

- Van den Berg, C. 1974. Simultaneous recovery of protein and oil from groundnuts. *Proc. 4th Intern. Congr. Food Sci. Technol.*, Madrid, pp. 23-27.
- Vix, H. L. E., H. K. Gardner, M. G. Lambou, and M. L. Rollins. 1973. Ultrastructure related to cottonseed and peanut processing and products, pp. 212-230. *In* G. E. Inglett, ed., *Seed Proteins*. AVI Publishing Co., Westport, CT.
- Vix, H. L. E., J. Pominski, H. M. Pearce, Jr., and J. J. Spadaro. 1967. Development and potential of partially defatted peanuts. *Peanut J. and Nut World* 46(3): 10-11; 46(4): 10-11, 18; 46(6): 10-11.
- Wolf, W. J. and J. C. Cowan. 1971. Soybeans as a food source. *CRC Critical Reviews in Food Tech.* 2:81-158.

Chapter 19

PEANUT MARKETING

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The marketing process for peanuts in the United States is best understood in the context of the governmental regulatory environment. All segments of the peanut industry must be keenly aware of the specific procedures and practices which are required in the marketing of peanuts. The laws which govern contracting, poundage quotas, sampling, grading, storage, shelling and packaging are reviewed in this chapter and in Chapter 15.

The marketing of peanuts should be seen as an extended process which includes the farmers' planting and contracting decisions, the harvesting and delivery of the peanuts to a peanut handler or sheller, the handling and shelling of the peanuts to conform to quality requirements and potential buyers' specifications, and finally the sale and distribution of the peanuts into the marketplace.

In recent years, the peanut industry has adopted a classical view of product definition, i.e., one in which the specific needs of the marketplace have been established. Moreover, changes in consumption patterns, new peanut varieties and developments in processing technology have demanded marketing flexibility. The market itself has three sectors: (1) domestic edible peanuts, (2) export peanuts, and (3) crushing stock peanuts. Since 1980, these markets have been influenced more than ever by changing supply and demand factors which directly influence price.

Because of market factors as well as weather and production variables, each segment of the market is faced with a degree of risk. Farmers, shellers, and processors face different uncertainties, but all try to make marketing decisions which will reduce some of their risk. In making these decisions, the farmer, sheller or processor must evaluate the interrelationship between the factors and stages in the entire marketing process.

THE ROLE OF THE UNITED STATES GOVERNMENT

Laws and Regulations

In 1938, the United States Congress passed the Agricultural Adjustment Act which first established the government's role in the United States peanut industry. Under this legislation, the United States government established an acreage quota system whereby designated farmers were permitted to grow peanuts on a specific number of acres. Except for a brief period during World War II when everybody was encouraged to grow peanuts, the United States government limited the amount of peanuts grown in the United States to the quantity produced on approximately 1,610,000 acres. Beginning in 1938, the United

States government supported the production from these quota acres at 90% of parity (with the minimum set at 75%).

In the early years of the program, most of the peanuts grown in the United States outside of the Virginia-North Carolina area were spanish type peanuts. Due to the relatively low yield of spanish type peanuts as well as the lack of modern agronomic techniques, the production of peanuts from the quota acres was just sufficient to satisfy consumption patterns. The government maintained the 90% of parity benchmark for several years during which time there occurred significant improvements in growing techniques as well as development of higher yielding cultivars of peanuts. With improved production techniques, the farmer was able to increase his yield per hectare. However, because of the government's price support program, the mechanism of a free market could not operate and the increased supply did not result in lower prices. The costs of production used to calculate parity by the government continued to increase, and as a result, the farmer realized an ever-increasing price for his continually increasing production of peanuts. Eventually the government found itself with large supplies of peanuts, which prompted reductions in the percentage of parity granted to the farmer.

The authors of the 1977 Agriculture and Food Act recognized the major changes that had occurred in the United States peanut industry, particularly the shift from spanish type production to runner type production which had resulted in a significant increase in yield. Accordingly, the parity concept was eliminated with respect to peanuts and in its place a program was established wherein a minimum support price would be set every year by the Secretary of Agriculture. Moreover, the government introduced the concept of quota peanuts versus non-quota/additional peanuts. Under this system, the government attempted to limit the quantity of peanuts available for the domestic market and supported at a higher price to a quantity which could reasonably be consumed by the United States market and which would not result in a burdensome surplus to the government. Non-quota peanuts under this program were supported at a much lower level, roughly equivalent to the world oil/meal market levels.

