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FEED INDUSTRY IN PALESTINE

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SUMMARY

There are sixteen feed mills in Palestine with a total capacity of about 25000 tons per month, as well as three others under construction with a total capacity of 5500 tons monthly.

However, despite the expansion in feed milling, Israelifeed-mills still dominate the local market.

This study aimed to examine the reasons for this, and the potential of the local feed industry in the context of open regional trade.

Palestinian feed mills vary considerably in their production capacity and in the type of machinery used. In many cases, however, it is observed that feed mills purchased used machinery procured from the Israeli factories. This may have important consequences for the productivity of these mills and their cost structure as well as the quality of manufactured feed. Owners of local feed mills rationalize this by pointing to their very limited financial resources, and the small size of the domestic markets.

Another important point in this context is that local feed mills import all their raw materials from foreign sources, but their storage capacity is noticeably limited (around 9000 tons), again on account of their weak financial base. This has added to their production cost and severely under minded competitiveness vis-a-vis Israeli manufacturers.

The aggregate demand for various types of livestock feed as of early 1999 is estimated at 25000 tons per month (17000 tones for the West Bank and 8000 tons for the Gaza Strip). In addition, the consumption of barley is estimated at about 8000 tons per month.

Local feed mills currently produce about 11000 tons per month, which accounts for only 25% of poultry feed and 55% of other livestock feed.

This study examined the reasons for the low share of local feed mills, and came up with the following factors.

1. Several factories produce only mash feed, whereas the demand is stronger for feed in pellets and crumbled forms. Much factories are unable to buy the machinery needed for this purpose.
2. There is a wide spread belief that local feed is of fluctuating and generally inferior quality, especially in comparison with Israeli feed.
3. Credit facilities provided by the Israeli firms are much more relaxed than those available in local factories.

The study demonstrated the need to introduce major improvements in the local feed industry in an effort to improve its competitive standing.

Keywords: Beef, Palestine, feed, milk

INTRODUCTION

Until 1967, Palestinian farmers procured their feed for the rapidly growing poultry and livestock sector from the Jordanian factories. After the onset of occupation, they were forced to rely exclusively on Israeli sources, which prompted them to initiate their own feed industry (I).

The first feed mill was established in 1969, by the end of 1997 there were 16 feed mills with a total monthly capacity of 25000 tons. However, it is commonly noted that despite the expansion of this industry, Israeli manufacturers still dominate the local market (2).

This study intended to examine the reasons for this, and the potential of the local feed industry in the context of open regional trade.

The Objectives of this study are to

1. Study of the local feed market with estimation of demand and supply.
2. Study the share of local feed mills in the total feed requirement in Palestinian territories.
3. Examine the problems and conditions behind the low demand on feeds produced by local feed mills.
4. Evaluate the competition statues with Israeli and Jordanian products.
5. Survey the experts and their ideas in regard to the development of feed industry sector.

METHODOLOGY

The information used in this study was obtained through a questionnaire-for local feed mills. Several interviews with experts and animal raisers were made. Officials from ministry of Agriculture interviewed.

Statistics of Palestinian livestock

The animal production sector is one of the most important sectors of Palestinian agriculture. Its importance comes from the increasing investments in the livestock sector. The share of animal production sector of the total agricultural value had increased from 36% to 49% in West Bank for the years of seventies and nineties, respectively. Similar trend occurred in the Gaza Strip, as livestock sector share increased from 20% to 30% at the same period's (3).

Recent data showed that the number of layers about 1.8 millions, while the number of broilers was about 36 millions as an average in the last three years (Tables 1 A, IB).

Table 1A. Poultry population in Palestine (1000 birds)

	1994	1995	1996	1997	1998	1005
Locally hatched DOC	3.0	4.2	2.7	13.6	15.0	60.0
Imported DOC	32.5	37.5	29.5	21.9	24.5	0.0
Total raised chicks	35.5	41.7	32.2	35.5	39.5	60.0

Census of poultry, for several years. Ministry of Agriculture.
The Israeli Board of Eggs and Poultry.

