



Ciudad de México, July 8, 2019

REINER JAHN
PROJECT COORDINATOR MEXICO

Roger Sims
Project Coordinator H2H

Herewith we request and express the intention to be considered in Project 100 x 100.

1) APPLICANT INFORMATION:

Rotary Club: Club Rotario Ciudad Sahagún, Distrito 4170

Rotaract Club: Club Rotaract Ciudad Sahagún, Distrito 4170 (**sponsor Rotary club:** Club Rotario Ciudad Sahagún, Distrito 4170)

Interact Club (sponsor Rotary club _____)

Name : Diego Melo Orta

Address: La Lagunilla, S/N, Omitlán De Juárez, Hidalgo, México, CP 43560

District and Club Number: Club Rotaract CD Shagún, Distrito 4170

2) NAME OF THE PROJECT

TORTIGERM

Hand against malnutrition

Sekkan ixpan yejuatl kakalachtli



3) OBJECTIVES OF THE PROJECT

a) General objective:

Provide vulnerable population a food product capable of satisfying their biological, psychological and social inherent to human beings by using corn seedlings to combat maternal and child malnutrition needs.

b) Specific objectives:



- Make use of corn seed germination to achieve over a period of 2 days reduce production costs and use of the nutritional properties of this resource.
- Dehydration processes used for product packaging.
- Product presentation for obtaining a powder mass which will be prepared by the consumer in tortillas.
- Using Spanish language and dialects in the product to have a wider distribution.
- Comply with the Official Rules Mexican health; hygiene, quality control.

4) DESCRIPTION OF THE PROJECT, SHORT AND LONG-TERM BREAK DOWN

JUSTIFICATION

This project offers direct food support for those facing a growing process are at risk of malnutrition (gestating and lactating mothers, children under five and weaning stage) promotes food security and incorporates healthy eating habits).

Protein-energy malnutrition is a pathological condition caused by lack of multiple nutrients, resulting from an imbalance caused by an insufficient supply and overspending, or a combination of both and among its causes poverty, poor hygiene is causing infections and more acute, so TORTIGERM has a simple preparation to prevent contamination of food, on the other hand the abandonment of breastfeeding by a nutritional deficiency of the mother is in addition to an important cause, because breast milk is critical to the initial development of the infant so our product can also be consumed by the mother both during the period of pregnancy and prevent malnutrition preuterina and in later stages.

Another major cause is the lack of a food supplement truly be adapted to biological conditions, ie the nutritional requirements of the infant and mother (10% protein, 30% lipids, 50-60% carbohydrate), the psychological which must satisfy the pleasure of sight, smell and taste for consumption and finally the sociological that should be considered family culture, community and real availability of food, thus current methods with baby food and nutritional powders are a failure to solve the problem, on the other hand our product being a tortilla corn germ perfectly fits the above criteria: Since our product bromatológico study revealed that the use of tortilla corn germ contains essential amino acids which does not have a conventional omelet required by children in their food (Howe, et al, 1971. 103- 143) making complete and only our omelette, with 60% more nutrients, our study revealed that 50% is rendidora, and cheap thanks to the



availability of maize in the region and tortilla daily consumption adds to the feasibility of implementation. and cheap thanks to the availability of daily corn tortilla consumption region and that adds to the feasibility of implementation. and cheap thanks to the availability of daily corn tortilla consumption region and that adds to the feasibility of implementation.

The importance of implementing this product is to reduce malnutrition rates and avoid its impact on maternal and child stage is more severe, among which a failure of growth, on the other hand, in the stomach is a decreased gastric acid and enzymes which generates an overgrowth of bacteria and parasites, as well as lactose intolerance, meanwhile the immune system will be prone to infections and cells will be delayed by atrophy of lymphoid organs. In the endocrine system are decreased thyroid hormone T3 generating hypothyroidism, meanwhile in the nervous system there is a decrease in brain growth resulting in children lower IQ, impaired cognitive development, problems in sensory integration and school. By implementing this project we can fight this disease because within formulas to start nutritional therapy in children with chronic malnutrition, corn is the best nutritional choice in carbohydrates and protein compared to other products such as Nan I, Isomil, Ensure, Pregestimil, etc. (Trevino, 1997: 139) thus offering an excellent choice Health Sector.

HYPOTHESIS

- The use of germinated to prepare the omelette Tortigerm make our most nutritious and enjoyable for the consumer as it is used to the consumption of tortillas.
- Processes increase the nutritional properties germinated corn travez various bioprocesses.
- The powder, more rendidora and low cost make a product with great technical feasibility.
- Nutritionally to enrich a food that is part of the common diet is an excellent alternative to combat malnutrition



PRODUCT DEVELOPMENT

Seed preparation process

To perform this process, the following steps were taken:

1. corn washed with water (warm)
2. corn inside Bio-bottle filled with water was placed 5hrs.
3. Past the 5hrs is rinsed again corn and corn left without water for approximately 8 - 12 hrs.
4. 12hrs after 8 or turned rinse the corn (the washing process was performed 2 times daily until the expected germination)
5. germ growth stages:



1 day



2 days



3 days



Manufacturing Procedure nixtamal

After completing the process for preparing the germ he was continued preparation nixtamal wherein the following steps are performed:

1. the corn seed was placed inside a container (pot or pan).