By making a distinction between quota and non-quota peanuts, the government also recognized the role the United States could play in exporting its surplus peanuts. Prior to 1977, shellers could only sell to the domestic market since the parity support levels were well above world market levels for peanuts. Under this program, the Commodity Credit Corporation (CCC) made available through auction those surplus peanuts the government had bought under the support program but which it had been unable to resell for domestic use. Shellers were usually able to purchase these surplus peanuts for export at levels slightly above oil crushing levels. However, since these peanuts became available only late in the crop year after foreign manufacturers of peanut products had already covered most of their needs, the United States remained a residual supplier of peanuts in the world market during the first 40 years of the program. In 1977, with the advent of the non-quota (additional) peanuts, shellers were then able to contract for peanuts in late spring and early summer at a level which allowed them to be competitive in the world market.

Despite a limited production and the high price for peanuts, United States' consumers accepted the peanut and made peanut butter a staple of the Amer-

ican diet. It is uncertain whether or not the high support price of peanuts under the program caused a limit to the consumption of peanuts in the United States market. However, there is no question that the peanut program until 1977 prevented the United States from taking the lead as an exporter of edible peanuts to the world market. Since the 1977 legislation, the United States has been able to increase its peanut exports to a level where in 1979 it supplied the world market with 50% of its edible peanut needs.

With respect to quality, the United States Department of Agriculture (USDA) has played the major role in establishing the grading qualities of peanuts as we know them today. From its inception, the USDA has attempted to standardize the quality of peanuts which enter the edible channels. With improved research and sampling techniques, the quality of edible peanuts has improved significantly.

Marketing Agreement of 1965

In 1965, in response to a worldwide concern for the carcinogenic effects of aflatoxin, the United States peanut industry undertook to regulate itself and signed a marketing agreement for peanuts. This highly successful attempt at self-regulation has protected the United States peanut industry from criticisms by the national health organizations.

The Marketing Agreement regulates both the incoming and outgoing quality of peanuts. With respect to incoming quality, the Marketing Agreement divides farmers stock (peanuts in the shell received from the farmer) into Segregations I, II, and III peanuts according to the damage as well as the visual presence of *Aspergillus flavus*. Segregation I peanuts are low in damage and are free from visible *A. flavus*. These peanuts are available for human consumption. Segregation II and III peanuts, on the other hand, are higher in damage and, in the case of Segregation III, have visible *A. flavus*. Unless an extreme shortage of peanuts exists, Segregation II peanuts are not permitted to enter the domestic edible channels and must be crushed for oil. Segregation III peanuts must always be crushed. This is the first method by which peanuts with a potential high aflatoxin content are diverted from the edible channels.

After shelling, peanuts are sampled to test their aflatoxin content. If after testing they are found to have more than 25 parts per billion (ppb) aflatoxin, the peanuts may be blanched so as to remove aflatoxin. If after blanching, the peanuts still have more than 25 ppb aflatoxin, they are classified unfit for edible use and are subsequently crushed. These regulations coupled with the requirement for positive lot identification have been responsible for a sustained improvement in the quality of shelled edible peanuts and have provided an effective means for monitoring the industry.

The Marketing Agreement has been successful not only in protecting the quality of peanuts, but also in indemnifying the United States shellers from potentially large losses due to peanuts which are purchased and which subsequently are found to be high in aflatoxin. Under the indemnification program, shellers contribute a certain fixed amount for every ton of farmers stock peanuts they purchase. This amount is placed in a fund directed by the Peanut Administrative Committee (PAC). The PAC purchases insurance with these funds.

When testing identifies a peanut lot with higher than 25 ppb, the sheller is permitted to blanch the peanuts. The blanching is paid for by the PAC indemnification program. If the blanching step is not successful in reducing the aflatoxin content to an acceptable level, the peanuts are fully indemnified and crushed for oil and meal. Each crop year is considered individually and, therefore, new assessment rates, indemnification fund and insurance package are established for each new crop.

The United States Department of Agriculture

For more than four decades, the involvement of the USDA in the regulation of the production and marketing of peanuts has been substantial. Under current farm legislation, the Secretary of Agriculture is specifically charged with the administration of the peanut program. The Secretary utilizes the Agricultural Stabilization and Conservation Service (ASCS) as the arm of the USDA to establish regulations under the law and to administer the implementation of all of the provisions of the act.

