



#### Article

**Opinions of Members of the Department of Food Sciences with Obstacles to Food Processing in the Dairy and Food Industries Laboratory of the College of Agriculture and Forestry / University of Mosul** 

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Abstract: The research aims at identifying the obsticles against the manufacturing of foods at the factory of College of Agriculture / Mosul University from the point of view of the samples members studied and then finding the differences between the size of these obsticles against producing foodstuff at the factory of foodstuff production at the college mentioned above in accordance with the variables of (gender, age, occupation and the number of researches conducted). The sample of the study involved all the subjects of the research population, which was represented by the teaching staff and the primary and the higher studies students at the department of Foods Science. Results showed that the level of size of obsticles, in general, ,was medium and tends to be high and the domain of the financial obsticles was in the first rank and the domain of the technical obsticles was the last in order. Also, results demonstrated that there were no significant statistical differences in the size of obsticles of foodstuff manufacturing according to the variables of (gender, age and occupation). On the other hand, results showed that there were significant differences in the size of obsitcles of foodstuff manufacturing according to the variable of the number of researches performed at the factory. The researchers submitted a set of recommendations, which include: elevating the production capacity of the factory via urging the teaching staff members to conduct researches that are related to developing the factory and to ensure inroducing the machines and technologies relevant to the activities and capacity of the factory and applying a work mechanism that achieves the fruitful cooperation between the departments of College of Agriculture and Forestry and the top management to connect the various products of the College with the Factory of dairy products and the foodstuff industry / Mosul University in order to reduce the efforts and costs as well as the assurance of the safety and quality of the products.

Key words: Food industry, Dairy, Manufacturing Constraints.

### 1. Introduction

The national sector, in general, and the sector of the foodstuff industry, in particular, is considered a major pillar of the national economy (Al-Janabi and AlShamari, 2013) through its contribution to achieving the economic and social development (Qish and Mahri, 2019). The importance of the foodstuff industry increases due to its relation with many other economic activities, especially the sector of agriculture (Sabeeh and Zamil, 2013). The relationship between agriculture and the foodstuff industry is characterized with being integrating and the agricultural sector contributes to improving the food security for the members of the society (Ibn Tafat, 2011). The foddstuff industry relies, in all its inputs, on the raw agricultural products, whether they were of plant or animal origin (Yousif and Munshid, 2015). Therefore, coping with the dimensions of the scientific and technological in the field of foddstuff manufacturing is regarded as the biggest challenge in the advanced countries all over the world (AlMu'allem, 2021) and supporting the foddstuff production in Iraq doesn't represent the strategic pespective an objective per se, but a means to promote the efficiency of the economy and making it less susceptible to the acute fluctuations that it might encounter (Managing the industrial studies and policies, 2014) especially within the policy of openness, absence of the economic monitoring and the presence of low-cost competitive alternatives in the Iraqi imarket (Sattar, 2016). This was reflected on the reality of the foldstuff factories and their products of services and led to the deterioration of the their production (Khalaf and Rayya, 2021). Providing the food by depending on import from abroad is only a temporary solution to the case of providing the food and it doesn't fulfil the concept of food security that is related to producing a sufficient amount of the strategic food products on the local level (Rizq, 2019). The people, who doesn't produce his food by itself, doesn't have the freedom to choose or to fulfil self-determination (Hussein, 2021). Food security hasn't been achieved yet, although all the requirements and bases of development are available, which encourage the establishment of developed foodstuff industry (AlNajjar and Kadhim, (2017). Therefore, it is necessary to pay a good attention to this sector and to encourage the small and medium-sized industrial projects developing the investment and focusing on handling the obsticles that might be encountered Arabivat et al. (2017). As it might be known, the factory of the College of Agriculture and Forestry / Mosul University is below the acceptable required level due to the presence of certain administrative, technical and financial obsticles that prevent its development although there are several encouraging facors to develop it and this motivated the researchers to identify the size of these obsticles and finding the convenient solutions to enhance it and making it a distinguished model that provides competitive high-quality food products.

