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PRODUCERS PRICES FOR OLIVES AND OLIVE OIL IN TUNISIA**

Osama A. Al-Zand*

Prices and price relations of farm products are one of the most crucial factors affecting the attainment of agricultural policy objectives. Farm-level prices provide key incentives (or dis-incentives) which influence production and marketing behavior through their direct effect on farm incomes. A study of the relationship between farm prices and other intermediate and final market prices is necessary in examining the efficiency of the pricing system.

The objective of this paper is to analyze olive prices and to evaluate the efficiency of the present pricing structure in linkage primary olive producers with the final olive oil market. Olive pricing efficiency is measured in terms of the farm level price of olives in relation to the value of the corresponding olive oil equivalent. An alternative method of olive pricing is proposed.

The lack of easily accessible information imposes certain limitations on efficiency analysis via prices, margins and costs. This paper, however, is based upon sample data on marketing practices, prices

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** It is noted that the data concerning olive prices are reported only for two crop years of 1967/68 and 1968/69; hence the conclusions drawn are not considered final - We hope, however, that the implications of this study will promote serious efforts to establish a systematic data collection system in this vital sector of the Tunisian economy which would permit further economic evaluation and analysis.

received and cost of services required to transform olives into oil available for wholesale marketing.

The Market for Olives

Although olives are one of the most important agricultural products in Tunisia, there is currently no uniform market for olives traded at the regional and national levels. Organized market centers are not known.[1] Information on farm prices paid and quantities traded is inadequate or non-existent. This may be explained by the lack of communication media, market information systems, competitive practices and facilities which bring together buyers and sellers of the commodity. Occasionally some harvested olives are sold by farm cooperatives in northern Tunisia via public auctions. However, the quantities involved are relatively small and not, therefore, representative of the whole olive market. Most olive transactions take place on an individual basis between a single buyer and seller -- often on the basis of a long established cliental relationship between an olive farmer and an oil processor. These transactions are usually made at the farm where the entire crop of olives is sold on the trees (Khadara). Accurate accounts of terms of trade, i.e. quantities and qualities of olives sold, price per unit of sale, method and timing of payment of Khadara sales are not available.

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1) Regional olive market centers used to exist in Enfidaville, Sousse and Sfax. These were completely eliminated after the extension of cooperatives and marketing control by the Union Centrale des Cooperatives Oleicoles (UCCO). There are no plans to re-establish these markets at the present time.

The 1967 market reorganization intended to eliminate trading in fresh olives was initially conceived to link olive producers directly with the final and more organized market for olive oil.[2] This linkage has been difficult to achieve since most of the economic and technical factors involved in olive production and marketing are entirely different from those of olive oil processing and marketing. An apparent shortcoming of this legislation was that it failed to recognize a strong distinction between two sectors which exist in the olive market of Tunisia. This distinction largely exists between primary producers of olives as sellers of this agricultural commodity and processors and/or dealers as wholesalers or traders of olives and olive products. The role of these two groups is explained essentially by the economic power and resource endowment normally controlled by each group. Farm producers of olives have limited economic power and are mainly interested in selling their production as a cash crop. The urgency for selling is intensified by the perishability of the product after harvest and the high cost of handling. The cost of olive harvesting, transporting, processing and storing of olive oil for future sales requires considerable investment, cash expenses and time -- which are normally beyond the economic means of most Tunisian olive producers.

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2) Sweeping reorganization of the Tunisian olive oil sector was announced following the formation of the Central Union of Olive Oil Cooperatives (Union Centrale des Coopératives Oléicoles or UCCO) on September 30, 1967. The UCCO was authorized to control and regulate the commercialization of olives and olive oil products. One of the aims of the intended reform was to ensure that the producers would get a bigger share of the final market price than before. Two important measures were taken to coordinate olive production with processing through service cooperatives (l'opération de domiciliation). One, purchase of the olive harvest while the crop is still on the trees (les operation de Khadara) was made illegal. Two, sales of olives destined for oil production in olive market centers was also prohibited except for small quantities which can only be purchased by agricultural cooperatives. Both of these measures were subsequently reversed on October 1970.

