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Comparative Study of the Production and Marketing of Onions in Three Regions of Libya

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ABSTRACT

The onion is an important winter vegetable crop in Libya. It is grown for consumption in the green state and as dry bulbs. Its production is geographically concentrated in three regions: Tripoli, Jalue and Sebha. This study was conducted in March and April of 1979 in order to compare the production and marketing problems confronting onion growers in the three regions, and to ascertain feasible solutions for them. Personal interviews by the extension agents in the various regions were conducted with random samples of 130, 23 and 42 farmers in Tripoli, Jalue and Sebha, respectively. The farmers were asked to fill out a questionnaire designed specifically for this study.

The study showed that areas allocated for onion growing varied from one region to another and from year to year due to price fluctuations, storage problems, and other reasons. Early Texas Grano (502) is the most common variety in the Tripoli region. This variety does not withstand storage for long periods and arrangements should be made to encourage onion seed production locally, or to import varieties suited to local conditions and tolerant to storage. Adequate cold storage facilities should also be provided.

The rôle of agricultural co-operatives in the production and marketing of the onion crop is minor. They could play a greater part in supplying farmers with production inputs, and in the co-operative marketing of the produce.

Cleaning, sorting and packaging of onions prior to marketing is done by the farmers in all regions.

Finally, most farmers from all regions indicated that they planned to expand onion production in the future, if major production and marketing problems are solved.

INTRODUCTION

The onion is an important vegetable crop in Jamahiriya. It is grown for consumption in the green state and as dry bulbs. The production of the onion crop is geographically concentrated in Tripoli, Sebha and Jalue areas. The production and marketing problems confronting producers of this crop differ from one area to another. Consequently, this study was conducted in March and April of 1979 in order to ascertain and compare the major production and marketing problems in the main areas of production. Comparing these problems and finding the proper solutions for them will be invaluable for both producers and consumers. Undoubtedly, this will contribute to raising producers' incomes and their standard of living, while consumers will receive a better quality product at a reasonable price.

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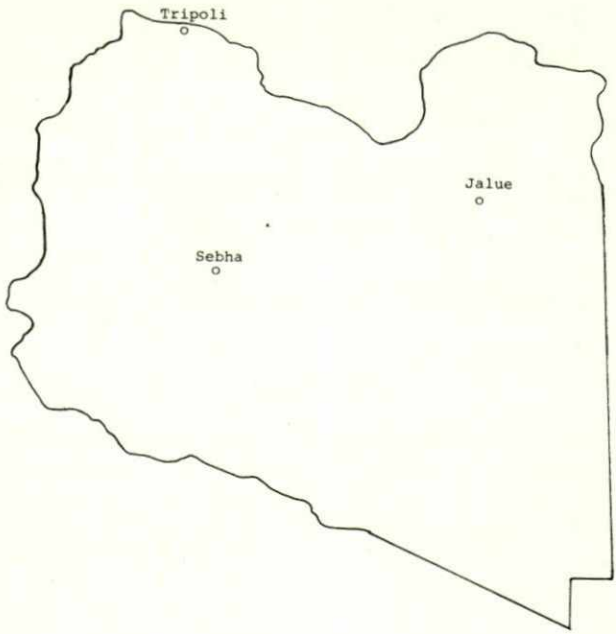

Fig. 1. The three main areas for onion production in Jamahiriya.

MATERIALS AND METHODS

Extension agents in the various regions were asked to collect information on a questionnaire designed especially for this study. From the information gathered it was possible to obtain details of production and marketing of onions in the various regions.

About two hundred farmers were randomly selected for this survey. They were interviewed personally by extension agents in March and April of 1979 and asked to fill out the questionnaire. The distribution of farmers sampled from the selected regions was as follows: Tripoli 130; Sebha 42; and Jalue 23.

PRODUCTION OF ONIONS

Comparison of land area allocated for onion growing

The three major regions for onion production in Jamahiriya are depicted in Fig. 1. Table 1 presents the distribution of the farmers sampled, average farm areas, and

Table 1 Distribution of farmers sampled, average farm areas and farm areas allocated for onion production.