### 2. Materials and Methods

The research sample involved all the populations individuals, who were represented by the teaching staff members and the students of primary and higher studies at the department of Food Sciences and the first grade students were excluded due to their poor experience with the factory. Also, (30) individuals were excluded to achieve invariability and thus the sample of the research included (50) individuals. A questionnair form was prepared for the purpose of collecting the relevant data as a main tool for data collection. After reviewing some relevant literatures and previous studies, the questionnair form was made to include two parts; part one involved the personal and occupation characteristics such as (gender, age, occupation and the number of researches conducted), while part two involved (33) items, each of which expressed one of the obsticles of foodstuf producing at the factory of College of Agriculture and Forestry and they were distributed to three domains, which are: (The managerial and organizational obsticles, financial obsticles and technical obsticles). To get acquainted to the subject opinion about the size of obsticles, he/she was asked to answer a scale of five alternatives opposite to each item, they are: (very great, great, medium, small and very small). Scores were assigned for the alternatives as (1, 2, 3, 4, 5) respectively. Then the superficial validity was checked by submitting the questionnair form to a group of specialized experts in extension to show their opinions and their remarks concerning the items of the questionnair, their clarity and the accuracy of measurement. After taking their remarks into consideration, omission, addition and / or modification was conducted on the questionnair. The invariability coefficient was determined using Alphacronbach method as the invariability value for the three domains was (0.87). moreover, the T test, single variance analysis were used by means of using the program of SPSS.

#### 3. Results and Discussion

#### First

Identifying the size of the obsticles of foodstuff manufacturing at the factory of College of Agriculture and Forestry / Mosul University from the point of view of employees of the department of Foodstuff and this objective was achieved through the following secondary objectives:

1- Determining the level of the obsticles of producing the foodstuff at the factory of College of Agriculture and Forestry / Mosul University from the points of view of individuals in the following aspects: (maagerial and organizational obsticles, financial obsticles and technical obsticles) in general.

To determine the obsticles in the three mentioned-above aspects, the scores that express the size of obsticles of foodstuf producing af at the factory of College of Agriculture and Forestry were divided into three categories using the actual domain and as shown in table (1).

Table (1). The level of size of obsticles of the foodstuff anufacturing at the factory of College of
Agriculture and Forestry from the sample individuals' points of view in general

Size of obsticles	No. of individuals	Percentage
Low (107-124)	12	24
Medium (125-143)	22	44
High (144 and more)	16	32
Total	50	100%

From table (1), it is clear that (76%) of the sample respondent think that the level of size of obsticles in general is medium and tends to be high and this expresses the size and the seriousness of these obsticles that prevents the development of the facory and the possibility of changing it into a distinguished production unit.

2- Arrangement of the domains of obsticles of the foodstuff production in accordance with their size from the points of view of sample individuals.

Results of table (2) indicate that the financial obsticle domain was in the first rank with a mathematical mean of (4.047) as a score and this might be due to the poor fund allocation to the factory.

Although the finance is the cornerstone of institutions, the aspect of the technical obsticles came in the last rank with a arithmatic mean of (3.95) as a score and this denotes that the technical aspects can be tolerated if finance and proper management of the factory were present.

# Table (2). Arrangement of the fields of manufacturing obsticles according to their sizes from the sample individuals' points of view

No.	Fields	mean	Percentage	Rank
1	Financial obsticles	4.316	86.32	1
2	Managerial and organizational obsticles	4.047	80.94	2
3	Technical obsticles	3.095	61.9	3

Maximum score = 5

3- Arrangement of the of obsticles of the foodstuff nufacturing accordance to their size from the points of view of sample individuals in the domains of (managerial and organizational obsticles, financial obsticles and technical obsticles).

#### A- Financial obsticles

Results in table (3) refer that the obsticles: (lack of liquidity to provide the operation requirements for the process of production, the halt of most of production lines and the lack of machines used for packaging the processed products) came in the first ranks and the reason behind that might be due to the old-aged tools and machines used in the factory and due to the imperfect used and exploitation of the tools and equipment present at the factory. As for the obsticle (the multiple sources of raw materials and not depending on specific sources, which increases the costs, this came in the last in order.

