

Bongos® The Cool Snack

Ana Leal-Diaz, Nitit Maranphal, and Laura Silva Cereal Quality Laboratory, Texas A&M University, College Station, Texas

\$ N, 1, 1 n 1 R \$ N, 1, 2 n 1 R \$ N, 1, n 1 R \$ N, 1, 1 n 1 R \$ N, 1, 1 n 1 R \$ N, 1, n 1 R

- A novel source for snack production that offers a great quality snack and provides the consumer with a nutritious, high fiber, flavorful and fun product.
- Bongos® is a bite size snack made out of sorghum and flavored with Spicy Cheese, Cheddar Cheese, Buffalo Flame and a special sweet Cinnamon Crunch.
- Teenagers are the target market for this product.
- · Bongos® are presented in a convenient resealable package that will keep the product fresh and allow you to eat your snack right out of the container.

MARKETING

- · Worldwide, the snack industry is becoming larger increasingly important.
- · Consumers now see eating as something to be done while you do something else and from this comes the need of convenience.
- The size of the teen market for food and related products is one of the greatest hidden opportunities for marketers.
- Food choices of adolescents are typically inconsistent with the Dietary Guidelines for Americans. Whole grains consumption will help meeting this requirement.
- Sorghum has traditionally been used in food products and various food items, like porridge, unleavened bread, cookies, cakes, couscous, and malted beverages.

PRODUCT DESCRIPTION

Bongos® is the first whole grain based extruded snack made out of sorghum, it comes in a convenient package and making it a cool snack focuses in the teenager market.

FORMULATION

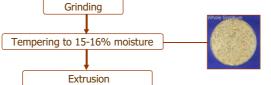
Product is made out of 100% whole sorghum meal tempered to 15-16% moisture.

PROCESS DESCRIPTION Whole sorghum is extruded in a single screw short barrel adiabatic type extruder. The following diagram shows the steps









involved in preparation of raw material, as

Food-type white sorghum

Extrudates

10-11% moisture

Packaging in high

density polyethylene

bottles

well as final steps such as drving.

flavoring and packaging.



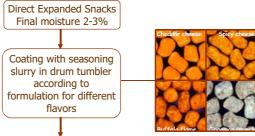


Table 1. Coating/Seasoning Formulation.

Ingredient/ Flavor	Cheddar Cheese	Spicy Cheese	Buffalo Flame	Cinnamon Crunch
Sorghum extrudates	60.8%	60.8%	60.8%	60.8%
Corn oil	28%	28%	28%	28%
Cheese flavor	7.5%	5%	-	-
Acid whey	3.5%	3.5%	1.1%	-
Buffalo wing seasoning	-	-	7.7%	-
Chili powder	-	2.5%	2.2%	-
Apple pie spice	-	-	-	1.8%
Sugar	-	-	-	4.8%
Maltodextrin	-	-	-	3.5%
Cinnamon	-	-	-	0.9%
Salt	0.2%	0.2%	0.2%	0.2%
Total	100%	100%	100%	100%

ngredient/ lavor	Cheddar Cheese	Spicy Cheese	Buffalo Flame	Cinnamon Crunch	
orghum xtrudates	60.8%	60.8%	60.8%	60.8%	
orn oil	28%	28%	28%	28%	
heese flavor	7.5%	5%	-	-	
cid whey	3.5%	3.5%	1.1%	-	
uffalo wing easoning	-	-	7.7%	-	
chili powder	-	2.5%	2.2%	-	
pple pie spice	-	-	-	1.8%	
ugar	-	-	-	4.8%	
laltodextrin	-	-	-	3.5%	
innamon	-	-	-	0.9%	
alt	0.2%	0.2%	0.2%	0.2%	
otal	100%	100%	100%	100%	

NUTRITIONAL LABEL

NU Serving Serving Antour Caster Sector Fotor C Deta Sector Vitamir Catcher Vitamir Catcher Vitamir Catcher Vitamir Catcher Ca

JTRITION FACTS g size 20 g g per container about 2.5	NUTRITION FACTS Serving size 28 g Serving per container about 25	NUTRITIC Serving size 28 g Serving per container 2.5		
t per serving	Amount per serving Calones 120 Calones from Fall 75	Amount per serving Calones 1/0 C		
5 Day value	S DOWN VALUE	Caldres 170 C		
Pat 1g 195 rated fat 0g 65 sasson unity 65 sas 71 ng 25 sar 71 ng 25 say Fae 1g 65 say Fae 1g 65 say 1g 65 sa 2g 65	TOTAL THE WAY 1975 SEMEWHAND THE GO OF THE GOOF THE GO OF THE	Seture Fac Ing Setured by Og Setured by Og Seduce For Ing Seduce For Ing Tests Careerspanded 22 Centry Fiber 1g sequence Protein 2g Protein 2g		
n A 0% Vitamin C 0%	Vitamin A 0% Vitamin C 0%	Vitamin A 0% Calcium 0%		
sert Daily Values are based on a 2,000 cliet. Your daily values may be higher or depending on your calorie needs: at Less than 350 800 £ Less than 250 250	Persont Daily Values are based on a 2,000 caloris dist. Your daily values may be higher or lower depending on your caloris needs: Total Fat. Less than 100 250 250 250 250 250 250 250 250 250 2	Persont Daily Values an calorie diet. Your daily val lower depending on your of Total Fat Lee Sat Fat Lee		