Region	Number of farmers sampled	Average farm areas (Hectares)	Farm area allocated for onion production (Hectares)	Percentage of the farm area allocated for onion production
Tripoli	130	9.49	1.29	13.60
Jalue	23	5.25	0.492	9.40
Sebha	42	14.30	2.06	14.40

Table 2 Areas allocated for onion production in the various regions.

Region	Area allocated for onion production (Hectares)	Number of farmers sampled	Percentage
Tripoli	Less than 1	45	34.60
	From 1–2	71	54.60
	More than 2		
	Total	130	100.00
Jalue	Less than 1	20	86.8
	From 1–2	3	13.2
	Total	23	100.00
Sebha	Less than 1	12	28.57
	From 1–2	18	42.86
	More than 2	12	28.57
	Total	42	100.00

percentage of the farm areas allocated for onion production in the three regions. It is clear from the Table that the average farm area in Sebha region was 14.30 hectares compared to 9.49 hectares in Tripoli and 5.25 hectares in Jalue. The average area allocated for onion production was 2.06 hectares in the Sebha region (14.40% of the total farm area) compared to 1.29 hectares in Tripoli (13.60% of the total farm area) and 0.492 hectares in Jalue (9.40% of the total farm area).

The figures in Table 2 indicate that more than one-third of the farmers sampled in the Tripoli region allocate less than one hectare for onion production. However, the majority of the farmers (54.60%) allocate between 1 and 2 hectares for onion growing. The remaining 10% allocate more than 2 hectares.

The data shows that 30% of the farmers in the Tripoli region allocate a fixed area for onion production due to the small size of their farms. However, the majority of the farmers sampled (70%) reported that the areas allocated for onion production change from year to year due to the instability of market conditions for onions caused by the absence of proper storage facilities. Lack of farm labour and inadequate irrigation were also mentioned as reasons for the fluctuation in the amount of land allocated for onion growing.

In Jalue, the majority of the farmers sampled (86.80%) allocate less than one hectare for onion growing. The rest of the farmers (13.20%) allocate between 1 and 2 hectares.

Only 8.70% of the farmers sampled in Jalue allocate a fixed area for onion production. The remaining 91.30% reported that areas allocated for onion growing change from year to year. Their justification of this was similar to that provided by onion growers in the Tripoli region.

In the Sebha region, all farmers reported that areas allocated for onion growing change from year to year; reasons being similar to those provided by Tripoli and Jalue farmers.

Sources of onion seeds and varieties

The majority of the farmers sampled (97.5%) in the Tripoli region indicated that they used imported seed onions. The remaining 2.5% indicated that they used seeds produced locally. Early Texas Grano (502) is one of the most commonly used varieties. However, this variety cannot tolerate long storage.

In Jalue and in Sebha, the majority of the farmers obtain onion seeds from the agricultural co-operatives in their area. Giza (6) is the most commonly used variety. Early Texas Grano (502) and some local varieties are also used.

Planting method

The majority of the farmers sampled in the three regions reported that the onion is propagated by seeds sown in outdoor seed-beds before transplanting to the field. Very few farmers in the three regions reported that they used the direct method of propagation whereby the onion seeds are sown where the crop is to mature.

The average seeding rate in the three regions ranged from 5–10 kgs per hectare, depending upon the variety, climatic conditions and other factors. The average price paid was about 12.00 L.D. per kg of onion seeds.

Average productivity

Table 3 reports productivity in the various regions. Average productivity in Jalue was 26.20 tons per hectare, compared to 15.04 tons in Sebha and 13.16 tons in Tripoli.

Soil and climatic conditions are probably more favourable for growing this crop in Jalue than in the other two regions.

Expanding future production

When questioned about their future plans regarding onion production, over 80% of the farmers sampled in all regions indicated that expansion in production depended upon prevailing prices, availability of irrigation water, and adequate cold-storage facilities.

The rest of the farmers (about 20%) reported that they do not intend to expand onion production due to the lack of adequate cold-storage facilities and the low prices of the crop prevailing at harvest.

Problems of onion production

The major production problems confronting onion growers in the three regions are:

(1) Diseases and insects. This is one of the major production problems in all regions. It is, therefore, recommended that the supply to farmers of insecticides, pesticides and spraying equipment should be intensified, along with an effective extension programme on disease and insect control.

