

A Study on The Production and Consumption of Milk and Some Egyptian Dairy Products

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ABSTRACT

Dairy contributes some 31% of total agriculture production in Egypt and supplies 34% of human consumption of proteins. Egyptian production covers about two thirds of total consumption, which is based mainly on cheese. Most of cheese production is manufactured by small unlicensed factories (about 5000 factories in rural areas) from unpasteurized milk using primitive methods, despite the new standard which prohibits the production of cheese from unpasteurized milk. The aim of this investigation was to indicate the development of dairy production and consumption during ten years from 1995 to 2005 in Egypt. The data showed that the total milk production increased from 2.732 million tones in 1995 to 5.255 million tones in 2003, then decreased by 21.92% in year 2005 as compared with 2003 level. Mean per capita milk consumption was 47.2 kg in 1995, increased to 75.8 kg in 2003. White cheese production was estimated at 289000 tonnes in 1999, increased to 351000 tonnes in 2003. White cheese production, both commercial and home made, makes up about 75% of the cheese produced and consumed in Egypt. Quantity of produced hard cheese was 10000 tonnes in 1999 reduced to 2000 tonnes in 2003. Quantities of heat treated milk, zabady and ice-cream produced in 2001 were estimated at 58086, 70463 and 44813 tonnes, respectively.

Key Words: Egyptian dairy products, Dairy production, Dairy consumption.

INTRODUCTION

Milk is a nutritious food for human which plays an important role in daily diet all over the world. It is also a good medium for the growth of a wide range of microorganisms especially the pathogens. The presence of such organisms in milk represents a major public health concern. Dairy production is one of the most important agricultural manufacturing. It offers many essential products such as pasteurized, sterilized, concentrated, condensed and dried milks, babies milk, fermented milk, different types of cheese, ice cream and fat products, and many other products which use milk as an essential material e.g. baking stuff, sweets, pizza, chocolate and

beverage. These products are considered approximately quarter of human food and are the main sources of animal protein in the Egyptian diet. All countries pay attention to develop these industries. The aim of this investigation is to study the production and consumption of milk and its products in Egypt during ten years (1995-2005).

MATERIALS AND METHODS

The above aim was achieved by collecting data from different sources, FAO, Central Agency for Public Mobilization and Statistics, Ministry of Agriculture-Economic Affairs Sector- Zoological Abundance Statistics Administration and other Arabic references.

RESULTS AND DISCUSSION

Milk production in Egypt

Table 1 and Figure 1 show the production quantity of whole milk in Egypt. The data revealed that total Egyptian fluid milk production in 1995 was estimated at 2.732 million tones and gradually increased to reach 5.255 million tonnes in 2003 then decreased by 14.36% and 21.92%, in years 2004 and 2005, respectively over the 2003 level. Despite a slight expansion in large dairy farms, Egyptian fluid milk production continues to fall short of demand. Stagnation of production is mainly due to the lack of dairy cattle supply which is a direct result of diseases (unexotic bovine leukosis foot and mouth disease and others). This shortage of milk supply has led to an increase in milk prices (Abdi and Ibrahim 2000; Hayes and Boor 2001; Boor and Murphy 2002).

Table 2 represents the consumption of Egyptian total milk production in 2000/2001. The data revealed that about 55% of total milk production is consumed at the farm level (20% for calves weaning 15% for manufacturing at the farm for retail and 15% for direct consumption at the farm). The rest of total milk production is distributed on private and public sectors (40% and 5%) respectively.

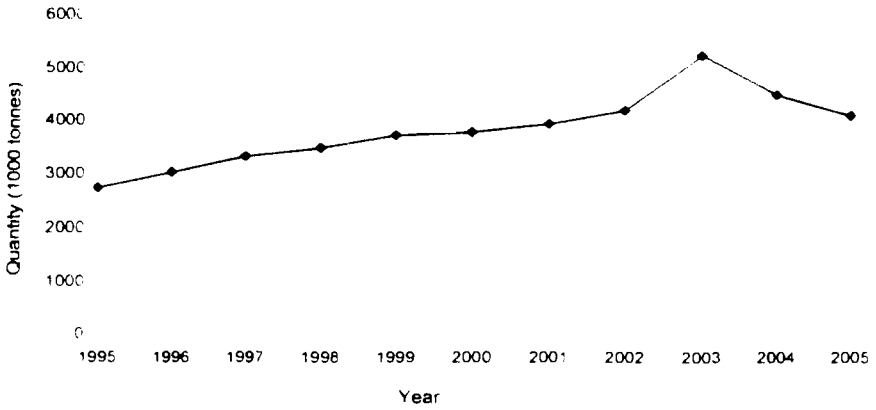


Figure Production quantity (1000 tonnes) of whole fresh milk in Egypt.