2. the vessel containing the seed with water to cover it completely filled.
3. It was added approximately 100-150gr lime to the vessel with the germ.



4. lime mixed until dissolved.



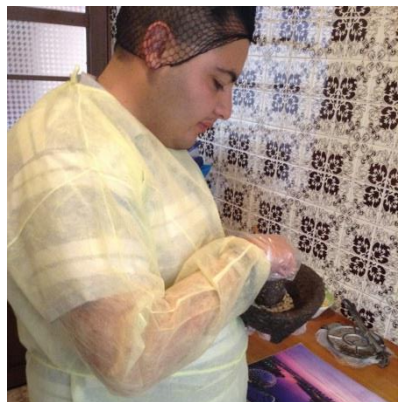


5. the container was placed on the stove.
6. the container with seed simmered left until reached boiling point.
7. After he allowed to cool to wash it and proceed to the next process.



Procedure dough preparation

After cooling and washing the masa took the electric mill to turn it into the dough from which tortillas are made.



1. a portion of the cold and clean masa on the electric grinder or homemade manual method was poured.
2. Then he began to grind the masa.



3. Occasionally it poured some water along with the nixtamal to help this will not stay attached.
4. Finally the mass, a powdery texture and slightly moist was obtained.

Procedure for preparing the desiccator

The dehydrator is a prototype that helps the dehydration process the dough for future conservation without the use of preservatives and also without altering the nutritional content.



Our solar dehydrator is an indirect type measures 55.5 x 30 x 30cm. and an energy absorbing panel of 24x37 cm.

1. First we cut the wood necessary to develop a box measures 30cm 55.5x a top and a bottom 23x 30cm 55.5cm 30X.



2. Then paste the parts of the box.





3. For the absorption cell and subsequently need one glass will paint black, also pitamos the rest of the box.

4.- Within the prototype is forraremos of foil to help to preserve and distribute heat, likewise a small hole in the lid is made to allow steam to escape dehydration.

5. They are placed inside the two trays where anger mass for drying.

The drying time for 2 kg of mass is 1 hour with solar energy.



Drying process and packaging

1. We placed 2 kg of mass per tray in 1 hour in the sun.
2. We draw mass desiccator and pour into a container.
3. Then fill in 1kg bags and sealed.
4. Finally put the labels out of the bag.





Procedure making tortillas

1. We placed in a container 1 product bag TORTIGERM to produce 3 kg of tortillas and add 250 grams of water, mix until dough.

2. They can be made by hand or machine.



3.- sewn over medium heat for a few minutes and be ready to eat in various dishes or even alone, also draw with them various foods.





BIOFRASCO

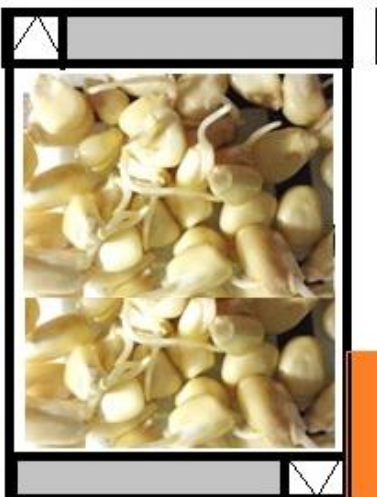
It is a technological prototype aims to increase production and improve their nutritional germ capabilities, properties Bio-Flask are:

- Improves time germinated within 48 hours
- Water savings up to 70% for the process germinated
- self-control for the correct temperature and humidity for a faster germinated and utilization of nutrient seed own system.
- only system used in the process of germination of corn without the use of pesticides to accelerate or improve their properties germ.

The Bio-flask with 250 gr usually produce 1kg of seed, the amount of production tends to vary the size and capacity of Bio-bottle, which goes to 20kg.



Válvulas de humedad



Sistema de filtrado

Regulador y monitoreador de temperatura

Base del Biofrasco

PRESENTATION OF THE PRODUCT

- ✓ The product consists of a bag capacity of 1 kg of the product.
- ✓ Food without preservatives.
- ✓ Easy preparation.
- ✓ Same flavor, color and texture than a conventional tortilla.
- ✓ 50% cheaper.
- ✓ 50% rendidor and yielding up to 2 kg of tortillas.
- ✓ 60% more than a conventional rendidor omelet or other product.



