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Poster Presentation
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EFFECT OF *Lactobacillus acidophillus* ON NUTRIGENOMICS IN NEW NORMAL ERA

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ABSTRACT

New normal era COVID-19 crucial problem of immunity. Nutrigenomic concept by utilizing one of the beneficial bacteria for the body, *Lactobacillus acidophillus*. Research purposes This is to obtain information about the effect of *Lactobacillus acidophillus* on nutrigenomics on increasing body immunity in terms of body weight and height . **Method** was a laboratory experimental using experimental animals (Mus Musculus). Treatment of mice (Mus Musculus) consisted of 6 treatment groups, namely, giving 100% *Lactobacillus acidophillus* bacteria in capsule form plus vitamin C (P1) , giving 100% *Lactobacillus acidophillus* bacteria in supplement form plus vitamin C (P2) , giving yogurt + vitamins C (P3) , giving vitamin C (K 1 +) , giving 100% *Lactobacillus acidophillus* bacteria in capsule form (K 2 +) and negative control without any administration (K-). **Analysis** using ANNOVA Windows SPSS type- 24 followed by Dunnet test T3 d e n gan α level of 0.05 or 5%. **Result** shows that not there is a real difference to the weight gain in P1 with the results from 11 to 24.86 ± 0.6 to 13.8, the error factor is the granting suspension P1 using the sonde, the P2, P2, K (-) , K1 (+), K2 (+) there is an increase in weight yield of about 18.4 to 28.86 ± 0.6 -3.3 . While the results of the research on the increase in height showed that P1 still did not increase in height with the results of 5.67-17.67 ± 0.57-1.11, and on P2, P2, K (-), K1 (+), K2 (+) there is an increase in the height of the results around 16.33-19 ± 0-2.08. **Conclusion** is that giving *Lactobacillus acidophillus* bacteria to Nutrigenomics can increase body immunity, especially in increasing height.

Keywords: *New normal era , COVID-19, Nutrigenomic, Lactobacillus acidophillus*

INTRODUCTION

The COVID-19 pandemic restlessness has succeeded in making the government and all Indonesian citizens uneasy, but with the issuance of various policies and actions by the government, the number of Covid 19 transmission has not decreased, many reasons are found in the field starting from a decrease in buying and selling power, the number of factories being closed which results in increased unemployment. . Coupled with the government policy to provide leniency by releasing many assisted citizens, crime is rampant, so that people do not heed policies that are made and do whatever they want until the slogan "INDONESIA WHATEVER" appears[4,5,6].

With the food we consume, we can turn off our bad genes and express the genes so that we can optimize our health. The development of nutrigenomic science is a crucial moment to revolutionize human understanding of what is eaten[9,11]It has been found that food can interact with single nucleotide polymorphisms (snips) in DNA and activate certain genes. For example, eating shrimp can cause skin allergies, while assuming broccoli rich in anti-cancer properties can activate detoxification[10.15].

We strive to provide solutions in the New Normal era based on nutrigenomics using Lactobacillus acidophilus bacteria which are added or processed in the form of milk, supplements in capsules and tablets to help the absorption of nutrients, vitamins in the body so that it can increase personal immunity, so that it can pass the era this new normal with a healthy body and free of covid19.

MATERIAL AND METHODS

This type of research is experimental with the aim of knowing whether there is an increase in the body's absorption of nutrients and vitamins consumed by mice after consuming Lactobacillus acidophilus.source. A total of 30 mice were prepared with details of 5 treatments with 5 repetitions, a total of 25 and we added 5 to the reserves, assuming each treatment had 1 mouse reserve.Any modifications to existing methods should also be described. Treatment of mice (Mus Musculus) consisted of 6 treatment groups, namely, giving 100% *Lactobacillus acidophillus* bacteria in capsule form plus vitamin C (P1) , giving 100% *Lactobacillus acidophillus* bacteria in supplement form plus vitamin C (P2) , giving yogurt + vitamins C (P3) , giving vitamin C (K 1 +) , giving 100% *Lactobacillus acidophillus* bacteria in capsule form (K 2 +) and negative control without any administration (K-)

DATA ANALYSIS TECHNIQUE

Data analysis was carried out by qualitative analysis based on data, facts and information collected while promoting representative tracing to avoid biased data[14]. Then it is studied qualitatively in accordance with the theory used and developed. Because this research is a case study, the analysis is still based on case study principles. Researchers can build new domains as long as they relate to the aspects being analyzed [3]. Using Annova Windows SPSS type- 24 followed by Dunnet test T3 dengan α level of 0.05 or 5%.

