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DISSEMINATION CONSTRAINS OF TECHNICAL PACKAGES IN DAIRY FARMS IN UPPER EGYPT

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ABSTRACT

Hundred of dairy farms under mixed farming system at Qena governorate in Upper Egypt were randomly selected to undertake a dairy technical package. Information was obtained through personal interviews. The study was conducted in April 2007 with the objective to analyses factors affecting the adoption of dairy production technologies. A questionnaire was designed and pre tested to collect herd data and all dissemination constraints faced by the dairy technical packages.

There are three groups of packages in the present study i.e. a) feeding packages groups (green forage conservation - crops residuals treated with urea animal feed supplements with molasses or minerals), b) milk marketing groups (milk hygiene-cooling milk – home processing) and c) herd management groups (artificial insemination – mastitis detection – hoof care – suckling systems).

Total herd size was calculated as Animal Unit (AU) i.e. 30.10, 17.90 and 15.70 AU in the EL-Waqeff, Qefft and Qena Districts, respectively. The most constraint faced by the adoption of dairy technologies was that 93.55%, 77.78% and 73.81% of farmers in the studied areas were not visited by the extension people. In addition, the effect of the adoption of dairy technologies on herd size was that 70.79%, 92.59% and 64.29% of dairy farms in the studied areas who owned large herd size adopted at least one of the technical packages. The feeding technology of ration formulation became the most adopted technology where 100%, 96.12% and 90.24% of farmers in the studied areas applied the formulation. Green forage conservation was not found for two reasons i.e. there were neither choppers nor leftover of green forages. Feed additives were found in 45.11%, 7.45% and 24.25% of the farmers adopting molasses technologies but some farmers said that molasses were not available and others said it was expensive. Chemical treatment for roughages was found only in the Qefft district of which 11% of farms used the urea treatment.

The milk market group concerned with milk hygiene where farmers used safe and healthy detergents (sodium tri-phosphate) for cleaning their milk cans and brushes and cloth. However, it was found that 96.77%, 74.07% and 78.57% of farmers in the three-respective studied areas did not care about milk hygiene because they used all milk for home consumption as there were no markets available for their milk.

The artificial insemination technique was conducted by 25.93% and 21.43% of farmers in Qeft and Qena Districts, respectively. In contrast, farmers in El-Waqeff District did not apply A.I. technique .Statistical descriptive and quantitative analyses were used in this study.

Form the present study, it could be concluded that extension people need continuous training programs for dairy production technologies. Also Transportation is very important to facilitate field days and seminars for farmers. Privet sector should contribute to make chopper machines available for cocerving green gorages.

Keywords: Technical packages, A.I., milk hygiene, mastitis, molasses, urea, suckling

INTRODUCTION

Most Egyptian farmers practice mixed farming system (crop/livestock). Animal feeding quality is the main constraint faced by farmers. Dairy production in this context is to be a subsystem of farming system, in which dairy and crops productions are associated and mutually beneficial. The individual landholding allows the opportunities to improve feed production in the form of forage cultivation, planting of fodder crops and utilization of crop residues. Smallholder dairy production can be improved without affecting the primary function of animals and could be attractive in the mixed farming system as it offers the opportunity to diversify operations, spreads risk and provides regular income (Gryseels, 1988).

In the areas where new technologies have been introduced, it is often important to determine the extent to which technologies were adopted. Introduction of many new technologies has been met with only partial success, as measured by observed rates of adoption (Feder et. al. 1985). Constraints to rapid adoption of innovation are various. They include factors such as lack of credit, limited access to information, aversion to risk, inadequate farm size, inadequate incentives associated with farm tenure arrangement, insufficient human capital, absence of equipment to relieve labor shortages, chaotic supply of complementary inputs and/or inappropriate transportation infrastructure (Feder et.al. 1985).

In other words, adoption of agricultural technologies in developing countries is influenced by a wide range of economic, social, physical and technical aspects of farming and farms attitudes towards risks (Kebede et al.,1990). It is, therefore, necessary to understand the role of these factors to develop appropriate technologies in Upper Egypt.