This situation does not allow them to participate effectively in the commercial marketing of olive oil. On the other hand, processors -- dealers in olives -- do usually have the economic means and skills to perform the multi-function of processing and wholesaling of olive oil for commercial outlets. It must also be recognized that in addition to these functions, processors and traders purchase olives with an unspecified cost of risk taking which results from the uncertainty attached to the olive oil price and the export market situation. This risk cannot be taken by most olive farmers who have limited income and little access to accurate information about actual olive oil prices and market outlook.

As a result of these established characteristics of the Tunisian olive market, fresh olives for oil processing continue to be sold at the farm level under various and largely unknown price arrangements. These sales usually take place between olive producers and olive oil processors on an individual basis. It is estimated that <u>at least</u> 50 percent of the olives produced in Tunisia are sold, as such, to processors. The rest are presumably processed for the account of primary producers.[3)]

In addition, a substantial speculative element has remained in the trading of Tunisian olives. Speculation is particularly evident where olives are sold on the tree (Khadara) and where considerable uncertainty is involved in estimating the ultimate quantity of harvested olives, cost of harvest and corresponding oil yield and price. Specific measures prohibited Khadara sales of olives for the 1968/69 crop year but was subsequently reversed in 1970.

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3) This estimate needs to be verified by the National Office of Oil. The author believes that the percentages of olives sold to processors is perhaps higher than 50 percent.

Olive Prices in Tunisia

Despite the ban on fresh olive sales announced during the 1968/69 crop year, farm price estimates of olives sold for commercial oil processing were made. A question might be raised with respect to the accuracy of the price data reported, however, these represent the best estimates available on actual market transactions.[4] Table 1 shows the average prices and corresponding oil yields of olives sold in major producing regions during 1967/68 and 1968/69. The attachment of oil yield to the price of oil is rather important as the value of olives is almost entirely derived from the value of their oil content.[5] Furthermore, there is considerable variability in the oil content of olives; depending on their variety, degree of ripeness, and various other factors. Oil yield can vary between a minimum of 12 percent and maximum of about 30 percent.[6]

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4) Service Statistique Agricole of Tunisia continued to publish regional data (by Gouvernorate) on olive prices, yields and quantity and quality of olive oil produced in each region. The data is usually published in Transformations des Produits de l'Agriculture et de la Pêche.

5) Other oil seeds such as soybeans, peanuts and sunflowers derive their price from the value of both oil, as an edible commodity, and meal, as an animal feed, which are normally derived from these oil seeds. Olive meal (grignon) has no feed value because it lacks protein content. The small percentage of oil left in the grignon is usually extracted for industrial purposes. The value of this oil is relatively unimportant in determining the price of olives.

6) Different timing of harvest of certain olive varieties results in oil yield differences. Oil yield increases progressively until the fruit turns black, the indication for ripeness. At that point the weight of oil per fruit remains stable, but its percentage of the total weight varies. This percentage increases if the olives start drying, or it will quickly drop after rains. This should explain why the price of fresh olives would go up after maturity and when it becomes dry. Improvement in Olive Cultivation, FAO Agricultural Study No. 50, Rome 1961, p. 210.

Table 1 - The Relationship between farm prices of olives and oil yields in the most important olive producing regions of Tunisia 1967/68 - 1968/69[1])

Regions[1])	1967/68		1968/69	
	Olives, Farm Prices Dinar/Ton[2])	Yield of Oil Percent	Olives Farm Price Dinar/Ton[2])	Yield of Oil Percent
Tunis	48	19	-	19
Beja	35	19	40	19
Nabeul	35	16	30	21
Sousse	29	19	34	20
Sfax	59	24	46	26
Tunisia (weighted average)	50	22	39	22

1) These regions produce about 80 percent of the olives grown in Tunisia.

2) This price is assumed to be the farm price or the price of harvested olives on the farm. An olive production tax of 2d,620 per ton must be paid by olive producers. Hence farm price should be adjusted by this amount. It has been noted that the price data for Sousse and Nabeul might have been partly influenced by local restrictions imposed on the transportation of olives outside these gouvernorates. This, however, should not drastically change the nature or the comparability of the data presented.

