



Faculty of agriculture and vet. Med
An- Najah National University

Functional Cheeses and Fresh Whey

Nutritional and Food Management

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Did you know that bacteria might actually *keep* you healthy?



It all just depends on the type of bacteria. In this case, we're talking about the benefits of probiotics.





Probiotics are live bacteria and yeasts that are good for your health, especially your digestive system.



We usually think of these as germs that cause diseases. But your body is full of bacteria, both good and bad.



Probiotics are often called "good" or "helpful" bacteria because they help keep your gut healthy.





How Do They Work?

Researchers are trying to figure out exactly how probiotics work. Some of the ways they may keep you healthy:





1- Crowding out bad microbes



2- Creating enzymes that destroy harmful bacteria



3- Stimulating secretion of IgA and regulatory T-cells, which support immune function





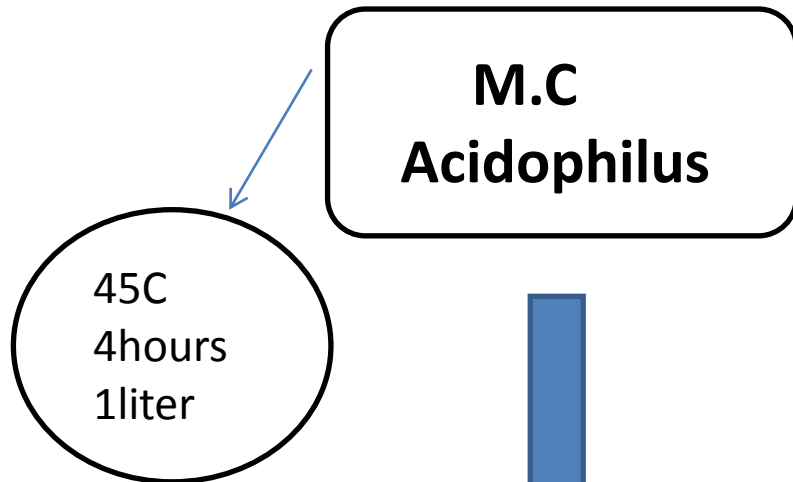
However, the Palestinian studies indicate that the consumption of cheese in the Palestinian market increases from year to year, so we adopted cheese in this project





Based on the effective role of Probiotics, we introduced it into the traditional cheese to become a functional cheese, is it has all the functions of the Probiotics mentioned







PH=5.5
TEM. = 45C

MILK
Pasteurization

↓
Add 3% Acidophilus

↓
Add Rennet

↓
Coagulation

↓
Cutting

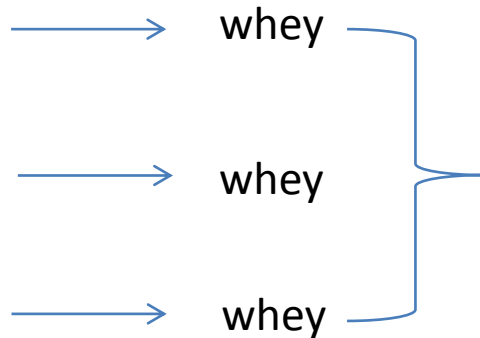
↓
resting

↓
cutting

↓
molding

salting

↓
PRESSING
&
Packaging



Homogenize
↓
Add carrageenan
+ sugar
+ vanilla
+ pouncoua red
+ Natamycin
↓
packaging

Heat to boil and
then cool quickly



Whey protein

Is one of the two proteins found in milk, with the other being casein. When a coagulant (usually rennet) is added to milk, the curds (casein) and whey separate. Whey protein is the water-soluble part of milk.



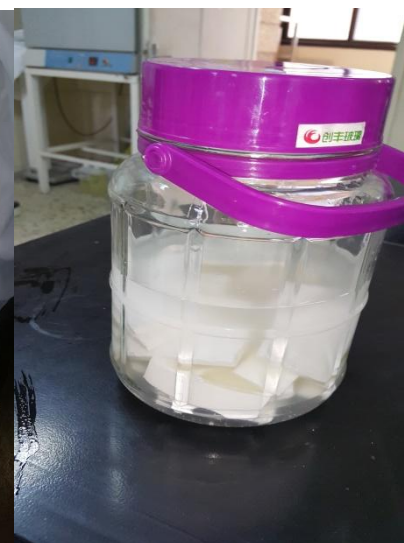
Whey is absorbed faster than other forms of protein



The positive of this product is **inexpensive** and have a big amount of protein



Some pictures for our product





Tests carried out:

1- Measurement of pH

2- Cultivation of bacteria in several stages of cheese manufacturing.(MRS).