(2) Labour problems. More than two-thirds of the farmers sampled in all regions reported that wage rates are rising and that there is a shortage of labour. This calls for the need to mechanize farming operations.

(3) Lack of improved seeds. Good quality and certified seeds are not available. It is important that seeds, adaptable to the local conditions and that can withstand long storage, are produced.

Other production problems, such as lack of fertilizers and irrigation, should be tackled in order to increase productivity.

Table 3 Average productivity of onions in the various regions.

Region	Number of farmers sampled	Average productivity (Tons/hectare)
Tripoli	130	13.16
Jalue	23	26.20
Sebha	42	15.04

MARKETING OF ONIONS

The data shows that the majority (90%) of onion growers in the Tripoli region sell their crop at Thalatha wholesale market in Tripoli. The remaining 10% sell their produce either direct to the consumer at the farm gate or at local markets in their vicinity.

The data shows that 85% of the farmers sampled were dealing with a specific middle man at Thalatha. They felt it was easier to deal with an individual to guarantee selling the whole crop, without accumulating a surplus of unsold onions. A further 10% of the farmers were dealing with several middle men to avoid overcrowding at a particular place, and to make sure that the whole crop was disposed of. The remaining 5% were not dealing with middle men, possibly because they were selling their produce at local markets, or direct to the consumer.

The commission charged by middle men for their services has been fixed at 5% by the government. This commission rate is considered reasonable and fair by all farmers.

In Jalue, about two-thirds of the farmers sampled indicated that they sell direct to the consumer since it is easier and saves them transportation costs. The remaining one-third of farmers sampled revealed that they sell their produce at the wholesale market since this gives them the opportunity to sell at competitive market prices. The commission charged by middle men at the wholesale market was fixed at 5%. The commission rate is considered reasonable and fair to all farmers.

Onion growers in the Sebha region sell their produce at the wholesale market, local markets and grocery stores or direct to the consumer. However, the farmers who sell their produce at the wholesale market indicated that they deal with several middle men according to the prices received and the commission charged. The majority of the farmers sampled in the south indicated that the commission rate was relatively high, but they did not specify it.

The major marketing problems reported by the farmers sampled were transportation, pricing and storage problems—as will be discussed later.

Onion growers in the three regions sell their produce in the green state and as mature bulbs. Quantities sold differ from one region to another. For example, the average quantity sold by each farmer in Jalue was approximately 9.0 tons of green onions and 3.1 tons of dry bulbs. In Sebha, the average quantity sold by each farmer was approximately 15.0 tons of green onions and 2.5 tons of dry bulbs.

The relatively high prices of green onions and lack of proper storage facilities encourage farmers in all regions to sell the major part of their produce in the green state.

It is clear from Table 4 that the prevailing prices for green and dry onions are the lowest in the Tripoli region. Thus, the percentage of the proposed increase in the prices are here the highest. The large quantities produced, coupled with low transportation rates, are possibly the reasons for the lower price received by onion growers in the Tripoli region compared with the two other regions.

Table 4 Prevailing and proposed prices for onions during March and April, 1979.

Region	Onion crop	Average prices during March and April, 1979 (Dirhams/kg)	Average suggested prices (Dirhams/kg)	Percent of the proposed increase in the prices
Tripoli	Green	105	208	98.0
Jalue	Green	230	265	15.1
Sebha	Green	143	200	40.0
Tripoli	Dry	173	230	57.0
Jalue	Dry	291	329	13.2
Sebha	Dry	187	289	55.0

Transportation

Seventy-three per cent of the farmers sampled in the Tripoli region indicated that they transport their produce to the wholesale market themselves. The remaining 27% indicated that they use hired transport. The average freight paid was about 7.5 L.D. per carload.

In Jalue, 65% of the farmers sampled indicated that they transport the produce to the market by themselves. Another 22% pointed out that the agricultural co-operatives in their areas help in transporting the crop to the market. The remaining 13% use hired transport at an average freight cost of 2 L.D. per carload.

The data shows that 60% of the farmers sampled in the Sebha region transport their produce to the market by themselves. The remaining 40% transport part of their crop by themselves and hire someone to transport the other part for an average freight cost of 14 L.D. per carload.