Source: Service Statistique Agricole, Tableau de Dépouillement, olives traitées par les huileries au cours de la campagne 1967/68, 1968/69.

The efficiency[7] as well as the adequacy of olive prices shown in Table 1 can be evaluated in various ways. First, using oil yield as a major quality index one would expect that a positive correlation must exist between prices of olives and oil yield. That is, the higher the oil yield the higher the price. Such a relationship between olive prices and yields in Tunisia is not evident. Except perhaps in the Sfax region, olive prices appear to be independent of corresponding yields.

Second, the efficiency of olive prices in Tunisia can also be examined by considering the wholesale value of the olive oil extracted and the value of by-products together with processing and marketing costs. The olive and olive oil price relationships during the period 1967/68 and 1968/69 and the corresponding marketing and processing margins are shown in Table 2.

The data in Table 2 show that average farm price dropped 22 percent in 1968/69 by comparison with that of 1967/68. This reduction occurred despite the fact that oil yield and its value remained almost unchanged during both years. Consequently, the share of marketing and processing margins, calculated as a percent of average farm price, went up from 12 to 41 percent.

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7) "Pricing efficiency is concerned with the price-making role of the market system. It concerns how accurately, how effectively, how rapidly and how freely the marketing system makes prices which measure product values to the ultimate consumer and reflect these values through the various stages of the marketing system to the producer". In the case of olives the wholesale price of olive oil is considered as a first approximation of the value of olives via oil yield. See Victor B. Phillips, "Price Formation and Pricing Efficiency in Marketing Agricultural Products: "The Role of Market News and Grade Standards", USDA, Economic Research Service, Speech at Howard University, Washington, D. C. April 20, 1961.

Table 2 - Average olive and olive oil prices and marketing and processing margins in Tunisia, 1967/68 - 1968/69.

	Item	1967/68	1968/69
1)	Farm price of one ton of whole olives (Dinars) (weighted by regional olive production)	50	39
2)	Oil yield (percent)	22	22
3)	Wholesale price of oil (mill/kilo) (weighted by quality of oil produced)	245	239
4)	Value of oil per one ton of whole olives (Dinars) (220 kilos x price/kilo)	54	53
5)	Value of grignon per one ton whole olives (Dinars)	2	2
6)	Total value of oil and grignon (Dinars)	56	55
7)	Marketing and processing margins ($\overline{6}$) minus 1)$\overline{\ }$) (Dinars)	6	16
8)	Marketing costs as a percent of value of oil ($\overline{7}$)/ 4 $\overline{]}$) (percent)	11	29

These data also suggest that the national farm price level for olives is highly unstable in comparison with that for olive oil. This inconsistency can only be explained by lack of an adequate relationship between the farm price of olives and the corresponding value of olive products.

This disparity between the farm price of olives and the value of olive product(s) at the wholesale market in Tunisia is high when compared with that of other oil seeds produced in other countries. For example, during the 1964 crop year, an average ton of soybeans produced in the U.S. yielded the following prices[8]:

	Dollars
Average farm price of one ton of soybeans	97.72
One ton of soybeans yielded approximately 18 percent oil (or 180 kilos) worth about	45.19
One ton of soybeans yielded approximately 80 percent meal (or 800 kilos) worth about	59.14
The combined value of the two products is equal	104.33
Marketing and processing costs and profits	6.61
Marketing margins as a percent of farm price	7 percent
Marketing margins as a percent of wholesale value	6 percent

As shown above, the difference between the farm price of soybeans and the total value of soybean products (oil and meal) is small. The marketing margin represents only 7 percent of the farm price of soybeans in

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8) Agricultural Markets in Change, U.S. Department of Agriculture, Economic Research Service, Agricultural Economics Report No. 95.

comparision with 12 percent and 41 percent for olives sold in 1967/68 and 1968/69, respectively.

In summary, although sufficient knowledge regarding the farm price(s) of olives sold for oil processing in Tunisia does not exist, the prices shown appear to be inadequate and distorted in terms of the product value as measured by oil content. In general, producer's price is low in comparison with the value of oil at the wholesale market. Price distortion is evident by the lack of any clear association between the farm price of olives and corresponding quality -- estimated in terms of percent oil yield. This situation clearly suggests the need for an alternative olive pricing mechanism based on oil quality and value. A positive relationship between farm price and quantity and quality of oil produced is extremely critical in integrating farm production of olives with the ultimate market for olive oil. Adequate farm pricing techniques should encourage quality production and stimulate further commercialization of this important sector.

