BIBLIOGRAPHY

- Collection, Processing And Storage Of Carrots. (2021). Retrieved from https://agrovent.com/en/blog/collection-processing-and-storage-of-carrots/
- Char, C. D. (2017). Carrots (Daucus Carota L.). Retrieved from https://www.researchgate.net/publication/322577514_Carrots_Daucus_carota_L
- Fanzo, J., Mclarren, R., Bellows, A., & Carducci, A. (2023). Challenges and opportunities for increasing the effectiveness of food reformulation and fortification to improve dietary and nutrition outcomes. Food Policy, Volume 119.
 Retrieved from from

https://www.sciencedirect.com/science/article/pii/S0306919223001136

- Ierna, A., Mauro, R. P., Leonardi, C., & Giuffrida, F. (2020). Shelf-Life of Bunched Carrots as Affected by Nitrogen Fertilization and Leaf Presence. Agronomy. Retrieved from https://www.mdpi.com/2073-4395/10/12/1982
- Karwacka, M., Ciurzyńska, A., Galus, S., & Janowicz, M. (2024). The Effect of Storage Time and Temperature on Quality Changes in Freeze-Dried Snacks Obtained with Fruit Pomace and Pectin Powders as a Sustainable Approach for New Product Development. Sustainability. Retrieved from https://doi.org/10.3390/su16114736
- Khan, I. (2022). Renewable Electricity and Sustainability: Prospects in Developing Economies. Retrieved from https://doi.org/10.1016/C2020-0-03238-X
- Kurniawan, R. (2017). Processing Of Mucuna Beans (Mucuna Pruriens), Oats (Avena Sativa), And Apple (Malus Sylvestris) As The Ingredients Of Snack Bar. Retrieved from http://repository.unika.ac.id/14844/2/12.70.0168%20Rudyanto%20Kurniawan %20BAB%20I.pdf
- Ningsih, A.R., Sukardiman, Syahrani, A., Charisma, M.A., & Wahyuni, K.I. (2022). Study Of Drying Methods And Extraction Methods On Phenolic Contenct. Retrieved from https://repository.uam.ac.id/id/eprint/725/3/Jurnal%20-%2018%20STUDY%20OF%20DRYING%20METHODS%20AND%20EXTR ACTION%20METHODS%20ON%20PHENOLIC.pdf
- Nowacka, M., Dadan, M., & Tylewicz, U. (2023). Drying Technologies in Food Processing. Applied Sciences. Retrieved from https://doi.org/10.3390/app131910597
- Paudel, D., Dhungana B., Caffe, M., & Krishnan, P. (2021). A Review of Health-Beneficial Properties of Oats. *Foods.* Retrieved from https://doi.org/10.3390/foods10112591
- Santoso, K (2021). Product Development Of High Fiber Snack Bar Made From Carrot And Banana. Retrieved from http://repository.unika.ac.id/27019/2/14.I1.0168-KENNY%20SANTOSO-BAB%20I_a.pdf

- Utah State University Extension. (2013). Dried Vegetable. Retrieved from https://issuu.com/usuextension/docs/food_storage_booklet2_49bc3ab844f0dc/s/ 10352749
- Van der Sman, R.G.M. (2020). Impact of Processing Factors on Quality of Frozen Vegetables and Fruits. Food Eng Rev 12, 399–420. Retrieved from https://doi.org/10.1007/s12393-020-09216-1
- Velasquez, A. L. (2020). Development Of High-Fiber Belgian Waffles And Evaluation Of Product Acceptance, Product-Elicited Emotion, And Purchase Intent By Millennial Consumers. Retrieved from https://repository.lsu.edu/cgi/viewcontent.cgi?article=6231&context=gradschoo l_theses
- Wicks, L. (2023). 6 Amazing Health Benefits Of Carrot. Retrieved from https://www.eatingwell.com/article/2060606/health-benefits-of-carrots/
- Zairisman, T. R., Budiastra, I. W., & Sugiyono. (2017). Carnauba Wax and Chitosan Coating To Maintain Quality of Peeled Carrot. JTEP jurnal keteknikan pertanian. Retrieved from https://journal.ipb.ac.id/index.php/jtep/article/view/18511/13078