The establishment of more agricultural roads is highly recommended. Also, proper and adequate transportation facilities should be provided by agricultural co-operatives to assist farmers in transporting their produce to market.

Servicing of onion prior to marketing

Farmers sampled from all regions indicated that the major operations prior to marketing include cleaning, grading and packing. Sorting and cleaning involves the removal of dust, dry leaves, and small, or imperfect, bulbs that are not suitable for marketing.

Grading is done on the basis of size, colour, shape and variety. Packing involves putting them in small bundles (in the case of green onions), polyethylene sacks or wooden crates.

Previous research (3) has shown that these services have an increasing effect on the prices received by onion growers. It is, therefore, suggested that farmers should be made more aware of the advantages of grading, standardization, and servicing of onions prior to marketing.

About 70% of the sampled farmers in the Tripoli regions did not store onions. The remaining 30% stored part of their crop using netted sacks kept in a well-ventilated place, away from humidity and direct sunlight.

In Jalue, 96% of the farmers sampled indicated that they do not store onions; 4% only reported storing part of the crop.

In the Sebha region, however, about two-thirds of the farmers sampled pointed out that they store onions in well-ventilated places, away from humidity and direct sunlight. The rest of the farmers did not store onions because the available varieties cannot withstand storage under high-temperature conditions prevailing in the south.

Nevertheless, over 90% of the farmers sampled in the three regions reported that cold-storage facilities should be provided by agricultural co-operatives or any other official agency. Such facilities will definitely reduce spoilage of onions, thereby reducing marketing costs.

Finally, the majority of farmers sampled in all regions pointed out that the available varieties do not withstand storage for long periods. It is, therefore, recommended that varieties with good storage quality should be encouraged for growing in Jamahiriya.

ROLE OF AGRICULTURAL CO-OPERATIVES

The majority of the farmers sampled in the Tripoli region (85%) were not in favour of co-operative marketing and indicated that the services provided by agricultural co-operatives in their areas were not adequate. The remaining 15% were in favour of

this type of market organization and felt that the services provided by agricultural co-operatives were adequate.

Similarly, the majority of the farmers sampled in Jalue and Sebha indicated that the services provided by agricultural co-operatives were not adequate. They recommended that these co-operatives should play a greater and more effective role in supplying farmers with the needed inputs and marketing of their produce.

Growers felt that agricultural co-operatives should be promoted and provided with all marketing facilities and that Extension Service, and the Co-operative Union, should start a programme to make farmers more involved and aware of benefits gained from co-operative movement.

RESULTS AND DISCUSSION

The prime objective of this survey was to study and compare the major production and marketing problems facing onion growers in Tripoli, Jalue and Sebha. Personal interviews by the extension agents in the various regions were conducted in March and April, 1979, with random samples of 130, 23 and 42 farmers in Tripoli, Jalue and Sebha, respectively.

In the light of the collected data and the previous analysis, we come to the following conclusions and suggestions: (1) Area allocated for onion growing varied among the regions. The average area allocated for onion growing on an individual farm was the highest in the Sebha region (2.60 hectares or 14.40% of the average farm area). Tripoli came second (1.29 hectares or 13.60%) and the lowest was in Jalue (0.492 hectares or 9.40% of the average farm area). These figures indicate that onion is one of the major crops in the three regions and thereby its production should be expanded. (2) Areas allocated for onion growing in the three regions varied from year to year due to price fluctuations, storage problems and other reasons. These problems must be settled in order to make onion growing a more profitable business. (3) Early Texas Grano (502) is the most common variety in the Tripoli region. This variety does not stand storage for long periods.