Olive Pricing Model

Although fresh olives are considered a homogeneous product from the standpoint of physical characteristics, their quality measured in oil yield is very heterogeneous. As indicated above, oil yield of olives harvested varies considerably.

An efficient pricing system for olives should be based on accurate information about oil yield and its value. If buyers and sellers of fresh olives were equally and adequately informed about the oil yield, prices and the cost of processing and marketing services they would be in a better position to arrive at efficient prices as well as equitable bargains.

More realistic farm-level olive prices could be obtained if better information concerning the above factors were available. Under such conditions olive price differentials should mainly reflect differences in oil yields and costs of transformation services.

Below is a price linkage formula which allows estimation of fresh olive prices that reflect the value of the oil content of the olive sold, its by-products, and reasonable costs of processing.

This formula is conceived as follows:

$$p^{o} = (p^{oo} \cdot Y) - C + G$$

Where:

p^{o} = price of one ton of fresh harvested olives,

p^{oo} = minimum wholesale price of one ton of olive oil,

Y = percent oil yield,

C = total cost of processing and transporting one ton of olives,

G = the value of olive by-product (grignon) which results from processing one ton of olives.

Variable and fixed factors affect this general olive pricing model. The variable portion in the olive pricing relationship is represented by $(p^{oo} \cdot Y)$ which includes the oil content of olives and its price. The wholesale price of olive oil varies not only from year to year but also among different qualities of oil. The quality of oil is expressed in terms of percent of free fatty acids in the oil produced. The lower the acidity the higher the quality and consequently the higher the value.[9] It is

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9) The commercial oil classification of olive oil produced by mechanical processes is as follows: extra; olive oil of absolutely perfect flavor, having a maximum acidity of 1.0 percent, fine; olive oil with the same characteristics as extra with maximum acidity of 1.5 percent, ordinary;

possible to know the quality of oil output in advance of olive processing. Quality depends primarily on the time lag which elapsed between the time of harvesting of olives and processing. Oil quality is also influenced, but to a lesser extent, by the method of handling the fruit in transportation and by storage both before and after processing. A higher quality oil can be produced if olive harvesting and processing operations can be coordinated.

Processing costs and the value of olive by-products (C and G) constitute important elements in the pricing of olives. These elements, however, are relatively stable in comparison with oil yield and price variations. If C and G were considered fixed, at least in the short run, the relationship between olive prices and oil yield and its value can then be easily established. In this case, a fluctuation in the wholesale price of oil will be accompanied with a fluctuation of similar magnitude in the price of olives.

Other factors contribute to the formation of olive prices at the farm level. Read accessibility and location of the olive grove with respect to the processing plant, and the availability of harvesting labor at the appropriate time could affect the price paid for olives. Price might also be influenced by credit arrangements and other institutional practices which dictate the type of relationship between grower and processors - dealers of the commodity. It would be desirable to include the effect(s) of these factors in estimating appropriate olive prices, but at the present time these factors are largely unmeasurable.

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9) slightly off-flavor olive oil with a maximum acidity of 3 percent, lampante; off-flavor olive oil. Super olive oil with a maximum acidity of 0.7 percent is also produced in Tunisia and receives a higher price than extra olive oil. See Olive Oil Processing in Rural Mills, FAO Agricultural Development Paper No. 58, Rome, 1956, p. 14.

Prices Attained

Table 3 shows a series of farm-level olive prices calculated under various combinations of possible oil yields and wholesale oil prices. These prices can be used as a base for market transactions between olive producers (sellers) and olive oil processors (buyers). Under equilibrium conditions a producer of olives would not accept a lower price for olives, of a certain oil yield and value, than the one indicated. At the same time a processor would not pay a higher price than the one indicated.