Table IB. Layers population in Palestine (million)

	1996	1998	20055
Layers	L6	L8	*32*

Statistical Bulletin, 1996. Ministry of Agriculture, Amman, Jordan.
Statistical Bulletin, 1996. Ministry of Agriculture, Jerusalem, Palestine.

The poultry sector is growing rapidly. During the last two decades the number of both layers and broilers has increased tremendously (Tabie2).

Table 2. The development of layers and broilers in Palestine

Year	Layers (1000)	Broilers (1000)
1970	70	3400
1973	118	4330
1975	120	3550
1978	179	2490
1981	170	3500
1984	89	4400
1987	217	16450
1990	418	16900
1993	620	18800
1995	1812	31790

El-Shanty H., 1999 A study about the situation of the poultry production sectors in Gaza strip - Palestine.

However, numbers are still far below those of Israel and Jordan (4,5).
Table (3) showed the numbers of cattle, sheep and goats. About 386, 15.8,246 thousands of sheep, cattle and goats are available (6). Again these numbers are far below the numbers in both Israel and Jordan.

Feed consumption in Palestine

The estimated monthly feed consumed by local livestock is 24.4 thousand tons (Table 4). About 17000 tons are consumed in West Bank and the rest in Gaza Strip. These estimates are based on the total animals raised in 1998, and the daily consumption by each animal (a layer bird I Kg, a broiler O.OSKg, a sheep and goat IKg, a cow 8Kg and a calf 4Kg).

Table 3. Population of cattle, sheep and goats in Palestine (1000)

District	Local cattle breed (Baladi)	Friesian	Local sheep breed (Awassi)	Hybird sheep (Assaf)	Goats
Ramalla	00.146	00.641	40.976	00.497	84.662
Bethlehem	00.000	00.224	24.090	00.702	27.921
Hebron	0.197	01.177	122.250	00.785	68.293
Tutkarm	00.681	01.255	17.986	04.233	11.293
Nablus	01.840	01.858	75.185	04.800	30.723
Jenin	01.517	01.198	49.015	07.950	33.098
Jericho	00.000	00.342	15.752	00.285	05.450
Gaza	00.500	04.300	20.000	02.000	22.000
Total	04.863	10.995	365.254	21.252	245.988

Abo Omar, J.M., 1985. Feed industry in the West Bank. Rural research Center. An. Najah N. University, Nablus, Palestine.
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Table 4. Monthly feed consumption of livestock in Palestine (tons)

District	*Total*	*Layers*	*Broilers*	*Cattle*	*Sheep and goats*
Ramaila	2973	1000	1588	365	20
Bethlehem	858	650	100	100	8
Hebron	4120	920	2800	200	200
Tulkarm	2844	744	1670	230	200
Nablus	1374	204	450	447	273
Jenin	4866	617	2233	1133	883
Jericho	279	13	165	85	16
Gaza	7291	2625	2191	1152	1320
Total	24605	6773	11197	3712	2920
Per year	295260	81276	134364	44544	35040
%	100	27.5	45.5	15.1	11.9

Field survey.

The poultry feed (layers and broilers) make about 73% of total feed consumption. This due to the rapid expansion in the poultry sectors.

Beside the amount of manufacture feed consumed, farmers under certain conditions use raw barley as major feed for their animals. The amount of barley consumed varies from season to depending on the pastures and the barley prices in the market (4). The estimated amount of barley consumed is about 7600 tons per month (Table 5).

Table 5. The monthly barley consumption by livestock in Palestine (Tons)

District	*Amount*
Ramal la and Bethlehem	1700
Hebron	1938
Tulkarm	1100
Nablus	1050
Jenin	562
Jericho	1250
Total	7500

Statistical Bulletin, 1996. Ministry of Agriculture, Jerusalem, Palestine.

