



[BCREC] Revision Required of Your Manuscript [BCREC-2020-9366]3 Yahoo/Terkirim

Prof. Dr. Bunjerd Jongsomjit <br/>
bunjerd.j@chula.ac.th><br/>
Kepada:Dr. Indro Sumantri<br/>
Cc:Hadiyanto Hadiyanto<br/>
Sel, 1 Des 2020 jam 14.42<br/>
Journal Name: Bulletin of Chemical Reaction Engineering & Catalysis<br/>
Article Title: Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition<br/>
of Preservative Material of Sodium Benzoate<br/>
Ms-ID: BCREC-2020-9366

Dear Dr. Indro Sumantri,

•

Reviewers have now commented on your paper (attached below this email). You will see that they are advising that you must revise your manuscript. If you are prepared to undertake the work required, I would be pleased to reconsider my decision.

For your guidance, reviewers' comments can be read in your Author online interface. If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.

\*\*\*\*>>>>Please be noted that you have up to 1 (one) months from now to revise your manuscript, unless your manuscript will be considered as a new submitted manuscript. If you need additional

time to complete your revision, please let us know by replying to this email and informing us of the date you expect to submit it. <<<<\*\*\*\*

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The revised document files MUST include:

- One (1) file for Revision Note file in a table form with respect to Reviewers comments including the location of the revision on the revised manuscript. Template MS Word File of this Revision Note can be downloaded here: https://bit.ly/3cvzcS8

- One (1) file for Revised Manuscript file according to Template-based format (MS Word file) (please blue-color highlighted texts in the revised sentences).

\_\_\_\_\_

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For second and continuing order of revision of manuscript, please just add your latest version file(s), do not delete the previous round of file(s) of manuscript.

Thank you for submitting to this journal.

Yours sincerely,

Prof. Dr. Bunjerd Jongsomjit Department of Chemical Engineering, Chulalongkorn University , Bangkok, Thailand bunjerd.j@chula.ac.th

{\$comments} (Regional Editor for Asia-Pacific) Bulletin of Chemical Reaction Engineering & Catalysis (<u>https://bcrec.id</u>) Department of Chemical Engineering, Chulalongkorn University, Bangkok, Thailand

Reviewer B: see the attached Reviewer D:

The following comments should be address:

• The reason of adding sucrose during the acclimatization should be explained. Is the concentration of carbon in the waste as it is not enough? How about during AD?

• Amount of N, P, K added should be explained clearly as well as the source (fertilizer?)

• Room temperature should be clearly stated in oC

• The meaning of OLR should be given in the first appearance in the manuscript (abstract?) before 3.1.

• There are some redundancies in explaining some procedures such as the use of 2 L reactors, method of measuring gas using water displacement method. This could be the result of using three similar subtopics: 2.3. Experimental setup, 2.4. Experimental design, 2.5. Experimental procedures. This should be rewritten more concisely.

• SB concentration was varied 0%, 20%, 40%, 60%, 80% and 100%, however, there is no information about the concentration of SB in the real wastewater.

• Fig. 1....and the decrease was detected to be minimal at low OLR and amplified with an elevation of OLR. Pls explain this statement, since this seems not clearly seen in Fig. 1.

• ....the increase of the initial SB from 400 to 800 mg/L caused the decline in biogas production. This statement is not clear, since in Fig 1, increase from 400 to 800 at the same OLR resulted in higher cumulative biogas.

• Fig. 2...the formation of methane was unsurprisingly followed by a reduction in pH, and the range of the methanogenic process was found to lie within 6.5 to 8.

• There is no pH data shown.

• The pH was set at 7.0-7.5. The information indicates no reduction in pH? Pls explain

• Statement: Figures 3a and b indicated the yield of MLSS biogas to be between 4.8 g/L and 7.2 g/L with the presence of SB in the system. This statement is not clear, since no information of yield in these two figures.

• The importance of investigating the kinetic of the process need be explained more clearly. Since the presence of SB in AD reactor resulted in the decrease of biogas, is it needed to design an AD reactor with such condition as it is? Please explain, referring to literature, if there is any modification conducted by other researchers working on similar inhibitory process to improve the process. Alternatively, if the real range of concentration of SB in an actual system is known, best operating conditions that can overcome the problem might be firstly fixed prior to studying the kinetics. Please explain in text.

