-2.712
Asymp. Sig. (2-tailed)	.055	.007
Exact Sig. [2*(1-tailed Sig.)]	.095 ^b	.008 ^b

- a. Grouping Variable: Kelompok
 b. Not corrected for ties.

Ranks

	Kelompok	N	Mean Rank	Sum of Ranks
KenaikanBB1	Kontrol Positif	5	5.00	25.00
	Zinc	5	6.00	30.00
	Total	10		
KenaikanBB2	Kontrol Positif	5	3.00	15.00
	Zinc	5	8.00	40.00
	Total	10		

Test Statistics^a

	KenaikanBB1	KenaikanBB2
Mann-Whitney U	10.000	.000
Wilcoxon W	25.000	15.000
Z	-.643	-2.712
Asymp. Sig. (2-tailed)	.521	.007
Exact Sig. [2*(1-tailed Sig.)]	.690 ^b	.008 ^b

- a. Grouping Variable: Kelompok
 b. Not corrected for ties.

Lampiran 3 *Ethical Clearance*

KOMISI BIOETIKA PENELITIAN KEDOKTERAN/KESEHATAN
FAKULTAS KEDOKTERAN
UNIVERSITAS ISLAM SULTAN AGUNG SEMARANG
 Sekretariat : Gedung C Lantai I Fakultas Kedokteran Unissula
 Jl. Raya Kaligawe Km 4 Semarang, Telp. 024-6583584, Fax 024-6594366

Ethical Clearance

No. 603/VIII/2019/Komisi Bioetik

Komisi Bioetika Penelitian Kedokteran/Kesehatan Fakultas Kedokteran Universitas Islam Sultan Agung Semarang, setelah melakukan pengkajian atas usulan penelitian yang berjudul :

**EFEK KOMBINASI PROBIOTIK DAN ZINC TERHADAP GAMBARAN HISTOLOGI
 USUS HALUS, KADAR *GLUCAGON LIKE PEPTIDE-1*, DAN *GHRELIN*
 (Studi Eksperimental pada Tikus Malnutrisi)**

Peneliti Utama : Perez Wahyu Purnasari
 Pembimbing : Prof. Dr. dr. Taufiq R. Nasihun, M.Kes., Sp.And
 Dr. Siti Thomas Z, SKM., M.Kes
 Tempat Penelitian : Laboratorium Gizi Pusat Studi Pangan dan Gizi Universitas Gajah Mada Yogyakarta

dengan ini menyatakan bahwa usulan penelitian diatas telah memenuhi prasyarat etik penelitian. Oleh karena itu Komisi Bioetika merekomendasikan agar penelitian ini dapat dilaksanakan dengan mempertimbangkan prinsip-prinsip yang dinyatakan dalam Deklarasi Helsinki dan panduan yang tertuang dalam Pedoman Nasional Etik Penelitian Kesehatan (PNEPK) Departemen Kesehatan RI tahun 2004.

Semarang, 26 Agustus 2019
 Komisi Bioetika Penelitian Kedokteran/Kesehatan
 Fakultas Kedokteran Unissula
 Ketua,


 (dr. Sofwan Dahlan, Sp.F(K))

Lampiran 4 Surat Izin Penelitian di Laboratorium Pusat Studi Pangan dan Gizi Universitas Gadjah Mada Yogyakarta



**YAYASAN BADAN WAKAF SULTAN AGUNG
UNIVERSITAS ISLAM SULTAN AGUNG (UNISSULA)
PROGRAM STUDI MAGISTER BIOMEDIK (S-2)
FAKULTAS KEDOKTERAN**

Jl. Raya Kaligawe Km.4 Semarang 50112 Telp. (024) 6583584 Fax. (024) 659 4366 ext. 631 / 632

No : 204/ B.1/SA-K-BIOMED/IX/2019
Lampiran : -
Perihal : Permohonan Ijin Penelitian
Kepada : **Yth. Ka. Laboratorium PAU FK UGM**

**FORM-SA-K-
BIOMED-014**

di

YOGYAKARTA

Assalamu'alaikum wr. wb.

Dengan ini kami hadapkan mahasiswa Prodi Magister Ilmu Biomedik Fakultas Kedokteran Universitas Islam Sultan Agung (Unissula) Semarang,

Nama : **PEREZ WAHYU PURNASARI**

NIM : **MBK. 17.10.01.0127**

Semester : **IV (empat)**

Mohon diijinkan untuk melakukan Penelitian 30 sebagai bahan penulisan Tesis dengan judul:

EFEK KOMBINASI PROBIOTIK DAN ZINC TERHADAP GAMBARAN HISTOLOGI USUS HALUS, KADAR GLUGACON LIKE PEPTIDE-1, DAN GHRELIN (Studi Eksperimental pada Tikus Malnutrisi)

dengan Pembimbing I : Prof.Dr.dr.H. Taufiqurrachman N,M.Kes,Sp.And

Pembimbing II : Dr.Siti Thomas Z,SKM,M.Kes

Demikian atas bantuan serta kerjasamanya diucapkan terima kasih.