Table 3 and Figure 2 show estimates of some livestock which clearly indicated the increases of livestock population in years 1995-2004.

Table (1) Production quantity (1000 tonnes) of whole fresh milk in Egypt.

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Quantity	2 732 04	3 026 03	3 319 73	3 48 26	3 723 08	3 776 71	3 938 67	4 192 45	5 255 33	4 500 75	4 103 10

Source: FAO statistics Division (2007)

Table (2) Consumption of Egyptian total milk production in 2000/2001.

Utilization	Quantity (1000 tonnes)
Total milk production	3 776 71
- Consumption in production regions (55%)	2077.19
a. 20% for weaning	755.34
b. 15% consumed by producers	566.51
c. 20% in rural processing	755.34
- Available for handling and manufacturing (45%)	1699.52
a. 40% in private sector plants	1510.68
b. 5% in public sector plants	188.84

المصدر : غرفة الصناعات الغذائية باتحاد الصناعات المصرية عام ٢٠٠١ - ٢٠٠٠ .

Table (3) Estimation of some livestock population in Egypt through the period 1995-2004 (1000 head).

Year Type	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cows	2996	3041	3118	3217	3418	3530	3801	4082	4227	4369
Buffaloes	3018	3057	3096	3149	3330	3379	3533	3717	3777	3845
Sheeps	4220	4240	4260	4352	4391	4469	4671	5105	4939	543
Goats	3131	3159	3187	3261	3308	3424	3497	3582	3811	3879
Camels	131	133	136	142	134	141	134	127	136	129

Source: Egyptian Ministry of Agriculture-Economic Affairs Sector- Zoological Abundance Statistics Administration

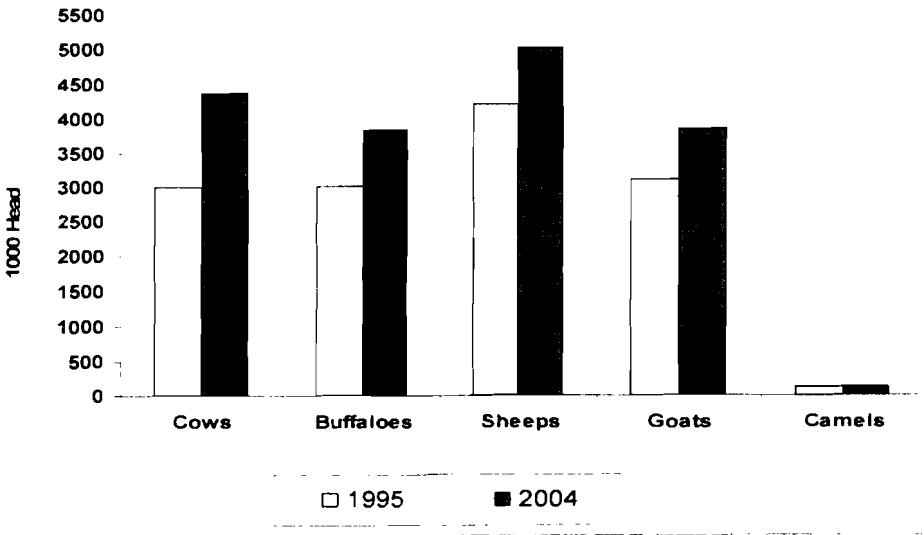


Figure 2. Estimates of some livestock in year 1995-2004.

Figure 3 shows milk production of major producing countries in the world in year 2003 (Food outlook, 2005). The highest milk production level in Africa in year 2003 was produced in Egypt.