3- Measure the nutritional value of a product fresh whey





Result

Before the addition of Rennet = 2100 CFU/g

After the addition of Rennet = 2300 CFY\g

Nutritional value of fresh whey:

Fat=0.08

Den=24.01

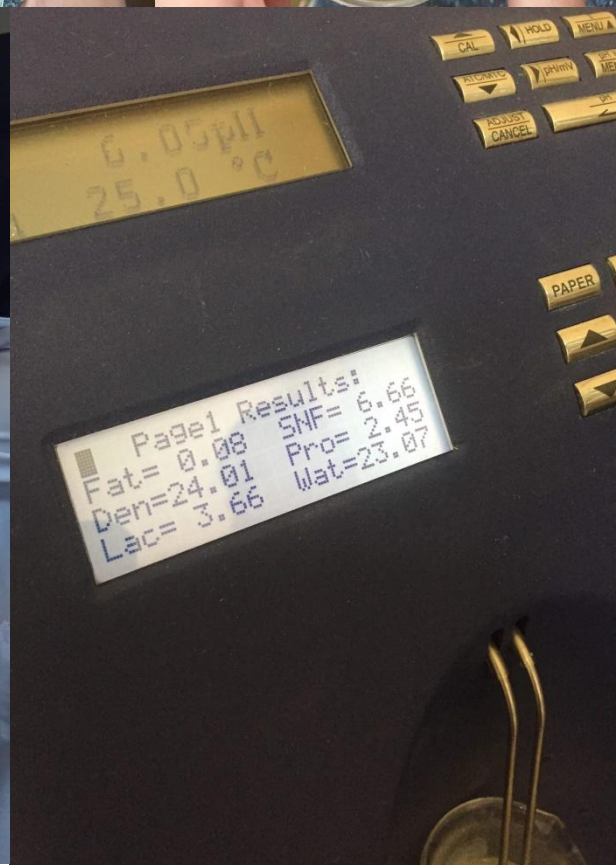
Lac=3.66

SNF=6.66

Pro=2.45

Wat=23.07





QUESTION 1

What do you think about the taste of cheese compared to traditional cheese?

5 4 3 2 1

QUESTION 2

Is there an unwanted smell in the cheese ? if there is a smell ,please specify your answer with a number

5 4 3 2 1

QUESTION 3

The taste of acidity in cheese is desirable or undesirable ?