Wassalamu'alaikum wr. wb.


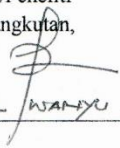
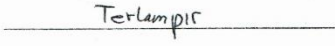

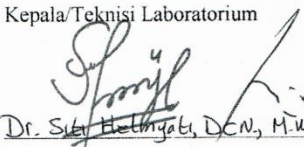
Semarang, 05 September 2019

Ka Prodi Magister Biomedik
Fakultas Kedokteran UNISSULA,

Prof.Dr. dr. H. Taufiqurrachman N, M.Kes.,Sp.And
NIK. 229.186.023



Lampiran 5 Formulir Pemakaian Fasilitas Laboratorium Gizi (Hewan Coba)

	
UNIVERSITAS GADJAH MADA Pusat Studi Pangan dan Gizi Jln. Teknika Utara, Berek, YOGYAKARTA 55281 Telepon : 0274-589242, Web : www.cfns.ugm.ac.id Email : cfns@ugm.ac.id	
FORMULIR PEMAKAIAN FASILITAS LABORATORIUM GIZI (HEWAN COBA)	
Nama Mahasiswa/Peneliti	: PEREZ WAHYU PURNASARI
No. Mahasiswa	: MBK 17.100.10.127
Jurusan/Fakultas/Universitas	: MAJISTER BIOMEDIK, FK UNISSULA
Alamat Rumah & Nomor Telpon/HP	: JALAN JATEN GEOTE TIMUR II PEDURUNGAN TENGAH SETARANG 087 830 9 75357
Topik Penelitian/Judul :	: EFEK KOMBINASI PROBIOTIK DAN ZINC TERHADAP GAMBARAN HISTOLOGI USUS HALUS, KADAR GLUCAGON LIKE PEPTIDE-1, DAN SHRELIN
Mulai bekerja pada tanggal	: 23 September 2019
Rencana penyelesaian tanggal	: 23 Oktober 2019
Diperpanjang sampai tanggal	:
Bekerja di laboratorium	: 1. Gizi
Mahasiswa/Peneliti Yang bersangkutan,	Yogyakarta, 10 September 2019 Pembimbing Tesis/Skripsi Dekan Fakultas/Pimpinan Lembaga
 PEREZ WAHYU PURNASARI	 Terlampir
Mengetahui : Sekretaris,  Wahguning Hartati	Kepala/Teknisi Laboratorium  Dr. Siti Helmiyati, DCN, M.Kes.

Lampiran 6 Surat Keterangan Bebas Peminjaman



UNIVERSITAS GADJAH MADA

Pusat Studi Pangan dan Gizi
 Jln. Teknika Utara, Berek, YOGYAKARTA 55281
 Telepon : 0274-589242, Web : www.cfns.ugm.ac.id
 Email : cfns@ugm.ac.id

SURAT KETERANGAN BEBAS PEMINJAMAN

Menerangkan bahwa :

Nama Mahasiswa/Peneliti

: PEREZ WAHYU PURNASARI

No. Mahasiswa

: MBK 1710010127

Jurusan/Fakultas/Universitas

: MAGISTER BIOMEDIK FAKULTAS
 KEDOKTERAN UNISSULA

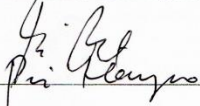
Alamat Rumah & Nomor Telp/HP

: JALAN JATEN GEDHE TIMUR II B3
 RT. 01/RW. 06 PEDURUNGAN,
 SEMARANG / 087830875357

Tidak mempunyai pinjaman peralatan dan bon bahan di laboratorium Pusat Studi Pangan dan Gizi Universitas Gadjah Mada

Yogyakarta, 11 NOVEMBER 2019

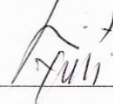
Teknisi,
 Laboratorium Mikrobiologi



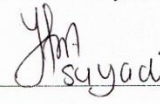
Teknisi,
 Laboratorium Kimia dan Biokimia




Teknisi,
 Laboratorium Gizi



Teknisi,
 Laboratorium Rekayasa Pangan,



Mengetahui :
 Kepala PSPG,



 Prof. Dr. Ir. Endang S. Rahayu, MS
 NIP. 195402221980032001

**Lampiran 6 Surat Izin Penelitian di Laboratorium Patologi Anatomi RS Islam
Sultan Agung Semarang**



**YAYASAN BADAN WAKAF SULTAN AGUNG
UNIVERSITAS ISLAM SULTAN AGUNG (UNISSULA)
FAKULTAS KEDOKTERAN
PROGRAM STUDI BIOMEDIK (S-2)**

Jl. Raya Kaligawe Km. 4 PO. Box. 1054 Telp. (024) 6583584 Psw : 631, 632 Fax. (024) 6594366 Semarang 50112

No : 268 / B.1/SA-K-BIOMED/XI/2019

Lampiran : -

Perihal : Permohonan Ijin Penelitian

Kepada : **Yth. Ka. Laboratorium Patologi Anatomi RSI Sultan Agung**

di

**FORM-SA-K-
BIOMED-014**

SEMARANG

Assalamu'alaikum wr. wb.