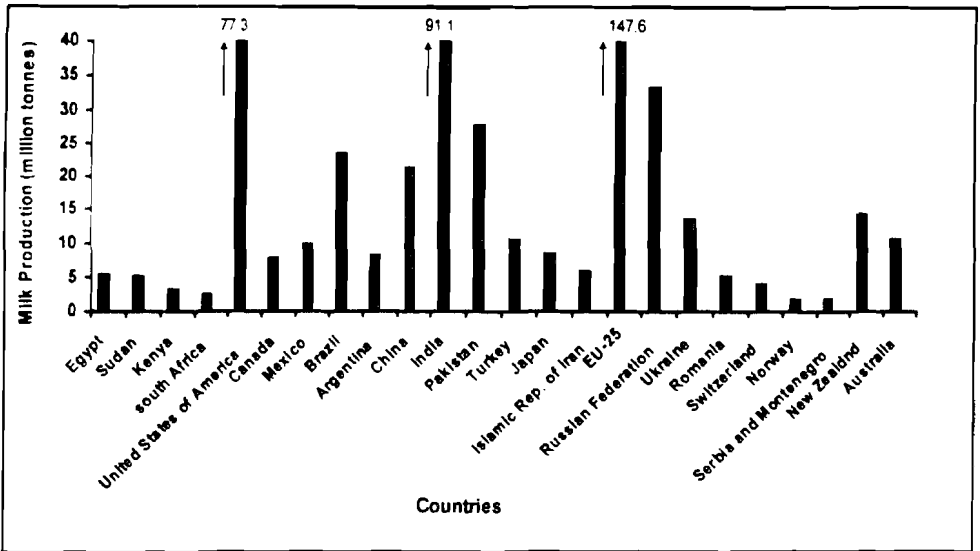


Fig. 3. Milk production of major producing countries (million tonnes), FAO, 2003

Milk import and export

Considerable amounts of non fat dry milk were imported every year to cover the shortage of milk production (Table 4 and Figure 4) which is mainly used in commercial white cheese production. On the other hand, a little amount of whole fresh milk was exported in years 1995-2005. The amount of exported milk was increased dramatically in year 2005 as compared with 2000 level (Table 5 and Figure 5).

Milk consumption in Egypt

Table 6 indicates the available quantity of milk for consumption and per capita consumption of milk in years 1995-2005. The results showed that quantity of milk available for consumption in year 1995 was 2.732 million tones increased by 92.34% in 2003 to reach 5.255 million tones. On the other hand, mean per capita milk consumption was estimated by 47.2 kg in 1995 increased to 75.8 kg in 2003. This levels still very low as compared with European countries.

Table (4) Import quantity (1000 tonnes) of non-fat dry milk in Egypt

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Quantity	677.87	627.71	426.20	537.99	729.77	662.78	615.54	666.91	684.20	503.15	1.023.91

Source: FAO Statistics Division (2007).

Table (5) Export quantity (1000 tonnes) of whole fresh milk from Egypt

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Quantity	11.71	8.74	18.45	9.65	36.13	16.24	16.57	29.34	59.41	57.57	124.63

Source: FAO Statistics Division (2007).

Table (7) Quantity (1000 tonnes) of cheese production, consumption, import and export in Egypt

Year	White cheese				Ras cheese			
	Production	Consumption	Import	Export	Production	Consumption	Import	Export
1999	289	288	1	2	10	10	--	--
2000	287	187	1	1	5	5	--	--
2001	312	312	1	1	3	3	--	--
2002	338	337	<500	1	2	2	--	--
2003	351	314	<500	1	2	2	--	--

المصدر : الجهاز المركزي للتعبئة و الإحصاء .