• Eq (3) reveals that all SB consumed by microbes was converted completely to biogas, regardless there are many reaction steps producing many products or intermediate products in anaerobic digester. This correlation should be better supported by confirmation of mass balance data of the SB consumed and the biogas produced.

## COMMENTS OF REVIEWER

# Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition of Preservative Material of Sodium Benzoate

Indro Sumantri<sup>1\*</sup>, H. Hadiyanto<sup>1</sup>

SECTION IN THE	SPECIFIC COMMENTS		
REVIEW			
COMMENT			
FORM			
TITLE	" with addition of preservative material of sodium benzoate" Why the		
	do you mean "with addition"? Is the term similar with "wastewater containing sodium benzoate (SB)". If similar use the consistent world.		
ABSTRACT	This research was aimed to evaluate the production of biogas from wastewater containing sodium benzoate (SB)But, at the last sentences the decrease in OLR in wastewater follows the first order kinetic with kinetic rate constant. The objective and the results of kinetic		

	do not consistent. The objective is biogas production but the results is		
	decrease in OLR wastewater		
	The results indicated a reduction in the cumulative biogas by the addition		
	of sodium benzoate, compared to the control condition. Add information		
	about the control condition		
	Moreover, the decrease in OLR in wastewater follows the first order		
	kinetic with kinetic rate constant (k). Add information about OLR		
INTRODUCTION	Anaerobic digestion requires certain environmental conditions to		
	generate optimum yield and any chemical substances present may hinder		
	this process. These inhibitors The word "These inhibitor isnot relevan		
	with previous sentences. Please add information about inhibitor.		
	According to Kiel et al [6], benzoic acid is an essential starting material		
	for synthesizing various products in the chemical industry including food		
	preservatives, artificial flavors and insect repellent. Also, soaium benzoate,		
	the derivative sait is popularly used to increase the food and beverage		
	about henzoic acid in wastewater		
	about benzoie acid in wastewater		
	Wang et al [10] disclosed anaerobic digestion as an effective approach		
	towards the treatment of phenolic wastewater, while Jiang et al. [11]		
	reported sodium benzoate is derived from phenolic substances. Therefore.		
	this study aims to discover the salt's influence on AD. The explanantion		
	about the aims of this study do not relevant with previous sentences. Please		
	explain the objective clearly. Please explain the novelty more clearly		
METHODS	In addition, PH for the SB set up was extracted from a local chemical		
2.1. Materials	store, while sucrose was derived from food stores. The word extracted is		
	confusing? Please use sentences or word more exactly. The word derived		
	is confusing. Please use more clear sentences		
	SB is a model solution containing sodium hydroxide and hydrochloric		
	acid obtained from Sigma-Aldrich Corp (purity=98%). Why the author use		
	sodium hydroxide and hydrochloric acid for SB model. There are no		
	explanation about this . Please explain in introduction or method.		
2.2. Acclimatization	However, water sampler was used to accumulate activated sludge in the		
of activated sludge.	anderobic tank. This sencence is confusing		
	Consequently, anderobic studge was accumulized in the lank and set al		
	hydrochloric acid depending on the nature. This sentence is confising		
	Furthermore, the product was introduced with 5 g/L of sucrose, while		
	N P K nutrient were provided daily for a period of 2 months Sucrose N P		
	K are ont mention in the material. Please include all materials to section		
	2.1		
	According to Sumantri et al [8], the concentration of Mixed Liquor		
	Suspended Solid (MLSS) in sludge was measured and designed for the		
	experiment (12 g/L water content). This senctence is confusing. Why use		
	reference?		
2.3. Experimental	Batch system was conducted in bottles containing activated sludge and		
set up	SB solution mixed at various compositions. Explain the various		
	composition with the value.		
	The volumetric container used for this experiment measured 2L.		
	However, polyethylene bottles were used as the anaerobic reactors, corked		