Given the wholesale price of oil, the value of fresh olives is determined by the oil content at the time of sale. The values increase by a fixed amount for each one percent increase in oil yield (reading the olive price columns). This amount varies, depending on the wholesale price of oil, from 2d200 to 3d000 for each additional one percent of oil yield. Similarly, the wholesale price of oil can be translated to an equivalent fresh olive price for olives of a given oil yield (reading the olive price rows). For example, a 10d000 change in the wholesale price of oil corresponds to changes of 1d500 in the price of olives having a 15 percent yield and 3d000 in the price of olives having a 30 percent yield.

Table 3 clearly indicates the possible wide range of olive prices which are derived from feasible oil yields and prices in the wholesale market. The difference between calculated maximum and minimum prices, at the indicated levels of yields and wholesale prices, can reach 57d000 per ton. Or the minimum price of olives can feasibly be equivalent to about one third of the maximum price.

Table 3 - Fresh Olive Prices Calculated Under Various Combinations of Oil Yield and Minimum Wholesale Price of Olive Oil.[1)]

Dinars per Ton

Percent Oil Yield	Minimum Wholesale Price of Olive Oil Per Metric Ton								
	220	230	240	250	260	270	280	290	300
15	28.0	29.5	31.0	32.5	34.0	35.5	37.0	38.5	40.0
16	30.2	31.8	33.4	35.0	36.6	38.2	39.8	41.4	43.0
17	32.4	34.1	35.8	37.5	39.2	40.9	42.6	44.3	46.0
18	34.6	36.4	38.2	40.0	41.8	43.6	45.4	47.2	49.0
19	36.8	38.7	40.6	42.5	44.4	46.3	48.2	50.1	52.0
20	39.0	41.0	43.0	45.0	47.0	49.0	51.0	53.0	55.0
21	41.2	43.3	45.4	47.5	49.6	51.7	53.8	55.9	58.0
22	43.4	45.6	47.8	50.0	52.2	54.4	56.6	58.8	61.0
23	45.6	47.9	50.2	52.5	54.8	57.1	59.4	61.7	64.0
24	47.8	50.2	52.6	55.0	57.4	59.8	62.2	64.6	67.0
25	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0
26	52.2	54.8	57.4	60.0	62.6	65.2	67.8	70.4	73.0
27	54.4	57.1	59.8	62.5	65.2	67.9	70.6	73.3	76.0
28	56.6	59.4	62.2	65.0	67.8	70.6	73.4	76.2	79.0
29	58.8	61.7	64.6	67.5	70.4	73.3	76.2	79.1	82.0
30	61.0	64.0	67.0	70.0	73.0	76.0	79.0	82.0	85.0

1) These prices are calculated at the farm level assuming the following average costs and revenues of the olive oil processing industry: (1) 1d500 cost of transporting one ton of fresh olives from the farm to the crusher, (2) 5d000 cost of processing one ton of olives, (3) 1d500 revenue from the sale of 300 kilos of grignon (olive by-product) at 5 millimes per kilo -- taxes on olives harvested (2d620 per ton) are paid by the olive grower.

Comparable olive prices can be derived under different cost and revenue assumptions (C and G). Any reduction in the cost of processing, for example, is translated entirely into olive prices. It should be added that olive oil processors (olive buyers) with low processing costs can afford to pay higher prices for olives than processors with high costs. This, of course, places low cost processors in a better competitive position to purchase olives and utilize their processing facilities over the olive harvest season. This point is critical in the economics of olive oil processing in Tunisia -- where there seems to be an excess of olive crushing capacity even in normal production years. Under competitive market conditions only the efficient processors would be able to pay the "equilibrium" price for olives and consequently obtain adequate crushing volume to sustain a profitable operation. Less efficient processors would be forced out of the market. Economics which might be achieved with large scale processing and full utilization of the processing capacity depend entirely on the ability of processors to obtain adequate volume in a competitive market such that "equilibrium" prices can be paid.

Conclusions and Policy Implications

In order to increase production and commercial marketing of olives and olive oil in Tunisia, olive production needs to be made profitable to producers in comparison with other occupations. The price paid to primary producers of olives is one of the most important elements of profitability. It provides production and marketing incentives (or dis-incentives). The total revenue obtained by an individual olive farmer is determined by the quantity of olives sold multiplied by the price per unit of sale.