Preparation:

1. Pour the contents into ½ liter of water.
2. Mix the contents until the dough.





Product labeling and nutritional content

*Nextamali tlaxkaltia pampa
luelik xonotli**Uel Kuali pampa kayelistli ...**Ikpialitok: 1K**Nextamali tlaxkaltia pampa, xitlaxkalchiua 2 kilo:**Uel Kuali pampa pakayelistli 5 tlaxcali temaka:*

calories		120 kcal.	
Kuitlanatstik		1.50 g.	
Cholesterol		0 mg.	
Sodium		17 mg.	
carbohydrates		21 g.	
Tsayanatli		4.20 g.	
Chiankakatl		2 g.	
protein		3.40 g.	
Tlakopatli A	20ug.	Tlakopatli C	7 mg.
Tlakopatli B12	0 ug.	Calcium	3 mg.
Tepostli	0.60 mg.	Tlakopatli B3	2 mg.

Tlaxkaltia:

- 1• Tlatlalia yejuatl nextamali TORTIGERM kaxitl ko•
- 2• Tlatlalia 1 atliuani tech atl
- 3• Teneloa
- 4• Xitlax kalchihua



Corn germ powder for making tortillas



The taste of nutrition ...

Cont·Net· 1KG

*Polvo de germen maíz enriquecido, hasta 60% más
nutritivo! Contenido energético, porción 100gr:*

Calorías	120 kcal.		
Grasa	1,50 g.		
Colesterol	0 mg.		
Sodio	17 mg.		
Carbohidratos	21 g.		
Fibra	4,20 g.		
Azúcares	2 g.		
Proteínas	3,40 g.		
Vitamina A	20 ug.	Vitamina C	7 mg.
Vitamina B12	0 ug.	Calcio	3 mg.
Hierro	0,60 mg.	Vitamina B3	2 mg.

Modo de preparación:

- 1· Vierta el contenido en ½ litro de agua·*
- 2· Mezcle el contenido hasta obtener la masa·*
- 3· Prepare sus tortillas al gusto·*

TORTIGERM POLICIES

Mission:

Our mission is to combat maternal and child malnutrition through our passion for life, our respect for diversity and our commitment to create exceptional opportunities for growth and human development, so that our children can achieve their dreams and have a better quality of life.

Vision:

TORTIGERM has the vision to reach the farthest corners ending maternal and child malnutrition and grow as a company offering jobs to indigenous mothers having a quality product and thus end hunger in the world.

Values:



TORTIGERM's main values Benevolence with those who have less, struggling because they have a better nutritional quality, through our product, service attitude to give them all our assistance to the neediest communities, ecological responsibility, innovating our production processes being environmentally friendly, and Transcendence to make a difference in the world.

5) EXPLANATION OF THE PROJECT'S SUSTAINABILITY (AS APPLICABLE)

FINANCIAL FEASIBILITY AND TECHNICAL

Project evaluation
"Tortigerm"

Cost benefit analysis

Investment: \$ 32,813.00

Machinery and Equipment

Description	Unit of measurement	Quantity	Unit price	Subtotal	IVA (16%)	Total
Molino home		one	\$ 900.00	\$ 900.00	\$ 144.00	\$ 1044.00
Industrial Tortillador		one	\$ 5,000.00	\$ 5,000.00	\$ 8,000.00	\$ 5,800.00
Pesa commercial		one	\$ 300.00	\$ 300.00	\$ 48.00	\$ 348.00
Solar heater		one	\$ 4,000.00	\$ 4,000.00	\$ 640.00	\$ 4640.00
Work table		one	\$ 500.00	\$ 500.00	\$ 80.00	\$ 580.00
Anaqueles		one	\$ 1,000.00	\$ 1,000.00	\$ 160.00	\$ 1,160.00



TOTAL						\$ 13572.0
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Description	Unit of measurement	Quantity	Unit price	Subtotal	IVA (16%)	Total
Advertising		one	\$ 500.00	\$ 500.00	\$ 80.00	\$580.00
TOTAL						\$580.00

Work tools

Description	Unit of measurement	Quantity	Unit price	Subtotal	Iva (16%)	Total
Kit Cookware		one	\$ 200.00	\$ 200.00	\$ 32.00	\$232.00
Uniforms and hygiene control		2	\$ 150.00	\$ 300.00	\$ 48.00	\$348.00
TOTAL						\$580.00

Raw material

Description	Unit of measurement	Quantity	Unit price	Subtotal	IVA (16%)	Total
Bio-Flasks		5	\$ 500.00	\$ 4,000.00	\$ 640.00	\$4,640.00
Corn	kg	480		\$ 6,200.00	\$ 992.00	3,200.00
TOTAL						\$7,840.00

Advertising

Supplies

- Workforce

Personal	Turn	Minimum salary		Labor Day	weekly cost	Monthly cost
3	Halftime	\$ 73.04		6	\$ 1533.84	\$6,135.36
					\$6,135.36	\$ 6135.36