	with rubber plug and equipped with valve to measure the biogas produced.		
	This senctence is confusing.		
	the reaction was performed locally. Explain this		
2.4. Experimental	%. What % weight or volume?		
design	-		
3. Results and	The sentences should be rewrttien more clearly.		
Discussions			
<b>3.1.</b> Organic			
Loading Rate			
(OLR)			
	$OLR = Volume \ of \ SB \ (mL) \ x \ concentration \ (mg \ COD/L)/total \ volume \ (mL)$		
	Use equation. Do not mix with sencentes		
	Fig. 1 shows the total biogas generation within a period of 60 days with		
	varying OLR, and the product formation was observed to be associated		
	with this rate. The sentences should be rewritien more clearly. With this		
	rate. What the authors mean?		
	The gas production was originally high but eventually reduced as a result		
	of the organic load, and the decrease was detected to be minimal at low		
<i>OLR and amplified with an elevation of OLR.</i> The gas decrese a			
	Is this true? At Low of high OLK?		
	<i>Furthermore, the increase of the initial SD from 400 to 600 mg/L caused</i>		
	increase SP show increase in biogas production		
	The OLP increase of organic substances produced significant surges in the		
	the OLA increase of organic substances produced significant surges in the biogas production during the AD process as the methane-synthesizing		
	hacteria was dependent on the availability of organic acids and in turn on		
	the ability of the acid and acetate to generate hydrogen [16]. Explain the		
	results of this study with the references what the similar or not similar.		
	Figure 2 showed the control capabilities of 100% of activated sludge		
	(MLSS of 12 g/L) and 0% of SB. Explain control in the method		
	Please check all explanation for all figures. There are do not match between		
	explanantion and the figure. Please Explain the references and the		
	relevancy with this study. Do not only clipping the references.		
3.3. Kinetic study	Use the equation format like italic		
	Use the symbol with italic like k etc		
	Check all explanation. The sentences must sutable with the Figures. Do not		
	explain that don not match with Figure. Please explain the references that		
	relevant. do not only clipiing references.		
Conclusion	Too short explannation. Add conclusions.		

#### **REVISION NOTE BASED ON REVIEWERS/EDITORS COMMENTS**

- Journal Name : Bulletin of Chemical Reaction Engineering & Catalysis
- Manuscript ID : BCREC-2020-9366
- Title of manuscript: Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition of Preservative Material of<br/>Sodium Benzoate
- Author(s) : *Indro* Sumantri<sup>1\*</sup>, H. Hadiyanto<sup>1</sup>...

### COMMENTS OF REVIEWER (B)

SECTION IN THE REVIEW COMMENT FORM	SPECIFIC COMMENTS	ANSWER/REVISION NOTE	Location of Revision in Revised Manuscript
TITLE	"with addition of preservative material of sodium benzoate"Why the authors add a sodium benzoat to the Anaerobic Digestion Process?What do you mean "with addition"? Is the term similar with "wastewater containing sodium benzoate (SB)". If similar use the consistent world.	Sodium benzoate is widely used for food and berverages product. The term of "addition" because the experiments is modeled in a batch and directly to observe the interference of the sodium benzoate to the biogas production. May be the title will be changed to "Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Interference of Preservative Material of Sodium Benzoate"	1
ABSTRACT	This research was aimed to evaluate the production of biogas from wastewater containing sodium benzoate (SB)But, at the last sentences the decrease in OLR in wastewater follows the first order kinetic with kinetic rate constant. The objective and the results of kinetic do not consistent. The objective is biogas	In the work of organic is material usually used of OLR rather than concentration, hence, the use of OLR is selected to expressed the load of organic material.	1