No.	<b>Financial obsticles</b>	mean*	Percentage	Rank
1	Inavailability of liquidity to provide the operation requirements for the production process	4.44	88.8	2.5
2	Most of the production lines are not operational	4.44	88.8	2.5
3	Inavailability of most of the automatic equipments of packaging for the porduced foodstuff.	4.44	88.8	2.5
4	The factory's inability to self-finance its projects	4.4	88	4
5	Lack of vehicles for transporting the food products and marketing them	4.38	87.6	5
6	Shortage of the fodd raw materials and the rise in their prices	4.32	86.4	6
7	The far distance between the raw materials locations from factory, which increases the production costs.	4.24	84.8	7
8	Lack of incentives and financial benefits provided to workers that encourage innovation and capacity building in the factory.	4.2	84	8
9	Failure to fully invest in the factory's production capabilities due to lack of funding.	4.18	83.6	9
10	Multiple sources of supply of raw materials and not relying on specific sources, which increases production costs	4.12	82.4	10

# Table (3). Arrangement of the items obsticles according to their size from the points of view of the sample individuals

#### **B-** Managerial and organizational obsticles

The results included in table (4) indicate the the obsticle (less attention to the media in terms of propagation for the food products manufactured in the factory) was the first in rank and the reason might be due to the lack of food products manufactured in the factory and their high quality and this led to the rapid marketing. As for the obsticle (the poor legislations related to the support of local food production) was in the last rank and this is because the legislations for consumer protection and product protection are present but they are not properly-applicable as there is no direct supervision from the factory.

No.	Managerial and Organizational obsticles	Arithmatic mean*	Percentage	Rank
1	Lack of attention to media concerning the advertisement to the factory- manufactured food products.	4.34		1
2	Flooding the market with the imported food products and weakening the competitive advantage of the local product.	4.3	86	2.5
3	Absence of the laws and regulations that enforce the importers to adhere to the quality of imported products.	4.3	86	2.5
4	Lack of communication and cooperation between the college factory and the institutions and the scientific institutes in the sector of food.	4.22	84.4	4
5	Lack of skilled and trained laborers in the field of food production.	4.18	83.6	5
6	There is no continuous improvement in the food manufacturing due to the absence of period followup of the work at the factory.	4.1	82	6
7	Poor extension should be handled as extension is important in making the farmers aware of the importance of crops.	3.98	79.6	7
8	The neglegince of the agricultural sector by the government deprives the food industry sector from the raw materials that are important.	3.94	78.8	8
9	Absence of arrangement and coordination between the food manufacturing units and the agricultural production units represented by the raw materials.	3.94	78.8	9
10	The absence of quantitative and qualitative assessment of the direct benefits of the food product.	3.74	74.8	10
11	Poor legislations that support the local food manufacturing.	3.48	69.6	11

Table (4). Arrangement of the managerial and organizational	obsticles according to their size
from the points of view of the sample individuals	

### **C- Technical obsticles**

Results in table (5) indicate that the obsticle (the slowness of technical advancement in food manufacturing) came as the first in rank and this cound be due to that the dairy and foodstuff factory of the College of Agriculture and Forestry / Mosul University is more academic than a production factory and that the equipment and tools of the factory are somehow sufficient for the academic work and this is the reason behind abstaining from developing them.

The obstacle (Lack of making the required tests for the food raw materials to check their quality and that they meet the standard specifications before manufacturing them) was in the last rank and the reason is that conducting such tests is due to the sufficient experience the employees and teaching staff members have if the necessary potentials are provided.

No.	Managerial and Organizational obsticles	Arithmatic mean*	Percentage	Rank
1	Slow technical advancement in food manufacturing	4.24	84.8	1
2	Lack of economic feasibility studies at the factory of the college.	4.2	84	2.5
3	Lack of programs for training and rehabilitating the staff of the factory in an efficient way.	4.2	84	2.5
4	Lack of attention to the researching activities related to manufacturing new products or developing the current products.	4.08	81.6	4
5	Poor technical expertise in terms of equipment, machines and tool maintenance at the factory.	4.04	80.8	5
6	The factory building of is not designed with dimensions suitable for the movement of the individuals and this makes the products more susceptible to contaminations and pollution.	3.94	78.8	6
7	There is a bad need to market the food products daily to avoid damage.	3.92	78.4	7
8	Lack of studies to identify the needs and desires of consumers and to satisfy them.	3.86	77.2	8
9	Lack of packaging and packing materials for the manufactured products at the factory.	3.76	75.2	9.5
10	A permanent need to the raw material on a daily basis as they cannot be stored for a long period of time.	3.76	75.2	9.5
11	Neglecting conducting the necessary lab tests and checks to ensure that the materials meet the standard specifications.	3.74	74.8	11
12	The small number of tests conducted to check the standard specifications of the materials to be manufactured.	3.66	73.2	12