	Quantity	Cost	IVA	Total
Envelope bags	1200 sheets	\$ 200	\$ 32	\$232
	500	\$ 150	\$ 24	\$174
			TOTAL	\$406

	weekly cost	Monthly cost
Rent	125	500
Water	\$ 300.00	1200
Light	\$ 250.00	1000
TOTAL		\$ 2,700.00

	cost
permissions	\$ 1000
TOTAL	\$ 1000

Permissions

Breakeven (Monthly)

CF	cost	CV	cost
Light	\$ 1000.00	Corn	\$ 3,200.00
Water	\$ 1,200.00	Wrap and bags	\$ 350.00
Workforce	\$ 6135.36	Uniforms and hygiene control	\$ 300.00
TOTAL	8335.36 \$		\$ 3,850.00

Unit cost

$$CF + CV = \$ 8335.36 + \$ 3,850.00 = 11.60$$

QP 1050

Unit Cost: \$ 11.60

Units produced

$$\frac{CF}{P} = \frac{8335.36}{12} = 691.01$$

PV-CVU 12-3.6

Utility

Utility: 30.01



CV: $11.60 * 1.30 = 15.08$

<i>TORTIGERM</i>	
1 Kilo: \$ 12.00	

- ✓ Obtaining corn: In production seasons and the region of the state of Hidalgo a price of \$ 3.0 per kilogram is reached, it is cheaper for wholesale kilograms.
- ✓ Input: Water and electricity.
- ✓ Cooking corn: By using solar heater that guarantees 30 years of life and greatly reduces the cost of production.
- ✓ The Bio-Flasks: Prototypes reducing costs usual seedlings with costs up to \$ 500 per tray 10 kg instead Bio-bottle 1 produces 20 kg.
- ✓ Labor: available, thus generating jobs for men and women, do not require specific knowledge.
- ✓ It is a food with 60% more nutrients than the common omelette or other product (amino acids Tryptophan Lysine)
- ✓ 50 \$ highest yield to produce 2 kg of tortillas one product bag.

ENVIRONMENTAL IMPACT

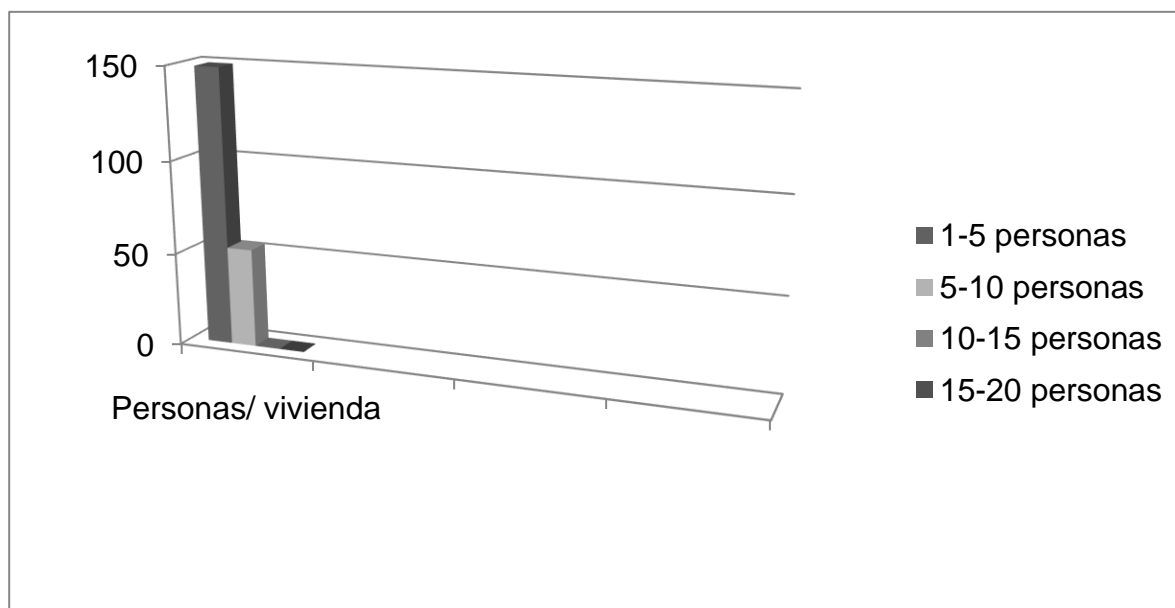
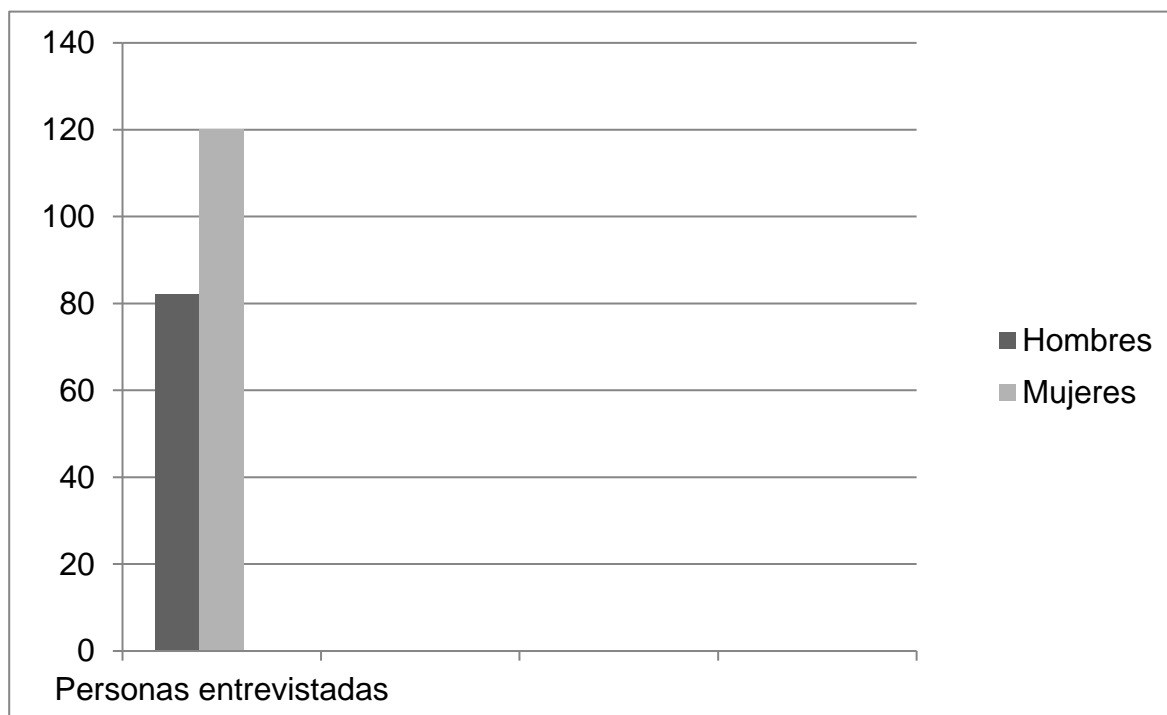
Many processes for the preparation of our project have ecological methods and resources-saving and solar heater desiccator currently has a boom, meanwhile germination processes require a small amount of water.