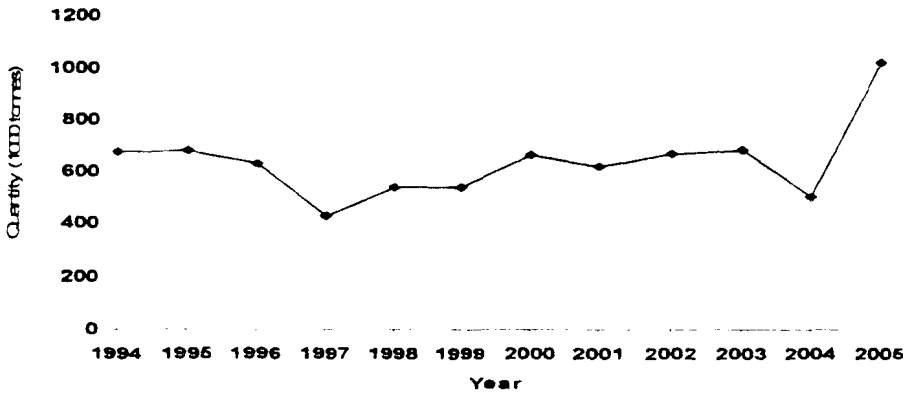


Fig.4. Import quantity (1000 tonnes) of non-fat dry milk in Egypt.

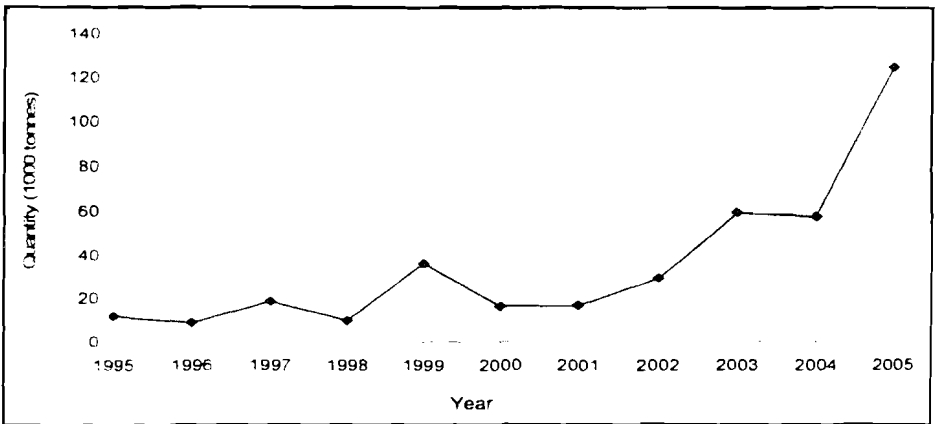


Fig. 5. Export quantity (1000 tonnes) of while fresh milk from Egypt.

Production, consumption, import and export of some dairy products in Egypt

1. Cheese

The most important type of cheese produced in Egypt is white cheese. There are two types of this cheese produced in Egypt depending on the raw materials used in the production. The first type is an inexpensive white cheese which is produced from imported non-fat dry milk and vegetable oil (palm oil). The second type is the production of more expensive white cheese which is produced from fresh milk.

Table (6) Milk consumption quantity in Egypt.

Year	Quantity of milk available for consumption (million tones)	Per capita milk consumption (kg)
1995	2.732	47.2
1996	3.026	47.4
1997	3.319	56.0
1998	3.481	57.5
1999	3.723	60.2
2000	3.776	60.7
2001	3.938	61.2
2002	4.192	63.2
2003	5.255	75.8
2004	4.500	--
2005	4.103	--

-- : not available

Source: Central Agency for Public Mobilization and Statistics, The statistical year book 2006

Table 7 shows the quantity of white cheese production, consumption, import and export in Egypt in years 1999-2003. The results revealed that white cheese production in 2002 and 2003 increased by 7.951 and 16.951%, respectively as compared with the 1999 level (289000 tonnes). The data also revealed that the quantities of import and export white cheese were 1000 and 2000 tonnes in year 1999, which decreased by about 50% in year 2003.

Ras cheese is the most popular hard cheese produced in Egypt. Table 7 indicated the quantity of production, consumption import and export of hard cheese in years 1999-2003. The data revealed that hard cheese production was 10000 tonnes in 1999, dropped to 2000 tonnes in 2003. The reduction of hard cheese production may be due to the high milk price and consequently hard cheese price (production of hard cheese relies more heavily on fresh milk). This figure represents the cheese produced by public sector. Abd-El Salam, M.H., estimated the yearly average of whole

Ras cheese production in Egypt by 20000 tonnes (unpublished data). In the other report, the mean of the production of white cheese and Ras cheese were 73000 and 10000 tonnes, respectively, in years 2000-2003 (Yehia El-samragy, 2005). However, the contribution of the private sector to the food industries in Egypt is not clear over the years. There are no detailed data of food industry activities in the private sector.