The development strategies in animal science usually emphasize on actions that support the development and implementation of innovation packages (Khalil and Sammour 2006). The assessment of a new technology on farm is a phase in between the identification of problems and potentials and the dissemination of this technology within the context of farming systems research and development (Amir and Knipscheer, 1989). The objective of this study was to analyses factors affecting the adoption of dairy production technologies in Upper Egypt.

MATERIALS AND METHODS

The study was conducted on 100 dairy farms in three districts at Qena Governorate which was selected because Qena was one of target areas in Upper Egypt to implement dairy development activities that carried out by Food Sector Development program (FSDP) from 1995 to 2000. Total of 100 farms were divided into 31, 27 and 42 for EL-Waqeff, Qefft and Qena districts, respectively. The studied farms were target farms during FSDP implementation.

A questionnaire format was designed to collect all dissemination constrains of technical packages (some feeding packages – milk marketing

channels – herd managements) in dairy farms. Questionnaires were designed and pre-tested for clarity on limited numbers of farmers who had good experience in livestock practices. Collected data consisted of herd size then converted in Animal Unit AU according (El-Sayes and El-Wardani 2004). Some general constrains such credit data whether farmers need credit or not and how much, role of extension agents, labor, farmer education and age and area holding and how far these constrains effecting technologies adoption.

Specific constrains per each technology was identified. Feeding group (did farmers hear about silage making, is chopper and plastic sheet available, urea, molasses and mineral blocks are available and cheap). Milk market data, farmers use safe detergents (sodium tri phosphate) in cleaning milk cans, collection points/centers and milk home processing data. Management constrains data, (using artificial insemination A.I., mastitis detection, hoof care and calf suckling system, how long calves are suckling their mother and methods of dry off).

The study was analyzed using the statistical descriptive and quantitative analysis which has been previously used in this study to calculate percent of factors effecting adoption of dairy animal technologies (Johnosn 1990).

RESULTS AND DISCUSSION

Table 1 shows herd composition as average of Animal Unit (AU) holding per household. Local cows were 11.02, 0.42 and 1.34; cross cows were 4.63, 7.26 and 3.85; and buffalo were 5.53, 0.48 and 2.26 AU of farms in the EL-Waqeff, Qefft and Qena districts, respectively. Young stocks were 6.81, 4.87 and 4.13 AU per farms in the EL-Waqeff, Qefft and Qena respectively. Sheep, Goats and other animals were 4.32, 3.04 and 2.22; 1.41, 0.47 and 0.36; 2.39, 1.35 and 1.55 AU in previous districts. Total Animal units in farms were 36.10, 17.90 and 15.70 in the EL-Waqeff, Qefft and Qena districts respectively. El-Sayes and El-Wardani (2004) reported that AU in five districts in Ismailia Governorate was varied and it ranged between 6.9 AU/farm in traditional district like Ismailia and 16.22 AU/farm for district nearby desert like Fayed, Ismailia governorate.

Due to the availability of reclaimed area in EL-Waqeff, farmers prefer local cows. Farmers in this area were rearing large numbers of local cows which represent 30.52% of total AU per farm probably because cows have a regular annual calving with less feed and care. In Qefft and Qena the crossbred cows are preferable which represent 40.57 and 24.50 % of total AU per farm. This might be due to two reasons i.e. artificial insemination is available long time ago so farms in the areas experienced high milk producer cows and good fattening animals as a results of A.I. In Qefft and Qena fattening traders can identify calves born from cows under A.I. technology and pay more money for it. Besides, the availability of green forage area and dairy concentrate help crossbred animals to achieve good performance of their genetic capacity.