5 4 3 2 1

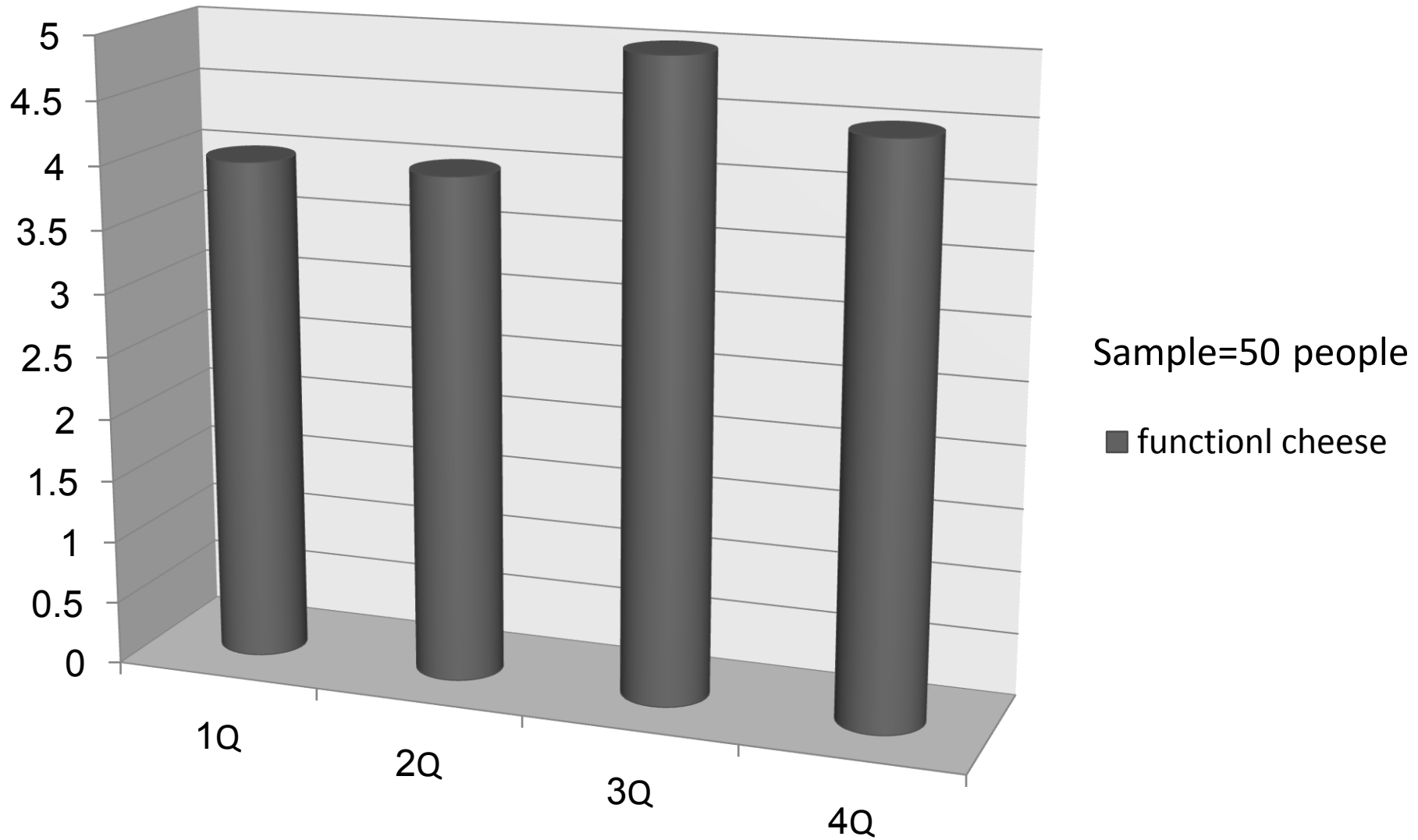
QUESTION 4

Do you like the white color of this cheese ?

5 4 3 2 1

Functional chesses questionnaire

Functionl Cheese



QUESTION 1

What do you think about the taste of this drink ?

5 4 3 2 1

QUESTION 2

What do you think of the degree of pink color in it ?

5 4 3 2 1

QUESTION 3

What do you think of the smell of this drink?