2. Heat treated milk, Zabady and ice-cream

Table 8 indicates the quantity of produced heat treated milk, zabady and ice-cream, in years 1999-2001 in Egypt according to Central Agency for Public Mobilization and Statistics (2003). The results show that heat treated milk and zabady production in 2001 increased by 164.05% and 467.01%, respectively, over the 1999 level. The opposite trend was noted regarding ice-cream production. The quantity of ice-cream produced in 1999 was estimated at 48614 tonnes, reduced by 44.29% and 7.81% in 2000 and 2001, respectively over the 1999 level.

Table (8) Production quantity of heat treated milk, Zabady and ice-cream in Egypt.

Year	Production quantity (tonne)		
	Heat treated milk	Zabady	Ice-cream
1999	22000	12427	48614
2000	52658	16149	27078
2001	58086	70463	44813

Source: Central Agency for Public Mobilization and Statistics. The statistical year book 2003

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الملخص العربي

دراسة على إنتاج وإستهلاك اللبن وبعض منتجات الألبان المصرية

إيمان حسين السيد عياد^١ ، سعيد محسن درويش^١ ، السيد هاشم محمد حمد^١ ، شيماء محمد إسماعيل أبو الريش^٢

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تساهم منتجات الألبان في مصر بحوالي ٣١% من جملة الإنتاج الزراعي ، وتمتد المستهلك المصري بـ ٣٤% من احتياجاته من البروتين الحيواني . ويغطي إنتاج الألبان في مصر حوالي ثلثي مجمل الاستهلاك والتي تعتمد أساساً على الجبن الأبيض . معظم إنتاج الجبن يتم في مصانع صغيرة غير مرخصة (٥٠٠٠ مصنع أو معمل في المناطق الريفية) من لبن غير مبستر باستخدام طرق بدائية بالرغم من اشتراطات المواصفات القياسية المصرية الجديدة بضرورة بسترة اللبن الخام المستخدم في صناعة الجبن . ويهدف هذا البحث إلى معرفة مدى التطور الحادث في إنتاج وإستهلاك المنتجات اللبنية في مصر خلال عشر سنوات (١٩٩٥-٢٠٠٥) لبعض منتجات الألبان في مصر . وأوضحت النتائج زيادة إنتاج اللبن الكلي من ٢,٧٣٢ مليون طن في عام ١٩٩٥ إلى ٥,٢٥٥ مليون طن في عام ٢٠٠٣ ثم انخفض بنسبة ٢١,٩٢% عام ٢٠٠٥ مقارنة بعام ١٩٥٥ . متوسط نصيب الفرد من اللبن في مصر هو ٤٧,٢ كلو جرام في عام ١٩٩٥ - ارتفع إلى ٧٥,٨ كجم في عام ٢٠٠٣ . قدر إنتاج الجبن الأبيض بحوالي ٢٨٩ ألف طن في عام ١٩٩٩ - ازداد إلى ٣٥١ ألف طن في عام ٢٠٠٣ . يعتبر الجبن الأبيض من أكثر أنواع الجبن إنتاجاً في مصر حيث تشكل حوالي ٧٥% من جملة الإنتاج الكلي للجبن سواء المصنعة على النطاق التجاري أو المنزلي . انخفض إنتاج الجبن الجاف من عشرة آلاف طن في مصر عام ١٩٩٩ إلى ألفي طن في عام ٢٠٠٣ ويمثل هذا الرقم إنتاج الجبن بالقطاع العام حيث مساهمة القطاع الخاص ليست واضحة على مر السنين . والمعدل السنوي لإنتاج الجبن الراس في مصر عموماً يقدر بـ ٢٠٠٠٠ طن . وقدر نتاج الألبان المعاملة حرارياً والزبادي والأيس كريم عام ٢٠٠١ بـ ٥٨,٠٨٦ ، ٧٠,٤٦٣ ، ٤٤,٨١٣ ألف طن على التوالي .