APPENDIX

1. Approved Recipe



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT

APPROVAL RECIPE

Recipe Name	: Crunchy Carrot	: Crunchy Carrot Snack				
TITLE OF C&D	: Use Of Carrots	As The l	Main Ingredient For Crunchy Snacks			
Yield	: 1-2 Portion					
Main Ingredients	:100 g Carrots					
Ingredients	:					
- Carrot juice 30 g		-	Melted butter 15 g			
- Oatmeal powder 30 g		-	Sugar 15 g			
 All purpose flour 25 g 		-	Icing Sugar 10 g			
 Carrot grated 25 g 		-	Cornstarch 5 g			
 Cheese grat 	ed 25 g	-	Cinnamon powder 3 g			
 Instant yeas 	Instant yeast 15 g		Baking soda 2 g			

Method

1. Blend the carrots until smooth.

:

- 2. Strain the carrots and take the carrot juice and put it in a bowl.
- 3. Melt the butter and put it in a different bowl.
- 4. Prepare a new bowl and add the carrot juice, butter and sugar and stir.
- Add dry ingredients such as oatmeal powder, all purpose flour, cornstarch, cinnamon powder, instant yeast and baking soda and stir until evenly mixed.
- 6. Add grated cheese and grated carrots and stir well.
- 7. Cover the dough with a cloth and let it rest for 30 minutes.
- Prepare baking paper, put the dough on the baking paper and roll it using a rolling pin until it is quite flat.
- 9. Oven at 180 °C for 15 minutes and remove from the oven.
- 10. Cut the crispy snacks into small pieces and oven at 150 °C for 30 minutes.

Product Description :

Snacks are snacks that many people often encounter. Sometimes many people think that snacks are unhealthy food, they contain too much sugar and MSG and there is a lack of good nutritional content in snacks. However, not all snacks are unhealthy, one of which is the carrot



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT

in our product. It has a quite good carrot content and is low in sugar. Carrot are a vegetable that has many benefit for both adults and toddlers. Carrot are rich in vitamin A and C as well as antioxidants. Our product, carrot snack, is a instant snack but safe for consumption by adults and toddlers.

Objective :

My goal in making this product is a fast food snack but has many benefit and good nutrition, is low in sugar and safe for consumption by all ages.

Benefit :

- Has many benefit
- Has good nutritional content
- Safe to consume for all ages
- Low sugar

Trial Progress :

In my first experiment I used the food dehydrator method. Spread the dough and put it in a food dehydrator for 12 hours. The results I got from this method were quite crunchy in terms of texture, in terms of taste it was to salty, in terms of aroma it smelled of cinnamon which was quite strong and in terms shape it didn't match what I wanted.

In the second experiment I used the oven cooking method. The result of this method are very unsatisfactory. In terms of shape it is quite good, in terms of texture it is too soft and not crunchy, in terms of aroma it doesn't emit any aroma, in terms of taste it is not tasty and bland. This method fails because the ingredients are measured incorrectly.

In the third trial I used the oven cooking method. In this trial the result were quite good. In terms of taste at first tasting it was a bit bland but as time went on it felt a little salty and cinnamon tasting, in terms of texture at first it felt crunchy but after about two hours the texture became very hard, in terms of aroma it smelled of cinnamon and carrots, in terms of shape it was quite good however, it will still be improved to be better.



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT

Trial Documentation :









2. Approved Sensory



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT SENSORY TEST

DATE	: 18 April 2024
NAME	: Sitti Halimah

NIM : 2274130010045

PRODUCT : USE OF CARROTS AS THE MAIN INGREDIENT FOR CRUNCHY

ADVISOR : Arya Putra Sundjaja, S.E.

PANELIST	SIGHT	SMELL	TEXTURE	TASTE	OVERALL	TOTAL
Panelist 1	4	4	4	4	4	20
Panelist 2	4	4	3	4	4	19
Panelist 3	5	5	5	4	5	24
Panelist 4	5	5	5	4	4	23
Panelist 5	4	5	3	4	4	20
Panelist 6	3	4	4	3	4	18
Panelist 7	5	5	5	5	5	25
Panelist 8	4	4	4	4	4	20
Panelist 9	4	4	5	5	4	22
Panelist 10	2	4	4	3	3	16
TOTAL	40	44	42	40	41	207

NOTES

- 1. Good
- 2. –
- 3. Enak dan sangat renyah

:

- 4. Nicely done.
- 5. A bit too hard
- 6. Oke untuk snack sehat
- 7. Sudah baik
- 8. Ok
- 9. Good
- 10. It has nice flavor, the texture is nice and crisp with flakiness. However I can taste a slight burnt taste towards the end



3. Consultation Form

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- 4. Systematic Process Documentation
 - 1) Ingredients of Crunchy Carrot snack



2) Making the dough



3) Roll the dough



4) Bake at 180 °C for 15 minutes and remove from the oven



5) Cut the crispy snacks into small pieces and Bake at 150 °C for 30 minutes.