5 4 3 2 1

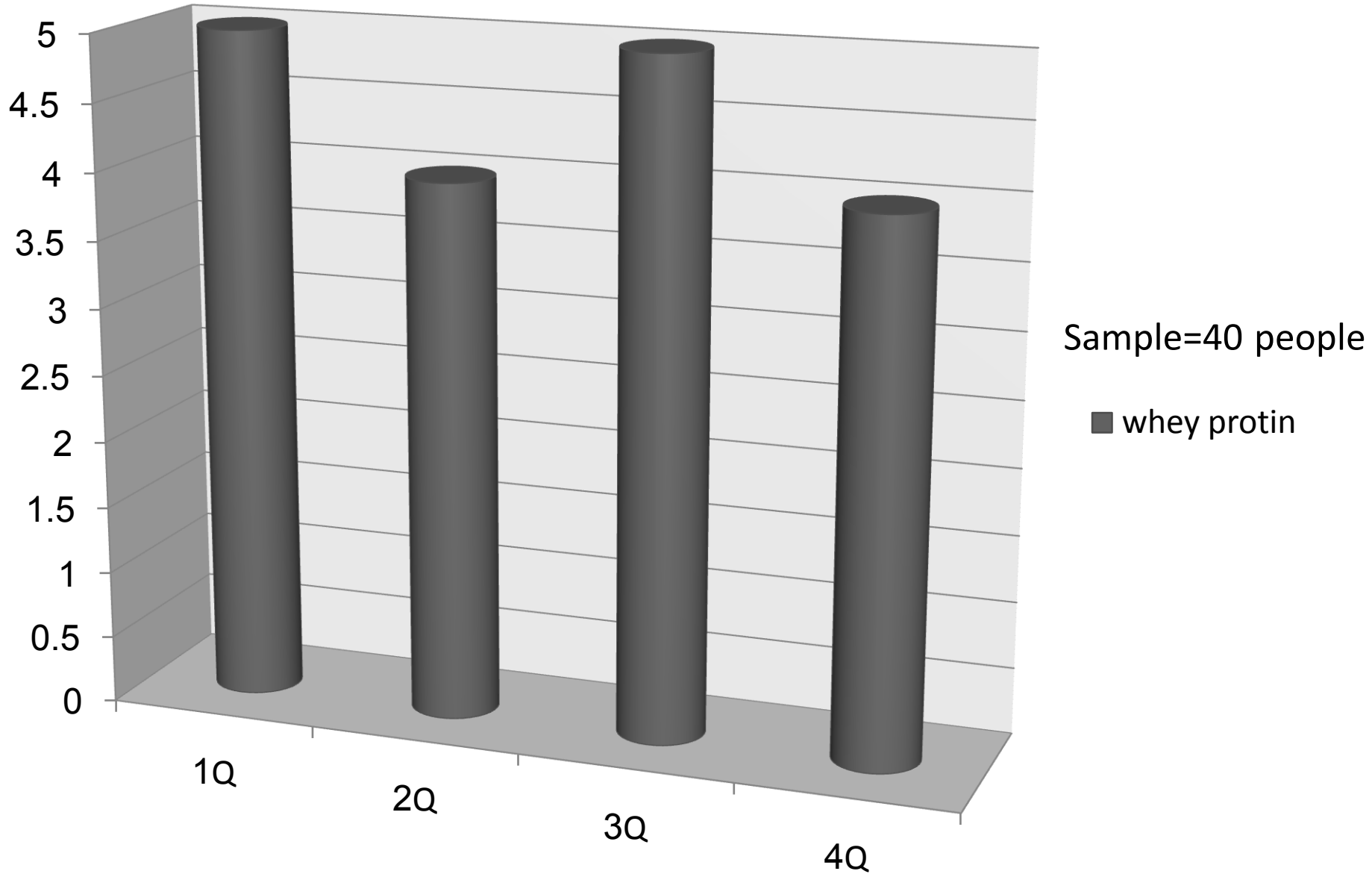
QUESTION 4

If you are a player in th sports club ,please answer the question , Is this drink similar to the protein you drink after exercise ?