Table. 1 Herd composition as average AU at El-waqeff, Qefft and Qena districts

	El-waqeff		Qefft		Qena	
Herd composition in AU	**Av.**	**%**	**Av.**	**%**	**Av.**	**%**
Local cows	11.02	30.52	0.42	2.33	1.34	8.54
Cross cows	4.63	12.84	7.26	40.57	3.85	24.50
Buffalo	5.53	15.31	0.48	2.70	2.26	14.40
Young stock	6.81	18.86	4.87	27.20	4.13	26.28
Sheep	4.32	11.95	3.04	17.01	2.22	14.13
Goat	1.41	3.91	0.47	2.64	0.36	2.28
Other animals	2.39	6.61	1.35	7.55	1.55	9.86
Total AU	36.10	100	17.90	100	15.70	100

Other animals are: donkey, horse, camel and maul

1- General constrains effecting dairy technology adoption

Table 2 shows general and common constrains that affect technical packages adoption in the EL-Waqeff, Qefft and Qena districts. The studied farmers who wanted to adopt new technologies but there had no fund available were 64.52%, 48.15% and 57.14%, respectively. In other words farmers will adopt dairy production technologies if funds are available.

The fund played an important role in the adoption of dairy production technologies and influenced farmers' investment and production decisions (Freeman et. al 1996). Significant and positive effects of credit in the adoption of crop production technologies have also been reported

(Nagassa et. al. 1997). The general lack of specialised credit for dairy development in the region is an indication of the little attention paid to this sector.

The effect of extension, measured in terms of whether farmers were visited or not, did not influence the adoption of dairy production technologies because extension efforts being undertaken were directed to improve crop production level. In the study, the effects of extension on most of the dairy production technologies were not efficient. Likewise, the role of extension was found negative in 93.55%, 77.78% and 73.81% of farmers in the three districts, respectively and it might be because they were not visited by extension agents. EL-Waqeff is far from the extension agent places, so it is more rarely visited by extension people compared to the other two districts. Therefore, they still practice traditional animal production activities, keep low productive animals and did not care about new technologies.

The consistencies in the direction of its effects reflected the concentration of extension efforts in the promotion of crop production; pushing for only one technology and disregarding others could lower the adoption rates for those technologies ignored. The results were, however, in agreement with the report of (Nagassa et al. 1997). Extension does not influence technology transfer in all cases, as farmers could also be important

source of information and agents of technology transfer, when farmers asses the characteristics of new technologies and find them to match their preferences, they often give the technologies to other farmers (Adesina and Baidu-Forson, 1995).

Table 2: General constrains as percent effecting technical packages adoption in Qena Governorate

Districts	Fund %	Extension %	Labor %	Education %	Farmer age %	Herd size %	Area holding %
El-Waqeff	64.52	93.55	6.45	38.71	51.61	70.97	9.68
Qefft	48.15	77.78	40.74	62.96	62.96	92.59	37.04
Qena	57.14	73.81	7.14	45.24	33.33	64.29	4.76

Labour has low influence on new technologies adoption in the EL-Waqeff and Qena districts of which only 6.45% and 7.14% of the studied farms suffered from labour shortage. However in Qefft, it was 40.74% showing the positive effect on the adoption of dairy technologies. Labour was measured in terms of labour allocated to crop production exerted significant influence adoption dairy technologies. In general as much as crops need labour farmers will pay less attention for dairy technologies specially that are labour needed.

Regarding the formal education of the household, it was found that there were 38.71%, 62.96% and 45.24% of the studied farms in the three districts were positively related to the adoption of most of the technologies. The higher the level of education of the household, the more likely the adoption of dairy technology. The relationship between the adoption of dairy production technologies and formal education of household heads was positive for most of the technologies and significant for feeding technologies. Basic education in rural sector can bring dividend in the form of enhanced productivity (Sarkar, 1995).

Farmer's age play an important role in the technologies adoption. Table 2 showed that 51.61%, 62.92% and 33.33% of the farmers in the three districts did not have the ability to adopt new technologies because they were older than other farmers. The effect of age on the adoption of all dairy production technologies studied was positive in the Qafft District because younger farmers were dominant. The hypothesis that younger farmers are more receptive to new technologies and bear more risks than their older counterparts, who often regarded to be conservatives, effect of age on the adoption of various dairy production technologies was observed. The results were in agreement with the findings of (Jabbar et al. 1998).