Giza (6) is the most common variety in Jalue and Sebha. However, there are other varieties used in these regions such as Early Texas Grano (502) and some local varieties. (4) The majority of the farmers sampled in the various regions indicated that the available varieties do not adequately stand storage. They suggested that arrangements should be made to encourage onion seed production locally, or import varieties suited to the local conditions and tolerant to longer storage. This might guarantee the availability of adequate supplies of onions throughout the whole year at reasonable prices. (5) Agricultural co-operatives should play a greater role in supplying farmers with various production inputs such as machinery, fertilizers, insecticides, etc. Accordingly, co-operatives should be encouraged and farmers educated about their benefits. (6) In order to eliminate the rôle of the middle man in the market place, co-operative marketing should be encouraged. Adoption of co-operative marketing should increase the returns from the sales of products of the members and eliminate the commission paid to middle men at the wholesale market. Consumers will benefit from this policy as well. (7) Adequate cold-storage and refrigeration facilities should be provided by agricultural co-operatives or government agencies in all regions. This might help dispose of surplus onions and thereby stabilize prices. Producers as well as consumers should benefit from this policy. Onion processing industries should also be promoted and subsidized if necessary. (8) Prior and adequate transport facilities should be provided by agricultural co-operatives to help farmers in transporting their produce to the market place. Such policies should reduce the spoilage of vegetables in general, and help farmers who are far away from major consumption centers, or do not have transport facilities. Consequently, marketing costs will be reduced. (9) The majority of

the farmers sampled in all regions indicated that they clean, sort and package onions prior to marketing. It is suggested that the Secretary of Agriculture, or any of its affiliated agencies, should impose a grading system for onions, and educate farmers accordingly. Farmers should also be made aware of the fact that standardization, grading and servicing of the produce prior to marketing have an increasing effect on the price received. (10) It was indicated by the majority of the farmers sampled that the onion crop is affected by many diseases and insects which cause considerable losses. It is therefore, suggested that effective control measures should be practised in all regions. (11) Lastly, most farmers in the three regions pointed out that they plan to expand onion production in the future if major production and marketing problems such as pricing, transportation, storage and pest control are solved.

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دراسة مقارنة عن انتاج وتسويق البصل فى ثلاث مناطق بالجماهيرية

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المستخلص

يعتبر محصول البصل من أهم محاصيل الخضر الشتوية بالجماهيرية العربية الليبية الشعبية الاشتراكية . وان زراعته متركزه جغرافيا فى ثلاث مناطق رئيسية هى طرابلس ، جادو ، وسبها . ولقد أجريت هذه الدراسة فى شهرى مارس وابريل ١٩٧٩ بهدف مقارنة المشاكل الانتاجية والتسويقيه التى تواجه منتجى هذا المحصول فى المناطق المختلفة . وتم اختيار عينة عشوائيه تتألف من (١٣٠) منتجا بمنطقة طرابلس و (٢٣) منتجا بمنطقة جادو و(٤٢) منتجا بمنطقة سبها ، وتمت مقابلتهم شخصيا من قبل المرشدين الزراعيين بالمناطق المختلفة حيث طلب منهم تعبئة استمارة أعدت خصيصا لهذه الدراسة .

ودلت نتائج الدراسة على أن المساحات المخصصة لزراعة محصول البصل تختلف بين منطقة وأخرى وبين عام وآخر حسب تقلبات الأسعار ومشاكل الفائض والتخزين وغيرها . كما وأن صنف تكساس جرانو المبكر (٥٠٢) هو أكثر الاصناف المستعملة فى منطقة طرابلس فى حين أن صنف جيزة (٦) هو أكثر الاصناف استعمالا فى منطقتى جادو وسبها . غير أن هذه الاصناف لا تتحمل التخزين لفترات طويله ، الأمر الذى يستدعى تشجيع انتاج البذور محليا أو استيراد أصناف ملائمة للبيئة الليبية وذات مقدرة عالية على التخزين . هذا علاوة على ضرورة توفير وسائل التخزين المبرده .

كما وأكدت الدراسة على أن الجمعيات التعاونية الزراعية لم تقم بدور جوهرى فى انتاج أو تسويق المحصول . وهذا يحتم على الجمعيات التعاونية القيام بدور أكثر فعالية فى تزويد المنتجين بالمستلزمات والتسويق التعاونى للمنتجات الزراعية .

ودلت الدراسة أيضا على أن جميع المنتجين يقومون بعمليات تنظيف البصل وفرزه ووضعه فى عبوات مناسبة قبل تسويقه حيث أن ذلك يساعد على رفع الأسعار المتحصل عليها .

وأخيرا فلقد أبدت أغلبية المنتجين النيه فى التوسع فى زراعة هذا المحصول مستقبلا وخاصة اذا ما تم التغلب على المشاكل الرئيسية التى تعترض انتاج وتسويق هذا المحصول .