5 4 3 2 1

Fresh whey questionnaire

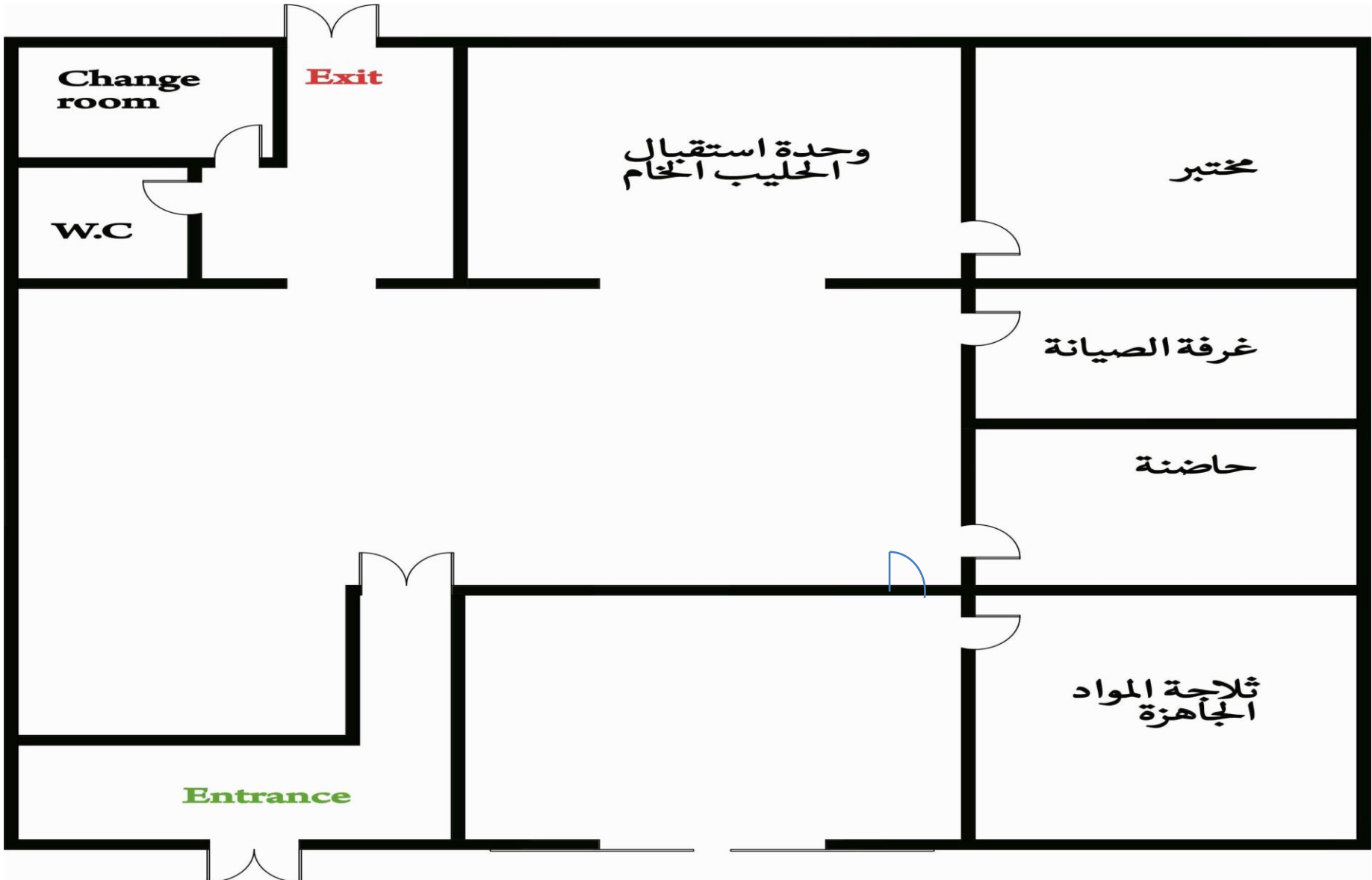
Fresh Whey



Budget & Requirement

- 1- The milk reception unit = 50 thousand NIS
- 2- Pasteurization = 130 thousand NIS
- 3- water heater and engine = 20 thousand NIS
- 4- Cheese Press = NIS 600
- 5- Refrigerator = 1200 NIS
- 6- mayitr + Trays = 500 NIS
- 7- Final packaging = 13 thousand NIS
- 8- Materials used to manufacture Fresh whey = \$ 1000
- 9- Materials used for the manufacture of cheese = \$ 140
- 10- The pH meter = 13 thousand dollars
- 11- Thermometer = \$ 1000
- 12- Other materials = \$ 1000

The factory Design





Project outlook

1- Add probiotics to other products other than cheese such as Laban up or yogurt with the addition of flavors



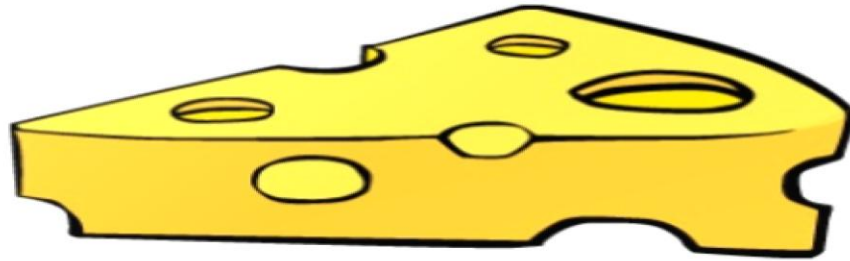
2- Develop the outer packaging of the product such as large bottle of whey protein



3- Add various flavors of whey protein such as chocolate, Vanilla or bananas



Thank You....!
&
Enjoy the Change...



And the CHEESE...!!!