The herd size per household has positively influenced in the adoption of dairy technologies. The effect of herd size was shown in Table 2. There were 70.79%, 92.59% and 64.29% households in three previous districts with large herd adopted at least one of dairy production technologies. The relationship between the herd size specially crossbred cows and the

application of A.I. technique was positive. Households with larger herd size were more likely to adopt animal feeding technologies to reduce costs.

Table 2 showed that 9.68%, 37.04% and 4.76% of studied farmers in the same districts wanted to adopt green forage conservation but the land areas were not sufficient for cash crops and green forage area. Cultivated areas are positively affecting the adoption of green forage conservation. The adoption of dairy production technologies on cultivated area was clearly effected by green forage conservation in the Qefft District. However, the direct relationship differed with the technologies. Positive effect of farm size on the adoption of various technologies has been documented (Batz, 1999). Negative and significant effects of farm size on the adoption of various technologies were also reported (Kebede et. al., 1990).

2. Specific constrains per each technology

2.1. Some feed technologies constraints

The main constraint in animal feeding adoption technical packages was that green forage leftover were not available for conservation (corn silage-berseem silage or hay). In addition, chopper machines for corn silage were also not available either. There was difficulty to collect and transport sugar cane tops silage. Besides, farmers used it as wage (labour cost) of sugar cane harvesting. Table 3 shows Average of adoption feeding technologies in Qena, Chemical treatment of crops residuals (urea) was only found in the Qefft District where 11.00% of surveyed farmers used urea treatment. Average adoption rate of urea treatment was 3 times per farm. But farmers said that ammonia and plastic sheets were very expensive and ammonia not available. (El-Wardani et. al., 2005) found that urea treatment application in Ismailia was applied in10% of studied farms.

Table (3): Average of adoption feeding technologies in Qena Governorate.

Urea treatment	EL-Waqeff	Qefft	Qena
	---	11%	---
Molasses	45.11%	7.45%	24.25%
Minerals	---	41.23%	29.52%
Ration formulation	100%	96.12%	90.24%

There were 45.11%, 7.45% and 24.25% farms used molasses as animal feeding additives in the EL-Waqeff, Qefft and Qena districts respectively. It is noted that molasses production was available and near by farms, but there was no molasses centre for its distribution to livestock holders in the districts. Average adoption rates for molasses were 6.20, 4.35 and 4.60 times per farm for the same districts, respectively. (El-Wardani et. al., 2005) found that the use molasses in Ismailia dairy farm was 12%in studied farm. Regarding the mineral, there were 41.23% and 29.52% of farmers in the Qefft and Qena Districts who said that it was not available but the rest of surveyed farmers reported that they heard about it. Concerning the ration formulation, whether it used the available feed resources from the farm or farmers bought some ingredients from the market, it was reported that it was applied by 100%, 96.12% and 90.24% of farms in the three districts,

respectively. Average adoption rate for ration formulation were 12.80, 15.52 and 11.45 times per farm. In this respect (El-Wardani et. al., 2005) reported that the main constraint facing Ismailia dairy farms was feeding which represented 69% of total production constrains.