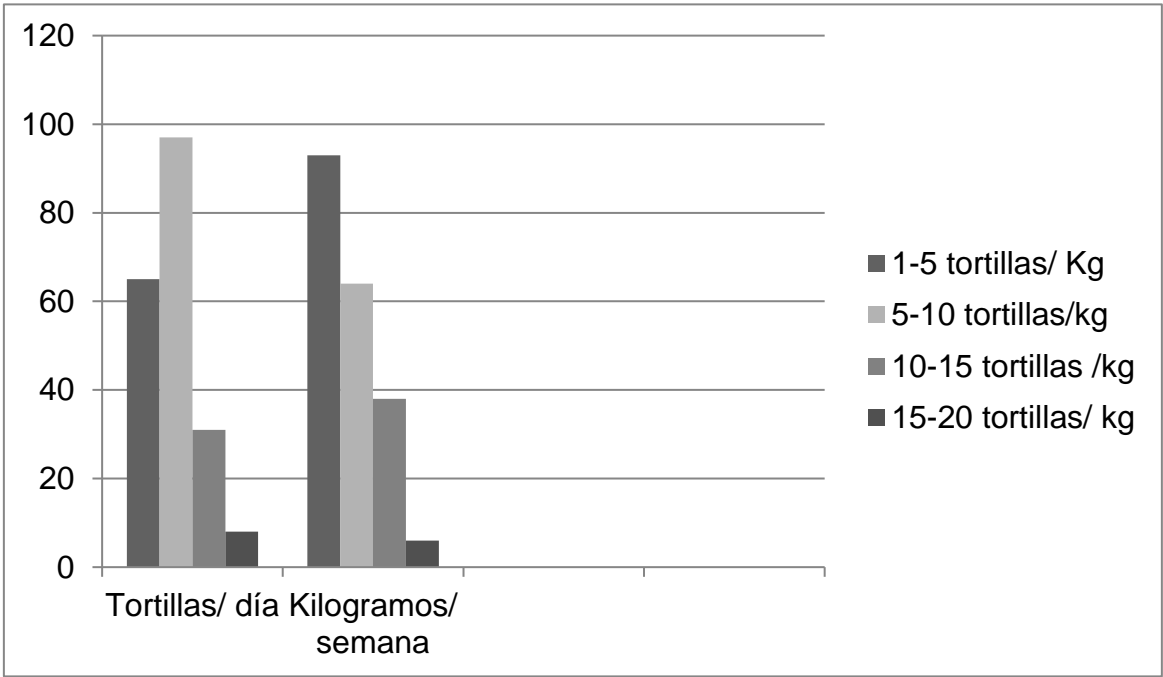
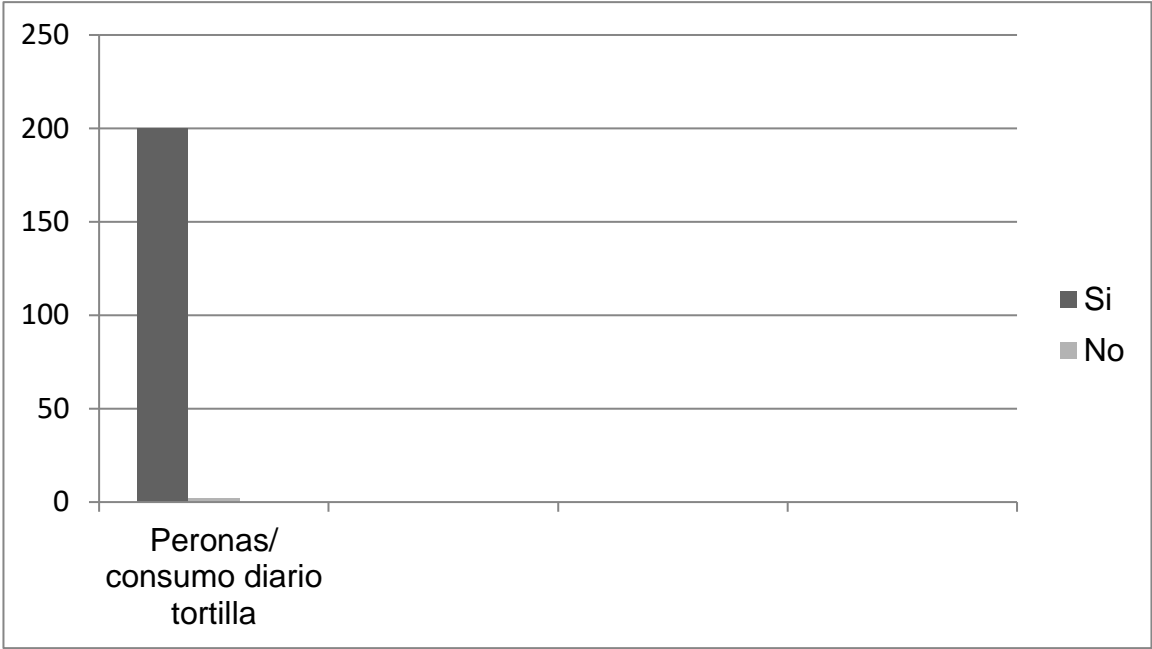
It is also important to mention that this production method can be used tortilla corn is not high quality in some crops produced and seem unfit for human consumption, provided it meets quality standards for food.