	production but the results is decrease in OLR wastewater		
	The results indicated a reduction in the cumulative biogas by the addition of sodium benzoate, compared to the control condition. Add information about the control condition	Control condition is pinted out to indicate the condition of the experiment for 100% of sodium benzoate solution and 100% of activated sludge to the biogas production.	1
	Moreover, the decrease in OLR in wastewater follows the first order kinetic with kinetic rate constant (k). Add information about OLR	The first order of kinetic based on the plotting data of the model and result of the coefficient of determination.	1
INTRODUCTION	Anaerobic digestion requires certain environmental conditions to generate optimum yield and any chemical substances present may hinder this process. These inhibitors The word " These inhibitor isnot relevan with previous sentences. Please add information about inhibitor.	<i>Will be replaced by "one of the condition is the existence of inhibitor"</i>	1
	According to Kiel et al [6], benzoic acid is an essential starting material for synthesizing various products in the chemical industry including food preservatives, artificial flavors and insect repellent. Also, sodium benzoate, the derivative salt is popularly used to increase the food and beverage shelf-life by eliminating micro-organism growth [7,8,9]. Add explanation about benzoic acid in wastewater	SB is a salt of benzoic acid which is effective to attack wide range of bacterial and also to inhibit the growth of yeast and mold (Zhang and Ma, 2013). Benzoic acid is one of the effluents of agro-industrial and food processing activities. This substance is classified as low biodegradability and increased toxicity (Pariente et al., 2008). In the Terephthalic acid (TPA) manufacturing contributes high COD content up to 75% (Tekin et al., 2018). Benzoic acid accumulation in wastewater occurs due to of its production and aplication. This wastewater is potential to deteriorate the ecosystem and human health, treatment of this wastewater is an obligation before discharging into receiving water bodies. How to treat or remove the benzoic acid content in the wastewater is still a big challenge (Chai and Ji, 2012).	2
	Wang et al., [10] disclosed anaerobic digestion as an effective approach towards	Revised by :	2

	the treatment of phenolic wastewater, while Jiang et al., [11] reported sodium benzoate is derived from phenolic substances. Therefore, this study aims to discover the salt's influence on AD. The explanantion about the aims of this study do not relevant with previous sentences. Please explain the objective clearly. Please explain the novelty more clearly	Wang <i>et al.</i> , [10] disclosed anaerobic digestion as an effective approach towards the treatment of phenolic wastewater and SB is the derivation of phenolic substance [11]. Therefore, this study aims to discover the salt's influence on AD. The AD process utilizes an activated sludge to degrade SB, activated sludge plays an important role in the decomposition process, and operated under a batch concentration system with SB. Also, the reaction's completion is indicated by biogas formation. Hence, the experiment was conducted over sixty days and the biofuel produced was measured every two days and the synthesis' kinetic model was also studied.	
METHODS 2.1. Materials	In addition, PH for the SB set up was extracted from a local chemical store, while sucrose was derived from food stores. The word extracted is confusing? Please use sentences or word more exactly. The word derived is confusing. Please use more clear sentences	Revised by : SB was obtained of Sigma-Aldrich Corp (purity >98%). To set up the pH into pH of experiments used Sodium hydroxide or hydrochloric acid which obtained from the local chemical store. Sucrose obtained from food store and activated sludge was from wastewater plant of anaerobic system and located at the Lampertengah, Semarang, Central Java, Indonesia. This plant treated wastewater of the centralized wastewater treatment of tofu small-scale industry.	2
	SB is a model solution containing sodium hydroxide and hydrochloric acid obtained from Sigma-Aldrich Corp (purity=98%). Why the author use sodium hydroxide and hydrochloric acid for SB model. There are no explannation about this . Please explain in introduction or method.	Has been revised above	2
2.2. Acclimatization	However, water sampler was used to accumulate activated sludge in the	However, water sampler was used to take activated sludge in the bottom of the anaerobic tank. The sample was collected in a plastic tank and conveyed to the laboratory.	2

of activated	anaerobic tank. This senctence is		
sludge.	confusing		
	C		
	Consequently, anaerobic sludge was	The anaerobic sludge was acclimatized in the tank and set at	2
	acclimatized in the tank and set at pH	pH between 7.0-7.5. To set up the pH 7.0-7.5 used aqueous	
	between 7.0-7.5 with aqueous solution of	solution of sodium hydroxide or hydrochloric acid	
	sodium hydroxide or hydrochloric acid	depending on the nature of the circumstance of acid or base.	
	<i>depending on the nature</i> . This senctence is	1 0	
	confusing.		
	<i>Furthermore, the product was</i>	Ok	
	introduced with 5 g/L of sucrose, while N,		
	P, K nutrient were provided daily for a		
	period of 2 months Sucrose, N,P,K are ont		
	mention in the material. Please include all		
	materials to section 2.1		
	According to Sumantri et al [8], the	Revised by :	2
	concentration of Mixed Liquor Suspended	The anaerobic sludge for acclimatization was introduced	
	Solid (MLSS) in sludge was measured and	with 5 g/L of sucrose, while N, P, K nutrient were provided	
	designed for the experiment (12 g/L water	daily for a period of 2 months. The sludge was measured the	
	<i>content</i> ). This senctence is confusing. Why	concentration of Mixed Liquor Suspended Solid (MLSS),	
	use reference?	the MLSS designed for experiment was 12 g/L by setting the	
		water content [8].	
2.3. Experimental	Batch system was conducted in bottles	Revised by:	3
set up	containing activated sludge and SB	Batch system was conducted in bottles containing activated	
_	solution mixed at various compositions.	sludge and SB solution mixed at various compositions	
	Explain the various composition with the	(Table 1).	
	value.		
	The volumetric container used for this	Revised by:	3
	experiment measured 2L. However,	The plastic bottle volume for experiment was 2 L. The	
	polyethylene bottles were used as the	bottles of polyethylene were made as anaerobic reactors.	
	anaerobic reactors, corked with rubber	These bottle reactors have been plugged with rubber plug	
	plug and equipped with valve to measure	and equipped with valve to measure biogas production.	

