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APPENDIX

1. Approved Recipe




Recipe Name	: NATA DE PINARI
TITLE OF C&D	: UTILIZATION OF FOOD WASTE (RICE WASHING WATER, PINEAPPLE SKIN & PINEAPPLE FLESH JUICE) FOR MAKING NATA DE PINARI
Yield	: 2 – 4 servings
Main Ingredients	: 450 g pineapple skin, 50 g pineapple, 1000 ml rice washing water
Ingredients	:
- 500 g white rice	- 8 g food grade ZA (<i>Zwawitzure Ammoniak</i>)
- 450 g pineapple skin	
- 50 g pineapple flesh	
- 1000 ml mineral water	
- 90 g table sugar	
- 10 ml white vinegar	
- 100 ml starter <i>Acetobacter xylinum</i>	
• Soaking Water :	
- 3000 ml tap water	
- 6 pcs pandan leaves	
• Nata De Pinari Syrup :	
- 10 ml pandan flavor essence	
- 4 pcs pandan leaves	
- 120 g table sugar	
- 600 ml mineral water	
Method	:
1. Wash 500 g white rice with 1000 ml mineral water in a large bowl	
2. Filter the rice washing water using cloth filter to remove impurities that participate in the rice washing process	
3. Cut 450 g pineapple skin and 50 g pineapple flesh into small pieces	
4. Then, wash the pineapple skin and pineapple flesh with running tap water until clean	

5. Next, add the pineapple skin and the pineapple flesh that has been cut into small pieces into the blender and blend it with 1000 ml rice washing water until become a very smooth juice
6. Strain the pineapple skin and the pineapple flesh juice that has been blended with rice washing water using cloth filter to remove the pulp of pineapple skin and pineapple flesh
7. Add the pineapple juice mixture into the sauce pan, stir and bring to boil
8. After the mixture boils, add food grade ZA, table sugar and white vinegar, then stir until well combined and remove from the stove
9. Check the pH level of the media using digital pH meter so that the pH level of the media is 4.0, to make the bacteria growth perfectly
10. Rest the media until room temperature (28° C – 30° C) around 6 – 12 hours
11. Then, transferred the media into a food container that has been sterilized with 70% rubbing alcohol
12. The next process is inoculation, add 100 ml *Acetobacter xylinum* starter to the media
13. Furthermore, in this fermentation process, the food containers used are arranged and placed in a place that is free from vibration and store at the room temperature (28° C – 30° C). Cover the food container with baking paper and tie it with rubber band around the lip of the container.
14. The fermentation process lasts for 14 days to produce thick nata with the best quality
15. After 14 days, wash the nata de pinari with running tap water
16. Then, put the nata de pinari in a food container, and add 1000 ml of tap water and 2 pcs tied pandan leaves. Soak the nata de pinari for 3 days. Furthermore, the nata must be washed, the soaking water and pandan leaves must be replaced with new ones every single day to remove the sour smell of the nata de pinari
17. After soaking for 3 days, wash and rub the nata de pinari sheet to remove the thin layer or *pellicle* that is on the surface of the nata de pinari
18. Next, cut the nata de pinari into cubes, roughly about 1.5 cm width
19. To make nata de pinari syrup, put the nata de pinari that has been cut into cubes into the sauce pan, add 600 ml mineral water, 120 g table sugar, 4 pcs tied pandan leaves, and 10 ml pandan flavor essence, stir until well combined and boil around 10 minutes until the nata de pinari expands and the color turns to milky white. Turn off the stove, let it cool and the nata de pinari is ready to be consumed.

RECIPE BACKGROUND (50 - 100 WORDS)

Nata De Pinax is a nata processed using rice washing water, pineapple skin and pineapple flesh juice which has the potential to become a fiber-rich and low-caloric food that can be used as a dessert. Nata is a food ingredient fermented by the bacterium *Acetobacter xylinum* which produces a gel sheet on the surface of a substrate in the form of cellulose. The use of food waste in the form of rice washing water produced every day by Indonesian people turns out contains carbohydrates, protein and vitamin B also the pineapple skin and pineapple flesh juice is very rich in active substances of flavonoids, bromelain enzymes, vitamin C and anthocyanins which have the ability as antibacterial agents and can prevent free radicals.

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1 st Advisor	2 nd Examiner	3 rd Examiner
 Name: Anthony Sucipto, A.Md. Par. Date: 31 / 07 / 2023	 Name: Elinar, STT, Par., M.Si. Par. Date: 31 / 07 / 2023	 Name: Yohanna Prasetyo, S.Sn., A.Md. Par. Date: 31 / 07 / 2023

2. Approved Sensory



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT SENSORY TEST

DATE : 12 Juli 2023
NAME : Kallia Maera Wijaya
NIM : 2174130010067
PRODUCT : Nata de Pina
ADVISOR : Anthony Sucipto, A.Md. Par