RESULTS

Tabel. 1.1 Hasil penelitian.

PERLAKUAN	ULANGAN	PERHITUNGAN BERAT BADAN (g)							RATA-RATA	Standar Deviasi
		1	2	3	4	5	6	7		
Achidophilus 100% + Vit.C	1	24	27	0	0	0	0	0	7.286	12.473
	2	22	23	22	21	19	20	21	21.143	1.345
	3	24	25	25	27	25	25	26	25.286	0.951
	4	22	27	28	0	0	0	0	11	13.844
	5	25	26	25	25	24	24	25	24.857	0.69
Achidopilus Suplemen + Vit.C	1	22	25	23	23	23	22	21	22.714	1.254
	2	24	30	29	29	19	28	28	26.714	3.904
	3	22	23	22	23	24	23	23	22.857	0.69
	4	22	24	24	25	25	25	25	24.286	1.113
	5	20	19	18	20	18	17	17	18.429	1.272
Yogurt + Vit.C	1	24	30	30	30	30	27	30	28.714	2.36
	2	21	23	23	25	25	25	25	23.857	1.574
	3	24	26	27	30	28	27	28	27.143	1.864
	4	20	23	23	21	22	19	20	21.143	1.574
	5	26	31	28	31	30	28	28	28.857	1.864
Kontrol Negatif (-) Makanan	1	23	26	26	27	25	25	26	25.429	1.272
	2	25	28	25	29	29	29	29	27.714	1.89
	3	24	24	26	27	26	26	27	25.714	1.254
	4	22	23	27	26	24	25	26	24.714	1.799
	5	19	19	26	24	23	24	26	23	2.944
Kontrol Positif (+) Vit.C	1	22	26	24	26	27	23	24	24.571	1.813
	2	23	26	26	28	28	27	29	26.714	1.976
	3	24	26	25	27	26	26	25	25.571	0.976
	4	22	29	22	29	29	28	29	26.857	3.338
	5	23	25	19	27	26	25	27	24.571	2.82
Kontrol Positif (+) Achidopilus 100%	1	24	24	23	23	22	20	20	22.286	1.704
	2	25	27	27	29	28	28	30	27.714	1.604
	3	23	27	27	28	28	27	27	26.714	1.704
	4	20	23	24	25	26	23	24	23.571	1.902
	5	24	25	23	26	25	24	25	24.571	0.976