	the biogas produced. This senctence is		
	confusing		
	the reaction was performed locally.	local room temperature $(31-33^{\circ}C)$ ,	3
	Explain this		
2.4.	%. What % weight or volume?	Volume	3
Experimental			
design			
2 Degulta and	The conteness should be neverticed more		4
5. Kesuits and	The sentences should be rewritten more		4
Discussions	clearly.		
Jaading Date			
Loading Kale			
	OIR - Volume of SR(mI) r concentration	It has been revised	1
	(mg COD/L)/total volume (mL)	It has been revised	т 
	Use equation Do not mix with sencentes		
	ese equation. Do not the with selectives		
	Fig. 1 shows the total biogas generation	Fig. 1 shows cumulative biogas production of OLR function	4
	within a period of 60 days with varying	for various concentration of SB (400 to 800 mg/L). The starting	
	OLR, and the product formation was	point is the control point (OLR:0) i.e. the reactor contains only	
	observed to be associated with this rate.	activated sludge without the addition of SB. Biogas production is	
	The sentences should be rewrttien more	highly dependent on OLR value, the higher the OLR value, the	
	clearly. With this rate. What the authors	increases then OLR also increases the results show the	
	mean?	cumulative biogas production will be lower OLR values will	
	The gas production was originally high but	increase at SB concentrations of 400, 600, and 800 mg/L and	
	eventually reduced as a result of the	biogas shows lower yields, for SB 400 mg/L with OLR of 0.398	
	organic load, and the decrease was	and 0.265 g COD/L resulted cumulative biogas of 59.6 and 96.4	
	detected to be minimal at low OLR and	mL), SB 600 mg/L with OLR of 0.597 and 0.398 g COD/L	
	amplified with an elevation of OLR. The	resulted cumulative biogas of 43.4 and 61.8 mL), and SB 800	
	gas decrese at low OLR? Is this true? At	mg/L with OLK of 0. /96 and 0.531 g COD/L resulted cumulative	
	Low or high OLR?	010gas 01 22.0 aliu 49.0 lill.).	
	Furthermore, the increase of the initial SB		
	from 400 to 800 mg/L caused the decline in		

biogas production. Is this true ?. Please set the Figure 1. The increase SB show increase in biogas production.         The OLR increase of organic substance produced significant surges in the bioga production during the AD process, as the methane-synthesizing bacteria were dependent on the availability of organic acids, and in turn, on the ability of the accent and acetate to generate hydrogen [16].         Explain the results of this study with the references what the similar or not similar.	<ul> <li>In AD process, increasing OLR of organic substances will significantly produce amount of biogas, the bacteria to produce methane depends on the availability of organic acids and also bacteria of acid and acetate to produce hydrogen (Ebrahimi et al., 2018). The function of SB as a preservative substance is to prevent the growth of microorganisms (Gaur et al., 2018). Increasing the SB will increase the substance to inhibit the growth of microorganisms. Furthermore, the biogas production decreased with more SB solution in the digester.</li> <li>For batch system with 100% of SB solution, the biogas has no produced. This is because the properties of SB as preservative materials to maintain the food product stay longer period by prevent the growth of microorganisms (Yadav et al., 2016). SB in the activated sludge will suppress the growth of microorganisms and will reduce the activity to degrade the organic substances.</li> </ul>	4
Figure 2 showed the control capabilities 100% of activated sludge (MLSS of 12 g/ and 0% of SB.Explain control in the method	Figure 2 shows control conditions for 100% activated sludge (MLSS:12 g/L) and 0% (100% SB). Activated sludge condition of 0% (100% SB) does not produce biogas during 60-day observations while for activated sludge 100% produces biogas such as Figure 2. On the curve shows that in the first 10 days anaerobic digestion produces high biogas. This was due to entrapped air which can be utilized by microorganisms in the reactor (Beevi et al., 2015). At the first 10 days digestion, the biogas production was high. Formation of biogas started after inoculation and increase until achieved the peak (Candia-Garcia et al., 2018). Usually, the formation of methane was followed by reduction of pH, range pH of methanogenic process were found to lie within (6.5–8).	5