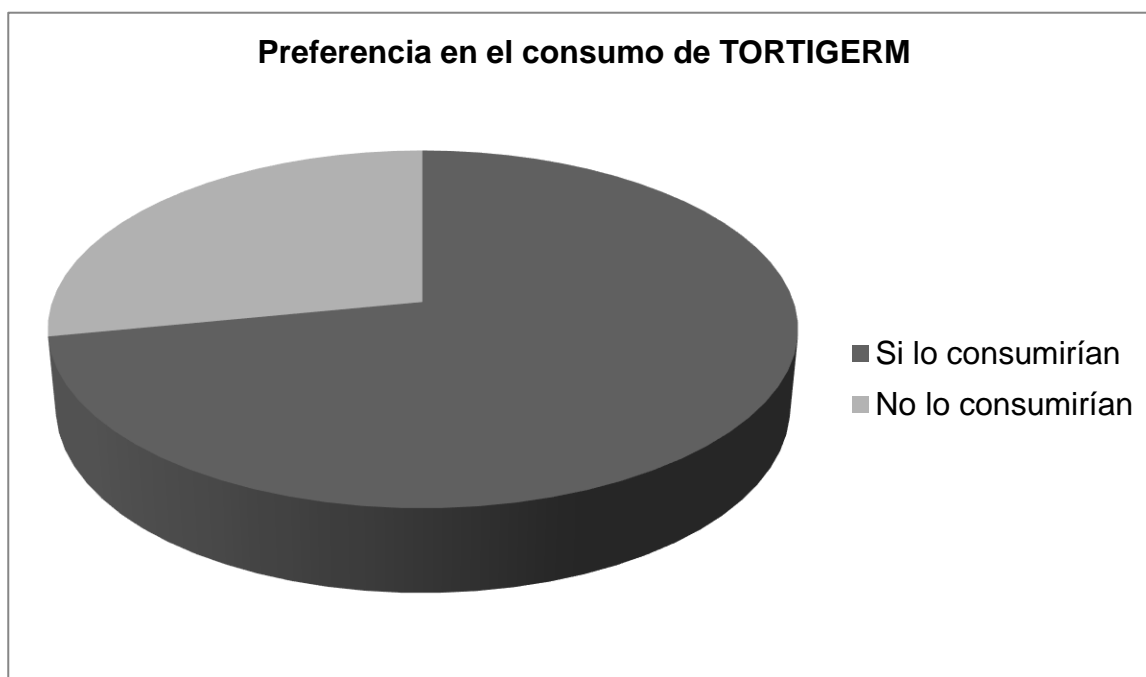
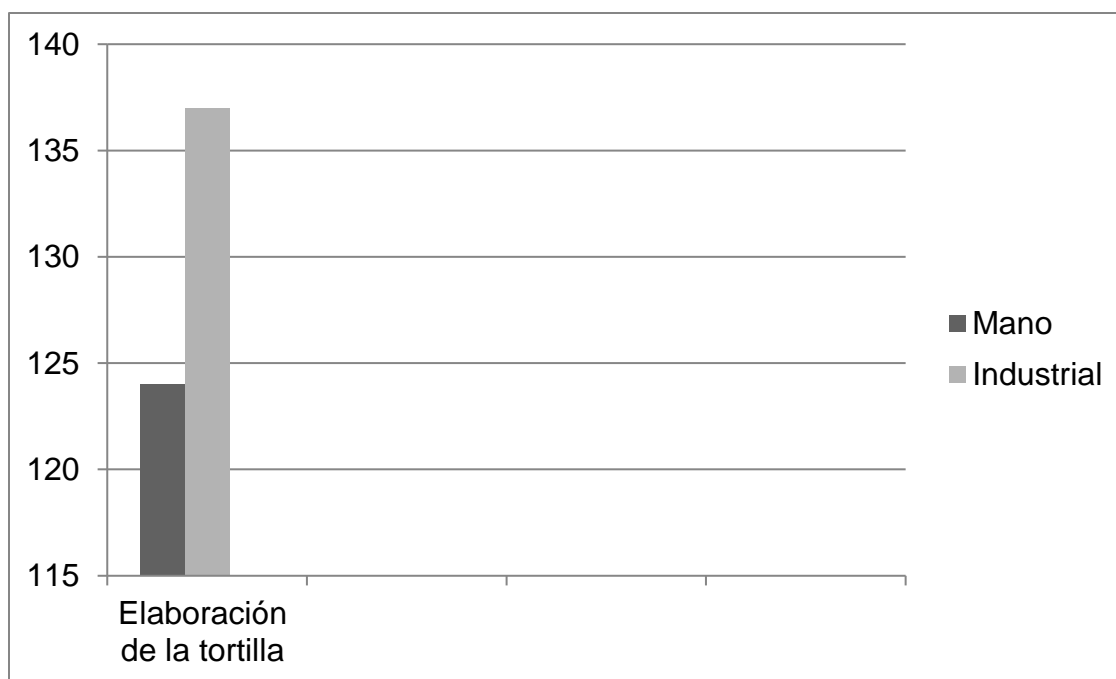
Meanwhile can increase levels tortilla production with fewer corn used conventionally, and can use various types of corn production.