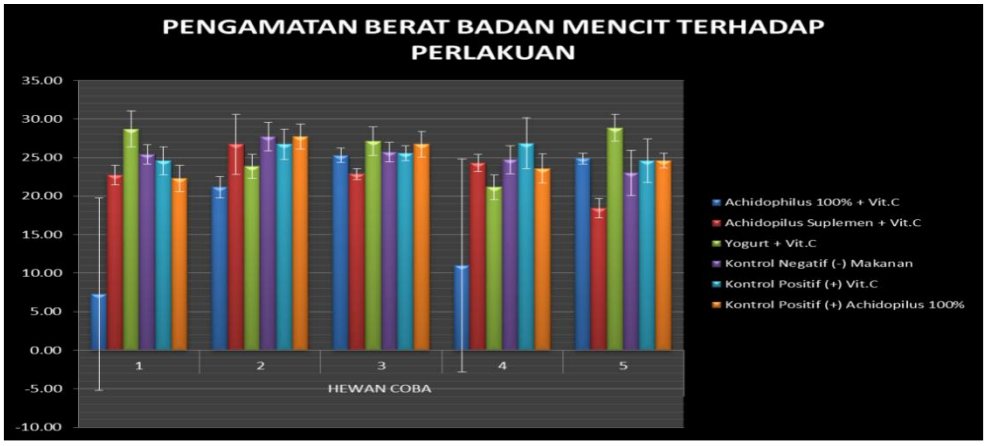
Tabel 1.2 . Perhitungan Dunnett

Multiple Comparisons							
Dependent Variable:							
(I) Perlakuan			Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Dunnett T3	Achidopilus 100% + Vit.c	Achidopilus suplemen+Vit.c	-5.0857	3.9382	0.91	-23.167	12.995
		Yogurt + Vit.c	-8.0286	3.9921	0.57	-25.996	9.939
		K(-) Makanan	-7.4	3.7775	0.604	-26.063	11.263
		K(+) Vit.C	-7.7429	3.7327	0.554	-26.649	11.163
		K(+) Achidopilus 100%	-7.0571	3.8317	0.659	-25.478	11.363
	Achidopilus suplemen+Vit.c	Achidopilus 100% + Vit.c	5.0857	3.9382	0.91	-12.995	23.167
		Yogurt + Vit.c	-2.9429	2.0181	0.858	-10.819	4.933
		K(-) Makanan	-2.3143	1.5508	0.836	-8.819	4.19
		K(+) Vit.C	-2.6571	1.4383	0.654	-9.252	3.938
		K(+) Achidopilus 100%	-1.9714	1.6784	0.955	-8.663	4.72
	Yogurt + Vit.c	Achidopilus 100% + Vit.c	8.0286	3.9921	0.57	-9.939	25.996
		Achidopilus suplemen+Vit.c	2.9429	2.0181	0.858	-4.933	10.819
		K(-) Makanan	0.6286	1.683	1	-6.594	7.851
		K(+) Vit.C	0.2857	1.58	1	-7.091	7.663
		K(+) Achidopilus 100%	0.9714	1.8014	1	-6.34	8.283
	K(-) Makanan	Achidopilus 100% + Vit.c	7.4	3.7775	0.604	-11.263	26.063
		Achidopilus suplemen+Vit.c	2.3143	1.5508	0.836	-4.19	8.819
		Yogurt + Vit.c	-0.6286	1.683	1	-7.851	6.594
		K(+) Vit.C	-0.3429	0.9103	1	-4.053	3.368
		K(+) Achidopilus 100%	0.3429	1.2558	1	-4.639	5.324
	K(+) Vit.C	Achidopilus 100% + Vit.c	7.7429	3.7327	0.554	-11.163	26.649
		Achidopilus suplemen+Vit.c	2.6571	1.4383	0.654	-3.938	9.252
		Yogurt + Vit.c	-0.2857	1.58	1	-7.663	7.091
		K(-) Makanan	0.3429	0.9103	1	-3.368	4.053
		K(+) Achidopilus 100%	0.6857	1.1139	1	-4.118	5.489
	K(+) Achidopilus 100%	Achidopilus 100% + Vit.c	7.0571	3.8317	0.659	-11.363	25.478
		Achidopilus suplemen+Vit.c	1.9714	1.6784	0.955	-4.72	8.663
		Yogurt + Vit.c	-0.9714	1.8014	1	-8.283	6.34
		K(-) Makanan	-0.3429	1.2558	1	-5.324	4.639
		K(+) Vit.C	-0.6857	1.1139	1	-5.489	4.118
Dunnett t (2-a	Achidopilus 100% + Vit.c	K(+) Achidopilus 100%	-7.0571*	2.5549	0.043	-13.943	-0.171
	Achidopilus suplemen+Vit.c	K(+) Achidopilus 100%	-1.9714	2.5549	0.901	-8.858	4.915
	Yogurt + Vit.c	K(+) Achidopilus 100%	0.9714	2.5549	0.995	-5.915	7.858
	K(-) Makanan	K(+) Achidopilus 100%	0.3429	2.5549	1	-6.543	7.229
	K(+) Vit.C	K(+) Achidopilus 100%	0.6857	2.5549	0.999	-6.201	7.572
*. The mean difference is significant at the 0.05 level.							
a. Dunnett t-tests treat one group as a control, and compare all other groups against it.							