	Please check all explanation for all figures.	Yes of course.	
	There are do not match between		
	explanantion and the figure. Please Explain		
	the references and the relevancy with this		
	study. Do not only clippng the references.		
3.3. Kinetic study	Use the equation format like italic	Done	7
	Use the symbol with italic like k etc		
	Check all explanation. The sentences must		7-8
	sutable with the Figures. Do not explain		
	that don not match with Figure. Please		
	explain the references that relevant. do not		
	only clipiing references.		
Conclusion	Too short explannation. Add conclusions.		8-9

#### **REVISION NOTE BASED ON REVIEWERS/EDITORS COMMENTS**

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- Manuscript ID : BCREC-2020-9366
- Title of manuscript
   : Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition of Preservative Material of Sodium Benzoate

   Image: Solid state of the state of th
- Author(s) : *Indro* Sumantri<sup>1</sup>\*, H. Hadiyanto<sup>1</sup>...

COMMENTS OF REVIEWER (D)

Reviewer D:

The following comments should be address:

SPECIFIC COMMENTS	RESPONSES	Location of Revision in Revised Manuscript
• The reason of adding sucrose during the acclimatization should be	Addition of sucrose on the acclimatization is	2
explained. Is the concentration of carbon in the waste as it is not	pointed out to provide source of carbon for	
enough? How about during AD?	microorganisme because no input of carbon	
	during acclimatization.	
• Amount of N, P, K added should be explained clearly as well as the	N, P nutrient added to the activated sludge is	2
source (fertilizer?)	based on the carbon stated as COD.	
• Room temperature should be clearly stated in oC	31-33 <sup>0</sup> C	3
• The meaning of OLR should be given in the first appearance in the	Yes, will be repaired.	2
manuscript (abstract?) before 3.1.		
• There are some redundancies in explaining some procedures such as the	It has been revised	3
use of 2 L reactors, method of measuring gas using water displacement		
method. This could be the result of using three similar subtopics: 2.3.		
Experimental setup, 2.4. Experimental design, 2.5. Experimental		
procedures. This should be rewritten more concisely.		

	SPECIFIC COMMENTS	RESPONSES	Location of Revision in Revised Manuscript
•	SB concentration was varied 0%, 20%, 40%, 60%, 80% and 100%, however, there is no information about the concentration of SB in the real wastewater.	No information about the concentration SB in the wastewater because SB is the organic substance hence stated as COD.	Table 1
•	Fig. 1and the decrease was detected to be minimal at low OLR and amplified with an elevation of OLR. Pls explain this statement, since this seems not clearly seen in Fig. 1.	It has been revised	4
•	the increase of the initial SB from 400 to 800 mg/L caused the decline in biogas production. This statement is not clear, since in Fig 1, increase from 400 to 800 at the same OLR resulted in higher cumulative biogas.	It has been revised	4
•	Fig. 2the formation of methane was unsurprisingly followed by a reduction in pH, and the range of the methanogenic process was found to lie within 6.5 to 8.	The final pH has not been measured because the intention is for biogas production. The value of 6.5 to 8 indicated the pH is under the range of methanogenic process.	5
•	There is no pH data shown.	The final pH has not been measured because the intention is for biogas production. The value of 6.5 to 8 indicated the pH is under the range of methanogenic process.	-
•	The pH was set at 7.0-7.5. The information indicates no reduction in pH? Pls explain	The final pH has not been measured because the intention is for biogas production. The value of 6.5 to 8 indicated the pH is under the range of methanogenic process.	3
•	Statement: Figures 3a and b indicated the yield of MLSS biogas to be between 4.8 g/L and 7.2 g/L with the presence of SB in the system. This statement is not clear, since no information of yield in these two figures.	It has been revised	5
•	The importance of investigating the kinetic of the process need be explained more clearly. Since the presence of SB in AD reactor resulted in the decrease of biogas, is it needed to design an AD reactor with such condition as it is? Please explain, referring to literature, if there is any	The comment will be consider to more intensive research conducted of SB as preservative material to the rate-limiting step to the production of biogas. This research in the batch	6