Feed industry in Palestine

The total number of feed mills in Palestine is 16; they are distributed at all Palestinian districts. Nablus and Ramalla districts contain 10 of these feed mills (Table 6). There arc two in Jenin and Hebron districts and recently new feed mill has started in Gaza and three more feed mills arc under construction, one in Gaza and two in West Bank.

The production capacity of local *i'cc<}* mills is about 25 thousands tons per month. However the actual production is about I 1.3 thousand tons per month (about 44% of total capacity).

The study showed that 5 of local feed mills produce about 76% of total production. This means that most of the local feed mills are small firms (grinding and mixing).

The total amount of feed production by the local factories is about 11000 tons per month. This amount covers only 45% of total feed requirements and 55% of total large livestock feeds.

The study showed that the season of the low share of feed mills in total

Requirements is /"'

1. Only four of locals feed mills produce the pelleted feed. However, demands on this type of feed are increasing, especially for poultry farms. Local feed mills can not satisfy the needs off armers, therefore, local farmers shift to buy the Israeli to establish new production line for peleted feed due to lack of money.

Table 6. Feed factories in Palestine

District		*Production Actual capacity (tons/month)*	*production (tons/month)*	*Storage capacity (ton)*	*No. of workers*
Ramalla:	1	3000	1200	1500	15
	2	1800	1000	1500	09
	3	0240	0100	0050	05
	4	3000	0700	1500	05
	5	1000	0800	1000	05
Nablus:	I	3000	1000	0700	20
	2	0600	0300	0300	02
	3	1200	0300	0100	06
	4	1350	0600	0400	06
	5	0600	0508	0150	05
Jenin	1	1800	1200	0300	05
	2	1800	1500	1500	07
Tulkarm	1	1200	0600	0150	07
Hebron:	1	3000	1500	0150	06
	2	1500	0300	1100	03
Gaza	1	0400	0300	1100	05
Total	16	24540	11300	9280	105

Field survey.

1. The belief of most of the local farmers about the quality of local feed. As most of them believe that the quality of the Israeli product is much better than local feed. However, recent research results disagree with this idea (7),
2. Local feed mills can not offer the financial advantages obtained by farmers when they buy the Israeli feed. Dealers of the Israeli feed give credit facilities to local farmers.

Quality of feed in local market

There is no kind of quality control measures in Palestine. However, limited self-monitoring of feed quality is performed by some of the local feed mills. Local universities have feed analyses laboratories, which can provide this paid services when approached by farmers or feed mills.

Always there are claims by farmers regarding the performance and productivity of their animals. This causes them to change the source of feed they use. The claims come from farmers using both local and Israeli feeds. This situation needs investigations to survey the real quality of feeds available in market through a detailed feed analysis.

Machinery in local feed mills

Most of machines in local feed mills are of European origin. Some of them are important directly from Europe while the major parts are imported from Israel. Storage tanks and other less technical facilities are constructed locally. All feed mills have grinders and mixers with different capacities depending on the size of feed mills.

Only four mills have a line to produce pelleted feed. This can be explained by the low investments of most of feed mill owners.

Labor in local feed mills

The total number of workers in feed mills is 105. Most of them are unskilled workers. Few laborers have experience in feed and feeding and feed milling.

Raw materials in local feed industry

Several types of raw ingredients are used in local feed industry. These materials are similar to those used in neighboring countries (Israel, Jordan and Egypt). The source of raw materials is the Israeli market. However, local feed mills owners have the opportunity of import raw materials directly from overseas, or through Israeli dealers.

The major raw materials used in feed manufacturing are corn, sorghum, soybean meal (SBM), wheat, barley, wheat bran, dicalcium phosphate (DCP), oil, and some feed additives like amino acids, vitamins and minerals.

Among these raw materials, corn is the major ingredient used. It makes about 60-65% of total feed mixtures in local feed industry. Soybean meal comes in the second place; it makes about 25-28% of feed mixtures it is used as a major source of protein in feed. Since local laws prohibit using animal protein in feed mill products.