2.2. Milk markets constraints

Most of the large-scale farmers directly market to the processing industry. Small and medium scale holders are depending on milk collection centres (equipped with cooling facilities)or collection points (has no cooling facilities) for selling surplus liquid milk. As a tradition in Egypt it is considered improper to sell milk, rather it should remain available for the family, friends and needy people. This attitude partially still in some zones in Upper Egypt

governorates which reduce the available of surplus milk for sale and limited marketing channels. Milk that is retained at home is used either for direct consumption or home processing, , butter and ghee (samna) being the main products and "Karish" or "Mesh" (highly salted pickled traditional cheese) as a by product. Table 4 shows the milk market constraints faced by farmers in the study areas. The present study focused on two milk market technologies which were practised during the FSDP programme (milk hygiene – home processing). Most small farmers do not use closed milk cans, but any kitchen utensils of greatly varying hygiene standard. Where cans are used these are often of poorly plated steel and rusting, or aluminium with hollow handles, and /or with narrow neck or from plastic hollow handles. In respect of milk hygiene, FSDP programme activity was to train extensions and women farmers to use safe and healthy detergents in cleaning the milk cans, milk straining using mashing and mastitis detection by simple, visible methods. Training program was focused on milk testing with methylene blue, milk pH and formalin detection for milk collection centres. For milk processing, before the FSDP Programme was conducted, farmers used to apply home processing in such a traditional way. However, some processing methods using separator and churn have been introduced.

Table 4: Milk market constraints as a percentage affecting technical packages adoption in the Qena Governorate

Districts	Milk consumption		Home processing	
	Do not offer milk for sale %	No milk leftover %	No milk leftover %	Yes %
El-Waqeff	96.77	3.23	93.55	6.45
Qefft	74.07	15.93	44.44	41.00
Qena	78.57	7.43	42.86	45.00

The results concerning milk hygiene showed that 96.77%, 74.0 % and 78.57% of farmers reported that milk market was not available in the EL-Waqeff, Qefft and Qena districts, respectively. Meanwhile, there were 3.23%, 15.93% and 7.43% of farmers mentioned that there was no milk leftover. In respect of milk hygiene in studied areas, most farmers were not keen for milk

hygiene. Therefore, extension agent should reactivate and promoting for milk hygiene.

The home processing package showed that 6.45%, 41.00% and 45.00% in EL-Waqeff, Qefft and Qena districts, respectively used part of their milk products for home processing, while there were no milk leftover for the rest of the farmers since they consumed all fresh milk that they produced, in EL-Waqeff, Qefft and Qena districts respectively.

3- Management constraints

Table 5 shows the constraints in herd management faced by farmers in the studied areas. The herd management package consisted of artificial insemination (A.I.), mastitis detection, hoof care and suckling management. The results indicated that there were 64.52%, 62.96% and 26.19% of farmers heard about A.I., but they reported that it was not available, while 9.68%, 0.00% and 33.33% of farmers mentioned that AI was unknown in EL-Waqeff , Qefft and Qena districts, respectively. There were 25.81% of farmers in EL-Waqeff said that they did not trust the AI technique but 25.93% and 21.43% of farms in Qefft and Qena districts trusted and applied the A.I. techniques. Farmers in El-Waqeff district refused to apply A.I. techniques probably related to the herd structure where local breed is dominant and calves stayed with their mothers for suckling until dry-off. It might also be attribute to the distance between farms location and the veterinary administration.

The average adoption rate of A.I. in the three districts were 0.00, 4.29 and 4.91 times per farm in EL-Waqeff, Qefft and Qena districts, respectively.

Table 5: Herd management constraints as a percentage affecting technical packages adoption in the studied areas

	Artificial Insemination (AI)				Mastitis			Hoof care	
	Not available %	Unknown %	No trusting %	Yes %	Animal free %	Call veterinary %	By myself %	Not available %	unknown %
El-Waqeff	64.52	9.68	25.81		16.23	80.65	3.12	0.06	87.09
Qefft	62.96			25.93		55.56	44.44	33.33	48.15
Qena	26.19	33.33		21.43		61.90	38.10	0.07	76.19

In the El-Waqeff district, 16.23% of farmers did not know about mastitis while 80.65% of farmers called the veterinarian and 3.12% handled the incident by themselves.

In the Qefft district, 55.56% of farmers called the veterinarian soon as they noted the incident of mastitis while 44.44% handled it by themselves.