PANELIST	SIGHT	SMELL	TEXTURE	TASTE	TOTAL
Panelist 1	√	√	√	√	√
Panelist 2	√	√	√	√	√
Panelist 3	√	√	√	√	√
Panelist 4	√	√	X	√	√
Panelist 5	√	√	X	√	√
Panelist 6	X	√	√	√	√
Panelist 7	√	√	√	√	√
Panelist 8	√	√	√	√	√
Panelist 9	√	√	√	√	√
Panelist 10	√	√	√	√	√

NOTES :

1. (Perfect) tidak terlalu manis dan tidak terlalu hambar, texture sesuai dan tidak alot.
Mungkin bentuk agak di rapikan lebih rapi lagi
2. Taste prefer gula 15
3. Nice



3. Consultation Form



Student Welfare & Progress
OTTIMO
 INTERNATIONAL
 CONSULTATION FORM
 CULINARY INNOVATION AND
 NEW PRODUCT DEVELOPMENT

No	Date	Topic Consultation	Name/Signature
1	16/05/23	Konul Jaldi	
2	20/05/23	Konul Jaldi	
3	20/05/23	Product consultation	
4	21/05/23	Product consultation	
5	24/05/23	Product consultation	
6	10/07/23	Konul Pradha	

Name : Koral Mishra, Noida
 Student Number : 2174150200067
 Address : Andhery Sector A, 141, Bar

No	Date	Topic Consultation	Name/Signature
7	19/06/23	Konul Saver Foodstem Product	
8	04/09/23	Konul Taha Taha Lajpatha	
9	30/08/23	Product Consultation	
10	12/09/23	Product Consultation	
11	01/09/23	Konul Nutrition Fact Product	
12	03/09/23	Konul Chapter 5	

4. Systematic Process Documentation

1) Main ingredients of nata de pinari



2) Starter *Acetobacter xylinum*



3) Washing white rice with water



4) Filtering the rice washing water with cloth filter



5) Cutting the pineapple skin and pineapple flesh into small pieces



6) Washing the pineapple skin and pineapple flesh with running tap water



7) Adding the pineapple skin, pineapple flesh and rice washing water to the blender



8) Blending the pineapple skin, pineapple flesh and rice washing water



9) Straining the juice mixture with cloth filter



10) Adding the juice mixture to the sauce pan and bring to boil



11) Adding food grade ZA to the boiled juice mixture



12) Adding table sugar to the boiled juice mixture



13) Adding white vinegar to the boiled juice mixture



14) Checking the pH level of the media using digital pH meter



15) Resting the media until room temperature



16) Sterilizing the food container with 70% rubbing alcohol



17) Adding the *Acetobacter xylinum* starter to the media



18) Transferring the media into the sterilized food container



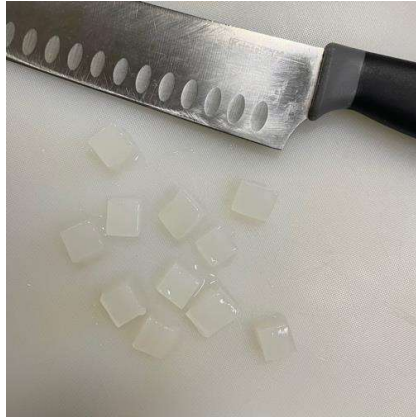
19) Arranging and placing the media that has been covered with baking paper and tied with rubber band around the lip of the container in a place that is free from vibration and store at the room temperature



20) Nata de pinari after 14 days of fermentation



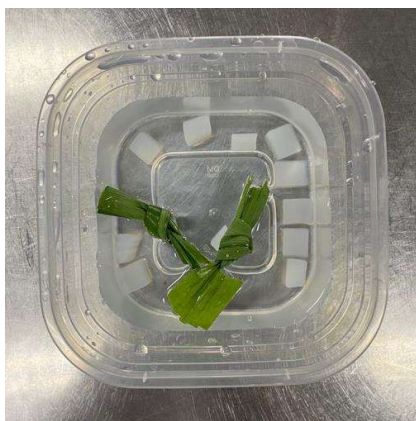
21) Cutting the nata de pinari



22) Washing the nata de pinari



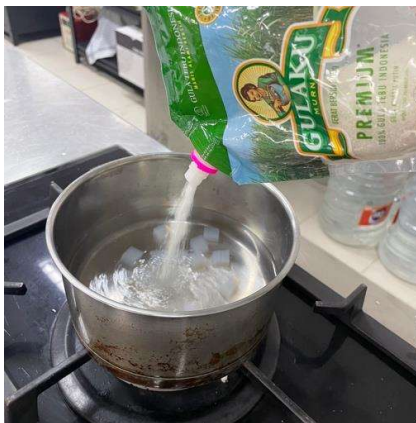
23) Soaking nata de pinari



24) Making nata de pinari syrup, putting the nata de pinari and mineral water to the sauce pan



25) Adding table sugar for making nata de pinari syrup



26) Adding tied pandan leaves for making nata de pinari syrup



27) Adding pandan flavor essence for making nata de pinari syrup



28) Boiling the nata de pinari and the syrup



29) The finished product