The estimated amount of raw corn used by local feed mills is about 7000 tons per month and about 2800 tons of SBM (Table 7). Other ingredients are used in variable amounts depending on animal species, precise and availability in the market.

Table 7. The amounts of raw materials used in local feed industry (ton/month)

Ingredient	Total	In poultry feed	In large livestock feed
Corn	6780	4881.6	1898.4
SBM	2825	2062.2	762.8
Wheat	600	498	102
Sorghum	700	581	119
DCP	113	80	33
Salt	110	78	32
Oil	115	103	12
Amino acids	2!	21	0
Urea	98	0	98

Field survey.

Problems related to raw materials

This study showed that there are several problems facing local feed mills that are related to raw materials:

1. The source of raw materials: the major source of raw materials is the Israeli market. Under certain conditions especially the closure of border (due to security measures) it is impossible to get the needed amounts of the raw ingredients. This problem cause some factories to stop production due to the lack of needed raw materials as storage capacities in most of feed mills are limited.
2. Price of raw materials: the sudden increase in raw material prices increases production costs. The study showed that during the last two years, prices increased by 40%. Difficulties to import raw materials from international market due to political and logistical consideration worsen the problem.
3. Lack of one or more essential ingredients: during certain periods: this creates an important problem for feed mills as they are unable to deal with this situation by changing the feed milling formulas. Lack of experience of feed mill owners makes it difficult to use different alternative feed ingredients.

The storage capacity of **local feed mills**

The study showed that the maximum storage capacity of local feed mills is about 9000 tons (table.6). This explains the danger facing local feed mills at conditions of closure of border for long periods by the Israeli authorities.

The low storage capacity of most of the factories makes it difficult for the factories to buy raw materials in bulk as can not provide the storage places. Selling of raw ingredients by feed mills to farmers worsen the situation.

Competitions status of the local manufactured feed

As mentioned earlier by this study, local fees mills rely totally on imported raw materials. Similar conditions are in Israel and Jordan.

Therefor, prices of raw materials are the same in these three countries.

Similarly, feeds production among these feeds is based on other factors.

Competition with Jordan

The study showed that competition with Jordan feeds *is in* favor of Palestinian *sidd* The long distance between *the* main Jordanian port (Aqaba) and areas of feed industry around Amman can explain this. The transportation costs for this distance is about 12$. However, the transport cost per ton in Palestine (from the Haifa Israeli port to Nablus area) is only 6$ (7). The costs of labor, fuel, electricity and water *is* higher in Palestine compared to Jordan, but these costs contribution to total *feed* costs is little.

The study suggests that feed from Jordan will not compete the local feed especially when assure the quality of the local product.

The price per ton is similar in both Jordan and Palestine, especially under the new Jordanian legislation to cut the subsidies for the raw materials used in feed manufacturing.

Competition with Israel

The main competition comes form the Israeli products. The Israeli *feed* is considered of good and constant quality. It is available in local market in both mash and pelleted from. Most of the Israeli feed mills has dealers in all districts of Palestine. The Israeli dealers provide large credit facilities to local Palestinian farmers in one hand and supply them with both layer and broiler chicks.

The study showed that the Israeli feed would dominate the market at least for the next five years.

Recommendations

It is shown by the study that the development of local feed industry is dependent on competition power of local products. It is the responsibility of the private sector to achieve this task.

Here are some recommendations for development of Palestinian feed industry:

1. Providing credit facilities to feed mills in order to provide better services to farmers.
2. Feed mills adopt well-planned strategies for developing their feed mills in should regard to machinery and storage capacities.
3. Feed mills should buy raw ingredients in bulk, also farmers to buy the unbagged feed in order to decrease expenses significantly.
4. Legislation by the Ministry of Agriculture for monitoring the quality of feed.
5. Improvement of labor quality at feed mills, through workshops, seminars, visits to modern factories.
6. It is important to reduce the numbers of available feed mills.
7. Encourage feed mills owners to form a union. This will give more power to the feed industry to stand all types of cricies.

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