# Table (5). Arrangement of technical obsticles according to their size from the points of view of the sample individuals

### Second

Finding the differences in terms of the obsticles against manufacturing the foods at the factory of college of Agriculture and Forestry/ Mosul University according to the following variables: (gender, age, occupation and the number of researches conducted at the factory)

### 1- Gender

The sample individuals were distributed according to this variable into two categories; the first included the males (16) who represented (32%) of the sample, while the second included the females (34) who represented (68%) of the sample. The arithmatic mean value for the first category was (133.56) and for the second the value was (136.09) as shown in table (6)

Gender	No.	Percentage	Arithmetic mean	Calculated T value
Male	16	32	133.56	0.629
Female	34	68	136.09	Insignificant
Total	50	100%		

# Table (6). The differences in points of view of the sample individuas in terms of estimating the size of obsticles according to gender variable

To determine the differences in the size of the obsticles concerning manufacturing the foods at the factory of college of agriculture according to the variable of sex, T test was used and the calculated value of T was (0.629), which is insignificant at the level of (0.05) and therefore the hypothesis of naught is accepted i.e. there is no significant differences according to the variable of gender.

#### 2- Age

The sample individuals were distrbibuted according to this variable into three categories; the first included (19-34 years) who represented (48%) of the sample, while the second included the age group (35-49 years) who represented (46%) of the sample, but the third one (50-66 years) represented (6%) of the sample and as shown in table (7):

Age	No.	Percentage	Arithmetic mean	Calculated T value
(19-34) years	24	24	136.42	
(35-49) years	23	46	133.17	0.809 Insignificant
(50-66) years	3	6	142.33	
Total	50	100%		

# Table (7). The differences in points of view of the sample individuas in terms of estimating the size of obsticles according to age variable

To find the differences in the size of obsticles according to the variable of age, the single variance test was used and the value of calculated T was (0.89), which is insignificant at the level (0.05) and so the the hypothesis of naught is acceptable, which means that there are no significant differences between the size of obsticles according to the variable of age.

### **3- Occupation**

The sample individuals were distributed according to this variable into three groups; the first included (14 bachelor students) who represented (28%) of the sample, while the second included (11 higher studies students) who stood for (22%) of the sample, but the third one (25 individuals of the sample) represented (50%) of the sample and as shown in table (8):.

 Table (8). The differences in points of view of the sample individuas in terms of estimating the size of obsticles according to the variable of occupation

Occupation	No.	Percentage	Arithmetic mean	Calculated T value
Bachelor student	14	28	135.86	
Higher studies student	11	22	134.27	0.045
Teaching staff member	25	50	135.40	Insignificant
Total	50	100%		

To find the differences in the size of obsticles according to the variable of occupation, the single variance test was used and the value of calculated T was (0.045), which is insignificant at the level (0.05) and so the the hypothesis of naught is acceptable, which means that there are no significant differences between the size of obsticles according to the variable of occupation.

#### 4- Researches conducted at the factory

The sample individuals were distributed according to this variable into four groups; the first included (5 individuals who never conducted researches) who represented (10%) of the sample, while the second included (4 individuals who rarely conducted a reseaarch) who stood for (8%) of the sample, but the third one (22 individuals who conducted researches sometimes) who represented (44%) of the sample and the last group (19 individuals who always conducted researches) and represented (38%) of the sample, as shown in table (9).

Number of researches conducted at the factory	No.	Percentage	Arithmetic mean	Calculated T value
No researches	5	10	127.80	
Rarely	4	8	126.75	
Sometimes	22	44	132.64	3.589*
Always	19	38	142.11	
Total	50	100%		

 Table (9). The differences in points of view of the sample individuas in terms of estimating the size of obsticles according to the number of researches conducted at the factory

To find the differences in the size of obsticles according to the variable of occupation, the single variance test was used and the value of calculated F was (3.589), which is significant at the level (0.05) and so the the hypothesis of naught is acceptable, which means that there are significant differences between the size of obsticles according to the variable of number of researches conducted at the factory. The reason behind that mayy be due to the more researches conducted by the researchers make them more experienced and more aware about the obsticles against the manufacturing of food products.