Tabel 1.3 Standard Deviasi

PERLAKUAN	HEWAN COBA				
	1	2	3	4	5
Achidophilus 100% + Vit.C	7.29	21.14	25.29	11.00	24.86
STANDAR DEVIASI	12.4728	1.345185	0.95119	13.84437	0.690066
PERLAKUAN	HEWAN COBA				
	1	2	3	4	5
Achidopilus Suplemen + Vit.C	22.71	26.71	22.86	24.29	18.43
STANDAR DEVIASI	1.25357	3.9036	0.690066	1.112697	1.272418
PERLAKUAN	HEWAN COBA				
	1	2	3	4	5
Yogurt + Vit.C	28.71	23.86	27.14	21.14	28.86
STANDAR DEVIASI	2.36039	1.573592	1.864454	1.573592	1.726149
PERLAKUAN	HEWAN COBA				
	1	2	3	4	5
Kontrol Negatif (-) Makanan	25.43	27.71	25.71	24.71	23.00
STANDAR DEVIASI	1.27242	1.889822	1.253566	1.799471	2.94392
PERLAKUAN	HEWAN COBA				
	1	2	3	4	5
Kontrol Positif (+) Vit.C	24.57	26.71	25.57	26.86	24.57
STANDAR DEVIASI	1.81265	1.976047	0.9759	3.338092	2.819997
PERLAKUAN	HEWAN COBA				
	1	2	3	4	5
Kontrol Positif (+) Achidopilus 100%	22.29	27.71	26.71	23.57	24.57
STANDAR DEVIASI	1.70434	1.603567	1.704336	1.902379	0.9759

Grafik 1.1. Hasil Pengamatan Berat Badan



DISCUSSION

Lactobacillus acidophilus occurs naturally in the human body as well as many fermented foods, such as sauerkraut and miso[2]. Manufacturers also add L. acidophilus to yogurt and other dairy products. Probiotics are beneficial strains of live yeast and bacteria[17]. Studies indicate that consuming probiotics, such as L. acidophilus, can help support digestion and may offer a range of other health benefits[7]. Genomics-based nutrition can increase knowledge for diet and lifestyle choices that may change susceptibility to disease and increase health potential[1]. Though research results have shown there is an interaction between nutrition and disease. These interactions involve micronutrients that can affect protein, transcription factors and genomics in body metabolism. Nutrients intake can directly contribute to disease[16]. The highest average results of weight change were found in the treatment of yogurt and vitamin C. The yogurt given here contains 100% Lactobacillus acidophilus. Shows that not there is a real difference to the weight gain in P1 with the results from 11 to 24.86 ± 0.6 to 13.8, the error factor is the granting suspension P1 using the sonde, the P2, P2, K (-) , K1 (+), K2 (+) there is an increase in weight yield of about 18.4 to 28.86 ± 0.6 -3.3 . While the results of the research on the increase in height showed that P1 still did not increase in height with the results of 5.67-17.67 ± 0.57-1.11, and on P2, P2, K (-), K1 (+), K2 (+) there is an increase in the height of the results around 16.33-19 ± 0-2.08.

CONCLUSION

Different components have distinct roles in microbial growth and may modulate functions of the intestinal microbiome[13], Lactobacillus acidophilus occurs naturally in the human and animal gastrointestinal tract and mouth[2] Some strains of Lactobacillus acidophilus may be considered to have probiotic characteristics These strains are commercially used in many dairy products, sometimes together with Streptococcus thermophilus and Lactobacillus delbrueckii subsp. bulgaricus in the production of acidophilus-type yogurt, or acidophiline[7,8]. Lactobacillus acidophilus, like many probiotic supplements, have many claims made of health benefits when consumed, generally by improving or restoring the gut flora[17]. Its genome has been sequencedis that giving Lactobacillus acidophillus bacteria to Nutrigenomics can increase body immunity, especially in increasing height.

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