NUTRITION F Serving size 28 g Serving per container about 2.5	ACTS	NUTRITION FACT Serving size 28 g Serving per container 2.5			
enount per serving paones 125 Calones	MALLE A	Amount per serving Calones 1/0 Calones from Fall //			
Jacones 135 Calones 1					
	% basy value	% Daily ks			
OCEN FOR TO	12%	TOTAL FOR INC			
Saturated fat 6g	95	Saturated fat Og Ongwesterer umo			
Statement Ung	25	Sodium 56 mg			
eddure to mg	- 20	Total Carbonidasia 220			
Dietary Fiber 10	90	Dietary Fiber 10			
Sugars Less than to	494	Sugar 20			
Protein 20		Protein 2s			
Ownin & O'S	Vitamin C 0%	Vitamin & Mil. Vitamin C			
Saldium 0%	Ion 2%	Calcium 0% Iron			
Persont Daily Values are based calorie diet. Your daily values may ower depending on your calorie no	be higher or reds:	Persont Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
COM FAX LESS TRAIN		FORE FAX LESS than GOD BOD			
	20g 25g	Sat Fat Less than 20g 25g			
	300mg 300mg	Cholesterol Less than 200mg 200m			
	2,400 mg,400 mg	Sodium Less than 2,400mg 2,40			
Fotal Carbohydrate	300g 375g	Total Carbohydrate 300g 375g			
Setary Fiber	25g 30g	Dietary Fiber 25g 30g			
Set 9 - Carbohydrate 4	- Protein 4	Fat 9 - Carbohydrate 4 - Protein			

Cheddar Cheese NUTRITION FACTS including 28 g. Control table 24 g. Control table 24 g.			Cinnamon Crunch NUTRITION FACTS faming size 20 g faming on contine 25			Spicy Cheese NUTRITION FACTS tening also 20 g. tening per container about 25 g. activ.			
									imount per serving
arches 135	Calores	TOTAL PA	E 75	CM0046 170	Calones from Fa	- 73	CHISSRE 135	Calches from	-ac 75
		2.0	ST VENE		5.00	74 13 NO		5.0	207 1204
OUR PRE TO			1274	TOTAL PAR ING		1214	COURT FAIL 140		- 1
Saturated fat: 0g			924	Saturated fat Oo		95	Suburated fat Co.		-
manustrat umg			40.	Chaweserer ung		40.0	Cholesterol ong		-
addium 50 mg			25	Sodium 56 mg		25	Section 56 mg		
otal Carteryera	584 130		41.	Total Carsonyaran	84 22g	734	Fotal Carbonyora	284 133	_
Dietary Fiber 1g			634	Dietary Fiber 1g		es.	Dietary Fiber 1g		-
Sugare Lease No.	n 1g			Sugara ag		_	Sugare Less tha	EL 23	
rosein 2g				Protein 2g			Protein 2g		
Stamin A 9%		Via.	amin C 03	Vitamin A 6%	Vita	min C 03/	ritamin A 9%	Vi	amin C 0
Dalcium 0%			Ion 2%	Calcium 0%		Iron 2%	Dalplam 6%		Iron 2
Personnt Daily Va alone det. Your d ower depending on	ally values ma your calorie i	y be hig needs:	her or	calorie diet. Your du lower depending on		her or	calorie diet. Your di ower depending or	ilues are based on a fally values may be to your calorie needs	igher or
2011 F-32	Less than		8000	10081180	Less than sog	8000	FORM FIRE	Less tran sog	800
lat Fat Sholesterol	Less than Less than		25g 300mg	Sat Fat Cholesterol			Sat Fat Cholesterol	Less than 20g Less than 300mg	
iodium Iotal Carbohydrate	Less than	2,400 300g	ng.400mg 375g	Sodium Total Carbohydrate	Less than 2,400m	g 2,400mg 375g	Sodium Fotal Carbohydrate	Less than 2,400r	ng 2,400r 375a
Setary Fiber		250	200	Dietary Fiber	250	200	Dietary Fiber	250	200
accres per gran:		_	_	Casones per grant:		_	Calcines per gram.		_

SAFETY AND SHELF LIFE

- Bongos come in a food grade high-density polyethylene container.
- The package provides moisture proof protection that prevents the product from absorbing moisture and losing crispiness.
- Modified atmosphere packaging is applied in a concentration of 30% CO₂ and 70% N₂.
- Nitrogen/carbon dioxide mixtures extend the shelf life of packaged foods by preventing spoilage from oxidation, mold growth, moisture migration and insect infestation.
- This helps to preserve freshness and taste, while providing convenience and durability to the product.
- The product has a shelf life of 6 months after production.



"Buffalo Flame Bongos"

PACKAGE LABEL



ACKNOWLEDGEMENTS

- . We would like to thank Mr. Marc Barron. without whom this project would not be accomplished.
- We would also like to thank Dr. Lloyd Rooney, Dr. Ralph Waniska, Ms. Cassandra McDonough, Ms. Jessica Garza-Casso, and Mr. Joseph Awika for their helps and suggestions.
- · Thanks to Kraft Food Ingredients, Memphis, TN and Institute of Food Science and Engineering, Texas A&M University for their supports.