Farmers called a veterinarian at the early stage of mastitis detection in EL-Waqeff and it might be because the local breed with low milk production is dominant. In most cases the farmers leave the calves with their mothers for suckling and only a small amount of milk produced were used for home consumption and farmers did not pay careful attention to the udder condition. Farmers in Qefft and Qena districts have high producing cross-bred animals

and therefore mastitis detection is very important because it frequently happen in high producing cows.

Farmers know hoof care and hoof trimming, but do not perform this for dairy animal but they perform it frequently in donkey and horses. Hoof care in the three districts showed that 0.06%, 33.33% and 0.07% of farmers heard about it but it is not available, while 87.09%, 48.15% and 76.19% of farmers said it is unknown to them. The climatic condition prevailing in the area (hot & dry) could be a reason for the low hoof care incidence

Table 6 showed suckling methods and period for dairy cows in EL-Waqeff, Qefft and Qena districts. There were 70.97%, 81.48% and 92.86% of farmers in those respected district left the calves with their mothers for 6 months (i.e. milking period) until dry-off. In addition, there were 25.81%, 18.52% and 2.38% in the same respected districts dried-off the cows after 5 months.

Regarding the dry-off methods, 3.22% and 35.71% of farmers in El-Waqeff and Qena district left the calves with their mothers or until the mothers refused the calves for suckling and kicking them. There were 51.61%, 96.30% and 90.48% of farmers in the three respective districts who did the milking only once a day while 38.71% and 3.70% of famers in El-Waqeff and Qefft districts did the milking until the dry-off period.

Table 6: Suckling methods and period for dairy cows in EL-Waqeff, Qefft and Qena districts

	Leaft calves with mother 6 months %	After 5 months %	Milking once a day %	Milking cows till drying off %	Suckling period for cows in weeks	Suckling period for Buffalo in weeks
EL-Waqeff	70.97	25.81	51.61	38.71	20.13	12.20
Qefft	81.48	18.52	96.30	3.77	12.00	12.00
Qena	92.86	2.38	90.48		9.45	9.00

The suckling period was 20.13 weeks and 12.20 weeks (in El-Waqeff district) and 9.45 weeks and 9 weeks (in Qena district) for cows and buffaloes, respectively. While in Qefft it was 12 weeks for both cows and buffaloes. There is a negative correlation between the length of suckling period and selling fresh milk to market or processing.

Conclusion

Form the present study it could be concluded that there is a shortage of extension tools and knowledge in the studied area. Extension people need continues training programs for dairy production technologies. Also Transportation is very important to facilitate field days and seminars for farmers. Privet sector should contributing to make shopper machine available. The availability of feed and extension were the two major constraints in the studied area. Household kept large herd size as compared to the feed availability; extension agents did not visit farmers on regular basis. The effect of extension on most dairy production technologies was negative.

The analysis of crop-livestock interaction has shown important interdependencies between these two components because of the two-way input exchanges and this should be considered in any development effort.

Household resources and the level of education of farmers had affected the adoption of dairy production technologies. A competition between crop and dairy production technologies for labor was observed. Therefore, it is necessary to introduce labor saving technologies in the system because new technologies are naturally labor intensive.

The high contribution of milk and milk products to the income of farmers clearly demonstrates the positive effect of integrating smallholder dairy production in the farming system. Increased income could be instrumental in the use of more inputs in farming activities and thereby ensuring more farm outputs and food security at household level.

Conservation of green forage and treatment the agricultural by-products with urea, using molasses and mineral additives for ration will have a good effect on increasing milk production and reduce feed cost as well as sustain good animal health.

Upper Egypt should pay attention for AI which is very important to increase milk production from the existing animals. Veterinary services play an important role in AI dissemination.

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معوقات أستخدام الحزم الفنية فى مزارع الإنتاج الحيواني فى صعيد مصر

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معهد بحوث الإنتاج الحيواني-مركز البحوث الزراعية-وزارة الزراعة-دقي-جيزة-مصر.