Social study of the project
People interviewed a sample of 200









6) DIRECT AND INDIRECT BENEFICIARIES BREAKING DOWN ITS VULNERABLE SITUATION, ATTACHING IMAGES.

MALNUTRITION IN HIDALGO

One of the states with the highest malnutrition is Hidalgo, as more than a thousand communities in Hidalgo live in extreme poverty and marginalization, placing the company in fourth place at the national level poverty; Mezquital Valley is the most affected area.

Over 250 thousand people are unemployed, living on what little land gives aid or state government. In recent years the production of corn and beans decreased by 50%.

Lack of food and resources cause in these marginalized communities a year 50 children from malnutrition and other ailments related to 30 poor diet die.

To counteract the effects of malnutrition, the National System for Integral Family Development (DIF) State delivers daily school breakfasts, which are not enough to counter malnutrition.

In our country 68% of the rural population is poor, of these 26% are indigent, about 40% of the population is below the minimum nutritional commonly accepted.

Health Secretary of the State Government has indicated that malnutrition deficiencies occupy the ninth leading cause of mortality; Likewise in chronic degenerative diseases the last ten years have seen a rapid increase.

According to the diagnosis made by the State Development Plan 1994-1999, the nutritional aspect of the state's population of Hidalgo deficiencies were detected; food consumption is affected by low incomes.

Hidalguense the usual diet consists of maize and beans, with significant consumption of vitamins, inorganic nutrients, energy nutrients necessary for the growth and preservation of health deficit.

In June 2011 Congress unveiled Hidalgo dramatic figures, that only now at least one child dies every month by direct causes of malnutrition.

SOCIAL IMPACT

In the Mexican population increased malnutrition and lack of food is a problem that every day becomes more acute and when the amount of available energy and protein is insufficient to cover normal metabolic demands results in deterioration of physiological processes, as alterations of social, economic and knowledge development, but with the implementation of this product:

- The population count on a healthy and nutritious food they are used to eating every day.