Local ASCS offices in each county issue farm numbers and poundage quotas for each peanut allotment or quota holder. Detailed records of production along with the issuance of marketing cards of production are handled by each local office. These local offices also supervise, maintain, and approve all of the contracting of the non-quota portion of production in each county. The local ASCS offices are under the supervision of the state ASCS offices which, in turn, report to the national office in Washington, D. C.

As prescribed under the act, ASCS also contracts with three area associations to carry out the price support function of the law. One association covers the Virginia-Carolina area, one the southeastern area, and another the southwestern area of production. These area associations make loans available to farmers for support price levels for quota peanuts and supervise the contracting and final disposition of non-quota (additional) peanuts. These associations administer and carry out the regulations issued annually by the headquarters of ASCS in Washington.

The federally funded CCC provides the financial means of supporting the peanut crops and the excess production and diversion of same for crushing for oil. This diversion of surplus peanuts resulted in losses over the years, and brought about the changes in the peanut program included in the Agriculture and Food Act of 1977. Further revisions and changes are anticipated in the future in which the government would no longer be so heavily involved in the peanut industry.

Another arm of the government that is involved in peanuts is the Foreign Agricultural Service (FAS). FAS has been solicited by grower groups to help in the promotion of peanuts in overseas markets. This program has been in effect for the past 10 years and has worked in conjunction with activities of the National Peanut Council export committee. This promotion has been designated to help increase peanut usage in foreign markets. FAS has provided personnel for this endeavor.

THE MARKETING PROCESS

Contracting

Contracting peanuts prior to physical delivery at a receiving station is a relatively new procedure for the peanut grower. As mentioned above, it first came into existence with the 1978 peanut crop, which was the first crop year covered by the two price support program established under the farm legislation established for crop years 1978 through 1981. This program continued previous control on the number of hectares of peanuts that could be planted in the United States. However, it went one step further in reducing the federal government's financial risk by limiting the number of pounds of peanuts grown on this acreage which would be eligible for support prices for edible peanuts. These peanuts, known as quota peanuts, were supported at the price level of \$463/metric ton (\$420/ton), which was considered high enough to assure the grower an acceptable profit. The balance of the peanuts produced, referred to as additional peanuts, was supported at a price level of \$275/metric ton (\$250/ton) which was roughly equivalent to the anticipated world market for peanut meal and oil. Although this relatively low price was considered unacceptable by most growers, the peanut portion of the farm bill did allow growers to contract their additional peanuts for crushing or export with handlers at prices above the \$275/metric ton support price provided these contracts were signed by June 15 of each crop year.

Based on the acreage allotment in 1978, each grower could expect to have about 80% of his crop eligible for quota support prices and 20% of his crop eligible for additional support prices. For each of the next 3 crop years (1979, 1980, 1981), the quota pounds would be reduced by approximately 5% each year. Thus, for the 1981 crop, approximately 65% of a grower's peanuts were quota and 35% additional peanuts. Each succeeding year, the peanut grower saw a reduction in his farm income unless he obtained a contract price for his additional peanuts somewhat closer to the support price being paid for quota peanuts. The completion of the 1981 crop brought an end to this 4 year peanut farm program.

The farm bill passed in 1981 abolished acreage allotments for peanut and established quota peanut poundage allotments for all previous peanuts growers. For crop year 1982, this poundage was set at a maximum of 1,088,633 metric tons (1,200,000 tons). This poundage will be phased down to 997,913 metric tons (1,100,000 tons) for crop year 1985. While a grower had approximately 65% of his crop meeting quota requirements for his 1981 crop, the new bill reduced his quota peanuts to about 53%.

Under the law, new growers of peanuts are allowed to begin producing peanuts with certain restrictions. The farm bill provides that any peanuts produced on a farm that does not have a quota poundage allotment or produced on a farm in excess of the quota poundage allotment shall be classified as additional peanuts. These additional peanuts are only eligible for additional support price set at \$220/metric ton (\$200/ton) for 1982 and must be crushed or exported. An additional peanut contract with a handler must be signed by April 15 of each crop year. Since new growers of peanuts are not eligible to participate in the production of quota peanuts for domestic use which are supported at \$606/

metric ton (\$550/ton) for 1982, they are limited to selling their peanuts in the secondary markets for export or crushing.