### 4. Conclusions

There are obsticles that prevent the factory from being changed into a distinguished production unit and the major obsticles that prevent the factory from being developed are tightly related to the financial aspect as funding in not sufficient to develop and making all the production lines operational. The role of the media in the advertisement for the products of the factory of food products and dairy is very limited and the factory of the College of Agriculture and Forestry at Mosul University is characterized to be an academic institution rather than a production unit. The points of view of the individuals of the sample are close to each other according to the variables of (sex, age, occupation and the number of researches conducted). The higher the number of researchers conducted, the more the awareness of the obsticles is for the employees at the department of Food Sciences, College of Agriculture and Forestry/ Mosul University.

#### Recommendation

1- Raisng the production capacity of the factory by motivating the teaching staff members to conduct researches that are related to developing the factory and consequently ensuring the

successful introduction of machines and technologies that are convenient with the factory activities and its production capacity

2- Highlighting the achievements of the factory and making efforts concerning the advertisement for its products through the media as it plays a great role in this respect.

3- Putting forward a certain mechanism that ensure a fruitful cooperation between the departments of College of Agriculture and Forestry and between the top management to related the products of the college with the factory of dairy and foodstuff as this will decrease the work and costs in addition to promoting the safety and quality of the products.

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## اراء منتسبي قسم علوم الاغذية بمعوقات تصنيع الاغذية في معمل الالبان والصناعات الغذائية لكلية الزراعة الغابات / جامعة الموصل

### امنة زهير يونس و ليلى از هر احمد و شيماء جواد محمود

### الخلاصة

يهدف البحث الى التعرف على حجم معوقات تصنيع الأغذية في معمل كلية الزراعة/ جامعة الموصل من وجهة نظر المبحوثين ثم ايجاد الفروق في حجم معوقات تصنيع الاغذية في معمل كلية الزراعة/ جامعة الموصل وفقا المتغيرات الاتية ( الجنس، العمر، المهنة، عدد البحوث العلمية المنجزة في المعمل ) ، شملت عينة البحث جميع أفراد مجتمع البحث والمتمثل بتدريسي وطلبة الدراسات العليا والأولوية لقسم علوم الأغذية ، وقد اظهرت النتائج ان مستوى حجم المعوقات بشكل عام هو متوسط يميل إلى الارتفاع وان مجال المعوقات المالية احتل المرتبة الأولى ومجال المعوقات الفنية جاء في المرتبة الأخيرة، كما اظهرت النتائج عدم وجود فروق معنوية في حجم معوقات تصنيع الاغذية وفقا للمتغيرات الاتية ( الجنس، العمر، المهنة) في حين اظهرت النتائج وجود فروق معنوية في حجم معوقات تصنيع الاغذية وفقا لمتغير عدد البحوث العلمية المنجزة في المعمل. وقدم الباحثين مجموعة م التوصيات و هي رفع الطاقة الإنتاجية المعمل من خلال حث التدريسيين على إجراء بحوث متعلقة بتطوير المعمل وبالتالي ضمان الإدخال الناجح للألات والتقنيات التي تتناسب مع أنشطة المعمل وقدرته وحجمه ووضع آلية عمل وبالتالي ضمان الإدخال الناجح للألات والتقنيات التي تتناسب مع أنشطة المعمل وقدرته وحجمه ووضع آلية معل التوصيات و هي رفع الطاقة الإنتاجية للمعمل من خلال حث التدريسيين على إجراء بحوث متعلقة بتطوير المعمل وبالتالي ضمان الإدخال الناجح للألات والتقنيات التي تتناسب مع أنشطة المعمل وقدرته وحجمه ووضع آلية عمل ولمعان التعاون المثمر بين أقسام كلية الزراعة والغابات وبينهم وبين الإدارة العليا لربط منتجات الكلية المختلفة مع معمل الألبان والصناعات الغذائية / جامعة الموصل لتقليل الوقت والجهد والتكاليف بالإضافة إلى ضمان سلامة وجودة المنتج.

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