- Managed to implement a product is truly adapted to the diet of the population, ie, the tortilla which combine with conventional foods such as beans and chile.
- Product cost will be lower than other conventional product that pays less than help the economy of poor families.
- People can meet their food requirements with TORTIGERM consumption, thereby reducing malnutrition rates and therefore the diseases it causes.
- Generate jobs for mothers.
- Replace nutritional porridge.

Beneficiary communities:

Omitlán Municipality of Juarez:

According to the report Poverty and Malnutrition CONEVAL 2010 the state of Hidalgo occupies a 9th place in our country in degree of malnutrition, According to the INEGI and the national crusade against hunger by 2015, a degree of marginalization "MEDIUM" in this municipality lives, CONEVAL indicates that from 2008 to 2010 the percentage of the population with lack of access to food increased from 23.9% to 29.0%.

- Agua Escondida (7 habitantes)
- Agua Fría (116 habitantes)
- Cerro Gordo (177 habitantes)
- Ciénega Chica (10 habitantes)
- Ciénega Grande (95 habitantes)
- Cruz de Mujer (180 habitantes)
- Cruz de Omitlán (La Cruz) (102 habitantes)
- Cuchilalpan (138 habitantes)
- El Capulín (105 habitantes)
- El Comanche (150)
- El Crucero (Crucero de Huasca) (180)
- El Manzano (36)
- El Mirador (La Coyotera) (123)
- El Perico (172)
- El Resbalón (114)
- El Tejocote (141)
- Ignacio López Rayón (182)
- Lagunilla (118)
- Las Palomas (89)
- Los Tapancos (151)
- Manuel Teniente (El Llano) (175)
- Mixquiapan (110)



- Morelos (109)
- Omitlán de Juárez (100)
- Puente de las Américas (126)
- Rincón Chico (127)
- San Antonio el Paso (100)
- Santa Elena (190)
- **Tres Cañadas (113)**
- Velasco (150)
- Venta de Guadalupe (100)
- Vicente Guerrero (144)

TOTAL: 3690 HABITANTES

NOTE: Product distribution will be made according to communities with higher nutritional needs (Underline) and further marginalization at strategic points in the community, such as: the municipal government, schools or community kitchens.



Original photographs in activities in this municipality





PROYECTO 100 X 100 MÉXICO



FURMEX
Fondo Unido Rotario de México, A C





PROYECTO 100 X 100 MÉXICO



FURMEX
Fondo Unido Rotario de México, A.C.





7) LOCATION OF THE PROJECT

- Omitlán De Juárez Hidalgo, La Lagunilla, Conocido S/N, Hidalgo México

8) AREA OF FOCUS

- ☐ Peace and conflict resolution
- ☐ Disease prevention and treatment
- ☐ Water, sanitation, and hygiene
- ☒ **Maternal and child health**
- ☐ Literacy and basic education
- ☐ Community economic development
- ☐ Other (please specify _____)

8) PROJECT BUDGET



The budget of the projects is \$ 32,813 pesos, with the following proposed funding:

SOURCE	AMOUNT IN PESOS
Mexico commitment from applicant	\$ 6562.6
Proposed support from other Mexico sources FURMEX Other (please specify)	\$ 6562.6
Proposed US Heart 2 Heart support	\$ 19687.8
TOTAL	\$ 32813

Note: The minimum commitments from applicants are as follows:


	<u>Project Size (pesos)</u>	<u>Minimum Commitment (pesos)</u>
Rotary clubs	10,000 – 100,000	20% of total project budget
Rotary clubs	100,000 – 200,000	20,000
Rotaract and Interact clubs	10,000 – 200,000	10% of total project budget

1) The project detailed expenditures are as follows:

DESCRIPTION	PRICE & QUANTITY		TOTAL
Molino home	\$ 900	one	1044
Tortillador-Dehydrator	\$ 5000	one	5800
Weight	\$ 300	one	348
Heater	\$ 400	one	4640
Work table	\$ 500	one	580
Anaqueles	\$ 1000	one	1160
Utensils	\$ 200	one	232
Uniforms and Hygiene	\$ 300	2	348
BIO-Flasks	\$ 4000	5	4640
Corn	\$ 3200	480 kg	3200
Wrappings	\$ 350	1200	406
Advertising	\$ 500	one	580
Hand work	\$ 6135	3	6135
Supplies	\$ 2700	one	2700
Legal permits	\$ 1000	one	1000



FIRMAS



APPLICANT NAME Diego Melo Orta

ROTARY CLUB PRESIDENT 2019 - 2020, NAME AND SIGNATURE, E-Mail and Phone

MARIA HILDA VARGAS AGUIRRE  hva3011@hotmail.com, 7751083631

ROTARY CLUB PRESIDENT 2020 - 2021, NAME AND SIGNATURE

JOSE LUIS RODRIGUEZ VALDEZ 7711437862 _____

PROJECT LEADERS DURING PROJECT DURATION – NAMES AND SIGNATURES

LEADER 1



Diego Melo Orta

LEADER 2

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