Dengan ini kami hadapkan mahasiswa Prodi Magister Ilmu Biomedik Fakultas Kedokteran Universitas Islam Sultan Agung (Unissula) Semarang,

Nama : **PEREZ WAHYU PURNASARI**

NIM : **MBK.17.10.01.0127**

Semester : **IV (Empat)**

Mohon diijinkan untuk melakukan Penelitian sebagai bahan penulisan Tesis dengan judul:

EFEK KOMBINASI PROBIOTIK DAN ZINC TERHADAP GAMBARAN HISTOLOGI USUS HALUS, KADAR GLUGACON LIKE PEPTIDE-1, DAN GHRELIN (Studi Eksperimental pada Tikus Malnutrisi)

dengan Pembimbing I : Prof.Dr.dr.H. Taufiqurrachman N,M.Kes,Sp.And

Pembimbing II : Dr.Siti Thomas Z,SKM,M.Kes

Demikian atas bantuan serta kerjasamanya diucapkan terima kasih.

Wassalamu'alaikum wr. wb.

Semarang, 8 November 2019

Ka Prodi Magister Biomedik
Fakultas Kedokteran UNISSULA,

Prof.Dr. dr. H. Taufiqurrachman N, M.Kes., Sp.And

NIK. 2201806099



Lampiran 7 Hasil Pembacaan Preparat Gambaran Histologi Usus Halus



LABORATORIUM PATOLOGI ANATOMI

NOMOR PREPARAT	TINGGI VILI			RATA-RATA	TEBAL MUKOSA			RATA-RATA
1.1	301.9	275.7	227.6	268.4	229.7	210.1	181.6	207.1
1.2	240.7	326.0	238.5	268.4	161.9	144.4	190.4	165.6
1.3	308.5	288.8	275.7	291.0	256.0	271.3	253.8	260.4
1.4	326.0	450.7	330.4	369.0	343.5	444.2	354.5	380.7
1.5	251.6	280.1	365.4	299.0	240.7	282.3	240.7	254.6
1.6	295.4	258.2	297.6	283.7	304.1	275.7	210.1	263.3
2.1	181.6	201.3	339.1	240.7	151.0	168.5	113.8	144.4
2.2	166.3	271.3	166.3	201.3	161.9	183.8	175.0	173.6
2.3	439.8	328.2	437.6	401.9	188.2	113.8	166.3	156.1
2.4	186.0	194.7	190.4	190.4	122.5	140.0	144.4	135.6
2.5	207.9	155.4	122.5	161.9	175.0	159.7	133.5	156.1
2.6	221.0	78.8	310.7	203.5	251.6	157.5	89.7	166.3
3.1	306.3	299.8	264.8	290.3	126.9	107.2	107.2	113.8
3.2	291.0	269.1	304.1	288.1	199.1	168.5	164.1	177.2
3.3	164.1	199.1	179.4	180.9	153.2	157.5	144.4	151.7
3.4	236.3	258.2	280.1	258.2	107.2	166.3	137.8	137.1
3.5	207.9	225.4	199.1	210.8	175.0	168.5	234.1	192.5
3.6	199.1	247.2	251.6	232.6	159.7	140.0	118.2	139.3
4.1	131.3	140.0	137.8	136.4	87.5	105.0	89.7	94.1
4.2	196.9	146.6	153.2	165.6	168.5	118.2	148.8	145.2
4.3	293.2	266.9	282.3	280.8	168.5	221.0	207.9	199.1
4.4	153.2	164.1	247.2	188.2	148.8	170.7	240.7	186.7
4.5	177.2	264.8	216.6	219.5	179.4	199.1	170.7	183.1
4.6	181.6	151.0	260.4	197.7	111.6	157.5	116.0	128.4
5.1	286.6	207.9	277.9	257.5	264.8	196.9	271.3	244.3
5.2	367.6	282.3	273.5	307.8	186.0	266.9	387.3	280.1
5.3	245.1	216.6	205.7	222.5	249.4	273.5	334.8	285.9
5.4	297.6	188.2	253.8	246.5	205.7	196.9	201.3	201.3
5.5	212.2	216.6	155.4	194.7	131.3	242.9	170.7	181.6
5.6	194.7	120.3	205.7	173.6	89.7	144.4	159.7	131.3

Semarang, 15 Januari 2020



dr. Susilorini, Msi Med, Sp PA