	SPECIFIC COMMENTS	RESPONSES	Location of Revision in Revised Manuscript
	modification conducted by other researchers working on similar inhibitory process to improve the process. Alternatively, if the real range of concentration of SB in an actual system is known, best operating conditions that can overcome the problem might be firstly fixed prior to studying the kinetics. Please explain in text.	system and only evaluate the formation of biogas. The research conducted with SB content in wastewater in less, and for Indonesia may be difficult to find the references. The selection of operating condition is based on the tropical condition which anaerobic mesophilic type is more dominant. The range of s 500-2000 mg/kg of SB by most of regulation to use SB as preservative material. There is no	
•	Eq (3) reveals that all SB consumed by microbes was converted completely to biogas, regardless there are many reaction steps producing many products or intermediate products in anaerobic digester. This correlation should be better supported by confirmation of mass balance data of the SB consumed and the biogas produced.	Right, this is the first step to evaluate the inteference of the SB to the anaerobic process. Selection of anaerobic process because the wastewater from food factory has high COD content. Furthermore, the step of research may be more detail to obtain the rate-limiting step that reduce the biogas production.	7





• • • • [BCREC] Final Decision of Your Manuscript [Ms ID: BCREC-2020-9366] Yahoo/Email Masuk

Prof. Dr. Bunjerd Jongsomjit <br/>
bunjerd.j@chula.ac.th><br/>
Kepada:Dr. Indro Sumantri<br/>
Cc:Hadiyanto Hadiyanto<br/>
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Journal Name: Bulletin of Chemical Reaction Engineering & Catalysis<br/>
Article Title: Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition<br/>
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Ms ID: BCREC-2020-9366

Dear Dr. Indro Sumantri,

I am pleased to confirm that your manuscript submitted to Bulletin of Chemical Reaction Engineering & Catalysis entitled: "Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition of Preservative Material of Sodium Benzoate" has been accepted for publication. Your accepted manuscript will be pre-published soon in the Just Accepted Manuscript and Article In Press (URL: <u>https://ejournal2.undip.ac.id/index.php/bcrec/issue/view/81</u>).

We will send you the galley PDF proof correction soon, as we will ask you for some correction of typesetting.

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We very welcome your next manuscript submission to this electronic journal or please to encourage your colleague to submit their manuscript to this journal.

With kind regards,

Yours sincerely,

Prof. Dr. Bunjerd Jongsomjit Department of Chemical Engineering, Chulalongkorn University , Bangkok, Thailand <u>bunjerd.j@chula.ac.th</u> Twitter: @bcrec\_j (<u>https://twitter.com/bcrec\_j?s=08</u>) (Regional Editor for Asia-Pacific) Bulletin of Chemical Reaction Engineering & Catalysis (<u>https://bcrec.id</u>) Department of Chemical Engineering, Chulalongkorn University, Bangkok, Thailand



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Terkirim Arsip Spam ≡ Sampah ^ Lebih sedikit Tam Sembunyikan	Article Title: Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition of Preservative Material of Sodium Benzoate Ms-ID: BCREC-2020-9366 Dear Dr. Indro Sumantri, Thank you for submitting the revision of manuscript, entitled: "Kinetic of Biogas Production in a Batch Anaerobic Digestion Process with Addition of Preservative Material of Sodium Benzoate" to Bulletin of Chemical Reaction Engineering & Catalysis. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:	MOBILINI BISA TERJUAL Rp 135.000.000 - Rp 157.000.000 CONTRACTOR OF 157.000.000 Of AUTOS	
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