١و٢و٤ قسم بحوث نظم الإنتاج الحيواني

٣ قسم بحوث تربية للأبقار

أجريت الدراسة على ١٠٠ مزرعة من مربى إنتاج الألبان تحت النظم المز رعية المختلطة (إنتاج حيواني/نباتي) وتم تقسيمهم إلى ثلاثة مراكز(الوقف ، قفط، قنا) تابعين لمحافظة قنا. أستخدم أسلوب العينة العشوائية فى اختيار عينة الدراسة. تم تصميم استمارة استبيان تحتوى على كل البيانات التى تفي بغرض الدراسة وتم تجربتها على عدد محدود من المزارعين فى أبريل ٢٠٠٧. ثم جمعت البيانات عن طريق المقابلة الشخصية وكان الهدف من الدراسة هو معرفة أسباب عدم تبى مزارعي الألبان الحزم الفنية المتعلقة بإنتاج الألبان وتم وضعها فى ثلاثة حزم هى تغذية الحيوان (حفظ الأعلاف الخضراء، معاملة المخلفات باليوريا أو الامونيا، الإضافات الغذائية مثل الأملاح المعدنية و المولاس) ، الحزمة الثانية متعلقة بتسويق الألبان (إنتاج لبن نظيف، تبريد الألبان، تصنيع الألبان) ثم الحزمة الثالثة تتعلق برعاية الحيوان (التلقيح الصناعي، الكشف عن التهاب الضرع ، تقليم الحافر ، نظم الرضاعة والفطام للعجول).

وقد أوضحت النتائج أن حجم القطيع فى مراكز الوقف ، قفط ، قنا كان ٣٠,١٠, ١٧,٩٠ , ١٥,٧٠ وحدة حيوانية على التوالي. وكان ٧٠,٧٩, ٩٢,٥٩, ٦٤,٢٩% من مزارعين الدراسة الذين لديهم حجم قطيع أكبر يتبنى واحدة من التقنيات المذكورة على الأقل.

وكانت أهم المعوقات تتمثل فى الخدمة الإرشادية التى كانت غائبة عن ٩٣,٥٥, ٧٨.٧٧, ٧٣,٨١% من المزارعين فى الدراسة. خلط الأعلاف كان موجود فى١٠٠% من المزارع بمركز الوقف , ٩٦,١٢% من مزارعين مركز قفط , ٩٠,٢٤ من مزارعين مركز قنا. وكان الخلط يتم بطريقة تقليدية تفتقر فى بعض الاحيان الى بعض المكونات الأساسية فى العلائق أثناء الخلط.

حفظ الأعلاف الخضراء لم يوجد فى المزارع التى أجريت بها الدراسة لسببين الأول عدم توفر الأعلاف الخضراء بشكل يكفى عملية الحفظ والثاني عدم توفر ماكينات التقطيع.

إضافة المولاس فى تغذية الحيوان وجد فى ٤٥,١١, ٧,٤٥, ٢٤,٢٥% من الثلاثة مراكز على التوالى.

معاملة المخلفات باليوريا وجد فى ١١% من مزارعين قفط.

لإنتاج لبن نظيف لم يلاحظ أى أستخدام لمنظفات أمنه أو صحية فى تنظيف أواني الحليب فى ٩٦,٧٧, ٧٤,٠٧, ٧٨,٥٧ % من المزارعين فى الثلاثة مراكز على التوالي

التلقيح الصناعي يطبق فى ٢٥,٩٣ , ٢١,٤٣% من المزارع فى مركزي قفط وقنا ولم يتم أستخدامها فى مركز الوقف.

بصف عامة يوصى بالآتي:

يجب الاهتمام بتوفير الخدمة الإرشادية ورفع قدرات المرشدين عن طريق التدريب الدائم مع توفير المواصلات الى المزارعين لتيسير عقد الندوات والايام الحقلية.

- عملية حفظ الأعلاف الخضراء يلزمها توفير ماكينات التقطيع ويجب على القطاع الخاص المساهمة فى ذلك.