Currently there is no clear system of pricing and price reporting of olive sold by primary producers. This situation exists despite the fact that the majority of olives produced in the country, especially by small holders of olive trees, are usually sold as a cash crop. Accurate data on prices received, quality of the product sold and terms of trade do not exist. However, scattered data are reported from time to time indicating the general level of prices and yields achieved in major producing regions. Obviously, these data can only be of limited usefulness due to the uncertainty attached to their accuracy, scope of application and consistency. This situation underscores an urgent need for better data on prices, yields and terms of trade in order to evaluate actual producers' return from olive sales.

Although it might be desirable to link primary producers of olives with the ultimate market (for olive oil) by making them process their own olives and sell them as oil, this linkage can not be achieved in Tunisia for various economic and structural reasons. The majority of the numerous small olive producers, who have limited financial resources and a need for quick cash income, prefer to sell their olive production as a cash crop. The marketing of olive oil requires considerable cash expense, time, and storage facilities which are beyond the means of most Tunisian olive farmers. Only a small number of the more prosperous producers can afford to undertake processing and marketing of the final product, olive oil. Hence, it is expected that the Tunisian olive production and processing industry will continue to have two distinct markets for the product, i.e., one for olives and the other for oil. Any step toward market-

ing improvements for the entire sector must recognize the existence of these two markets and establish a definite link between them. Pricing in the fresh olive market ought to be based on the value of oil in the olive market, minus the cost of transformation.

The available regional price and yield data for the period 1967/68 - 1968/69 indicate that a considerable number of discrepancies exist in the current olive pricing system. These discrepancies can distort quality production and retain inequity and inefficiency within the industry. Furthermore, the welfare and participation of primary olive producers cannot be improved if the current olive pricing practices persist. To remedy this situation an alternative olive pricing mechanism must be initiated. This mechanism can be established simply on the basis of increased availability of accurate information regarding oil yields and the value of olives as they are offered for sale.

Specific policy measures need to be taken in order to implement a new pricing system. First, the re-establishment of an organized market center for olive trading might provide a better medium for reaching a realistic pricing in all producing regions. The purpose of this market, in addition to commodity trading, would be to (a) bring a maximum number of buyers and sellers of olives together to assure an adequate degree of competition, (b) enhance the farmers' bargaining power and consequently achieve higher olive prices and regulate, over time and space, the flow of olives for oil processing, and (c) collect and disseminate relevant market information on prices achieved, quantities and qualities of olives traded and terms of trading. This market could be jointly supervised by parties representing the government, olive producers and processors.

Second, in order to insure equitable pricing, reliable olive testing to determine oil yield and quality must be performed. Specific testing

procedures, techniques and supervision can be introduced to achieve results useful for both buyers and sellers of olives at a nominal cost. The results of testing can be used to estimate a minimum producer's price according to a formula such as that proposed in the text.

Finally, it must be recognized that any improvement in olive pricing and marketing cannot be attained without the full cooperation of all producers, processors, wholesalers and other private and public organizations concerned with development of the industry. Adequate understanding of the kinds of relationships which exist among these groups is a necessary prerequisite for introduction of an effective pricing policy. Sufficient economic incentives must be closely considered by all concerned in implementing such a policy.

APPENDIX

Producer Prices for Olives and Olive Oil in Other Countries[1)]

Spain

Spanish olive and olive oil marketing regulations are perhaps the most comprehensive and effective among the olive oil producing countries of the Mediterranean region. Prices and price determination techniques are well specified to maintain a minimum guaranteed price for olive producers and reasonable returns to processors and traders of this commodity. At the wholesale level, minimum producers' prices and maximum marketing and processing margins are fixed in accordance with the value of the final products, mainly oil, in domestic and international markets. A maximum retail margin is also fixed for olive oil sold in small and bulk quantities. This margin also applies for residue olive oils and other seed oils. These extensive price regulations have undoubtedly helped Spain in maintaining an equitable pricing policy for olive oil and in preserving its position as the primary exporter of this special commodity despite rising costs and increasing competition.

Olive Pricing Regulations

Municipal Yield Committees are formed each year in olive producing regions in order to supervise and enforce specific standards for the

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1) Based on International Olive Oil Council, National Olive Oil Policies, N. 1081 Doc. no. 4, 2nd Updating 30 October 1969.

determination of oil yields and corresponding minimum farm-level olive prices. The nature and role of these committees in organizing the Spanish olive marketing can be summarized as follows:

(1) The Provincial Agronomic Directions of the Ministry of Agriculture are authorized to establish Municipal Yield Committees. A committee is normally composed of the chief of the local farmers Union who acts as president, one representative of the sellers and one representative of the buyers of olives.

(2) The main functions of a committee are (a) to decide appropriate olive production zones in accordance with differences in oil yielding varieties produced within the municipality, (b) to determine the oil yield of different olive categories which are traditionally produced in the municipality and (c) to indicate the farm-level price for each olive category -- defined in terms of oil yield, quality and the corresponding minimum wholesale price of olive oil.

(3) The oil yield is determined by either (a) unanimous agreement between buyers and sellers of olives, (b) an oil yield test undertaken under the supervision of the Committee, or (c) the Agronomic Direction when it is not possible to conclude an agreement within the Committee.

(4) The price of each category of olives is determined every two weeks by the Committee in terms of its corresponding oil yield and by applying the following formula:

$$P = AR - 51$$

where

P = price per metric quintal of olives,

A = minimum guaranteed price of one kilo of olive oil, prescribed by the government according to quality (i.e. free fatty acid content),

R = yield of oil per metric quintal olives,

51 = maximum difference between crushing margin, including profits, and the value of by-products obtained from crushing one quintal of olives (51 Peseta = 3.825 Tunisian Dinars).

Olive prices fixed in this manner by the Committee are considered as a minimum. Processors (buyers) can grant producers extra bonuses depending on other quality factors such as taste and cleanness.

The General Commissariat's purchasing prices of olive oil (A) are set for each month of the production season. The fixed prices increase each month by fixed increment in order to encourage the storage of olive oil over the marketing year. Often, the General Commissariat has paid a higher price for olive oil purchased than the indicated minimum announced in the beginning of the production year.

The minimum price fixed for different qualities of olive oil in Spain since 1963/64 are shown in the following table.

Italy

Both Italian and EEC olive and olive oil pricing and marketing regulations are designed to (a) meet the rising costs of olive production, (b) maintain an adequate income for olive producers and (c) protect local production against cheaper imports of olive and other seed oils.

Quality	Price Dollars per metric ton[1] CROP YEARS 1963/64	1964/65	1965/66	1966/67	1967/68	1968/69
Virgin extra (max. acidity 1 percent)	450	500	542	542-575	493-510	500-521
Virgin fine (max. acidity 1.5 percent)	442	492	533	533-567	486-508	493-514
Virgin ordinary (max. acidity 2.5 percent)	417	467		508-542	464-487	471-493
Virgin ordinary (max. acidity 3 percent)	408	458				

1) The rate of exchange of Spanish Pesetas for U.S. dollars is as follows: 1 U.S. Dollar = 60 Ptas until November 1969, 1 U.S. Dollar = 70 Ptas as from November 1967.

The current EEC market organization specifies an "indicative production price" which is guaranteed to all olive oil producers in the Community, mainly Italy. This price is set at a "fair" level to ensure the producer a minimum income comparable to the incomes in other sectors of the EEC economy and also to maintain the Community's production level. The difference between the indicative production price, which is presently fixed at about double the international market price of olive oil, and another lower "indicative market price" is paid directly to primary producers in the form of an income support. Normally, olive oil is sold by producers at a price between the two indicative prices.

Over the last four years the indicative production price guaranteed for olive oil producers by the EEC have been fixed at 1150 dollars per metric ton. This price has been maintained irrespective of actual prices achieved for olive oil sold in both domestic and international markets.

EEC Olive Oil Price Structure and International Prices - Unit of account/metric ton = 1 U.S. dollar.

Price	1966/67	1967/68	1968/69	1969/70
Indicative production price	1150	1152	1152	1152
Indicative market price	800	802	721	721
International price (Spanish ports)	689	681	666	685