A significant change affecting contracting under the new peanut program is the movement of the contracting deadline from June 15 to April 15. This change was made at the request of peanut growers to allow them to know the price they might receive before they planted their crop. This concept was good in principle but problematical from a marketing viewpoint because export markets do not traditionally develop until July or August. Since acreage is no longer controlled, an unlimited number of acres potentially are available to be planted. Therefore, foreign buyers feel a greater opportunity exists to buy United States export peanuts at price levels considerably less than quota support price and less than in the past when acreage restrictions were required by law.

With the 1982 crop, the differential between prices acceptable to growers and prices desired by foreign buyers appeared to be great. A difference of several hundred dollars per metric ton existed between the two. For the past 4 crop years, contracts have been negotiated between grower and handler at a fixed price. The majority of the 1982 additional peanut contracts were drawn up with the price to be established at a later date as the markets develop. This has occurred because the April 15 deadline is too early for price levels to be established. Growers insist they cannot produce peanuts at the prices offered by handlers on April 15. Handlers insist that their financial risks are too great to enter into contracts at fixed price levels agreeable to growers by April 15. Moreover, there is no market mechanism for hedging peanuts. Therefore, if foreign markets do not improve to levels comparable to domestic prices, financial insolvency could be the result for contracting at fixed prices above actual foreign market levels.

The growers' only recourse if favorable prices do not develop for additional peanuts at time of harvest is to put the peanuts into the government loan program and receive \$220/metric ton (\$200/ton) in 1982 with the chance that the peanuts might eventually be sold at higher levels. If this were to occur, additional money could be received by the grower from the government pools.

Beginning with the 1978 crop, only contracts for additional peanuts were signed by growers. As each succeeding year passed, the quantity of quota peanuts decreased. This caused more emphasis to be placed each following year on contracting quota peanuts for the domestic market at the same time additional peanuts are contracted. The growers have not been very receptive to the contracting of their quota peanuts unless generous premiums are offered above the government support price for quota peanuts. The situation is complicated by the fact that the consumption of edible peanuts domestically is about three times that of the export market for United States edible peanuts.

While the quantity of additional peanuts has grown steadily during the past 5 years, edible export consumption has remained almost constant. Excess quantities of additional peanuts have been produced each year which have no markets available to them except for crushing into meal and oil. This fact alone has caused peanut handlers to insist that a portion of a grower's quota peanuts be contracted at the time of contracting his additional peanuts. Reluctantly, the growers have acquiesced to contracting their quota peanuts. Often these

quota peanut contracts have not been at a fixed price. Usually these contracts designate that the particular handler will get the quota peanuts provided the handler pays a price equal to that offered by competitor handlers at the time of delivery.

The first obligation of the peanut grower in the contracting period is to obtain his farm poundage from his county ASCS office. Of course, if the farmer has not produced peanuts before 1982, he will have no quota poundage. Once the grower has his quota poundage, he is in a position to obtain the best price available on any additional peanuts he may contract to plant. Normally a grower will contact the handler with whom he usually does business before checking other handlers' additional contract offers. These offers are publicized by the handler via producer meetings, news media, personal contacts and letters to producers. The offerings may vary from handler to handler, which gives the producer any number of options as to the quantity, value and terms of delivery for additional peanuts he may wish to contract. Once a contract is signed, it is reported to an ASCS office.

At the time of harvest, the grower obtains from his county's ASCS office his marketing card and identification cards which must be presented to the handler at time of delivery of each load of peanuts. The marketing card shows the pounds of quota and contract additional peanuts available for each farm. Any pounds produced over the quantity recorded on the marketing card must be placed under the CCC loan program at the additional loan rate.

Harvest

Peanuts mature and are ready to harvest during the month of August in Texas, early September in the southeast, and early October in Virginia, North Carolina and Oklahoma. When the grower determines that the maturity of the peanuts is at its greatest, he goes into the fields with digging equipment which removes the fruit from the soil while it is still on the vine and inverts the mass exposing the peanuts to sunlight. The peanuts remain in the field with the rows inverted until the moisture in the seed reaches about 21%. In some sections of the southwest where artificial drying is not used, the peanuts are bagged and left in the field until the moisture reaches the maximum allowed for purchase under the USDA's Marketing Agreement regulations. In the southeast, the maximum moisture level is 10% and in the southwest and Virginia-Carolina areas it is 11%.

Today, most peanuts are artificially dried using hot air. These peanuts come off the vine at about 21% moisture and are loaded in dryer wagons each of which holds 4 to 5 tons of peanuts on a dry weight basis. Hot air, not exceeding 35° C (95° F), is blown through a perforated bottom up through the peanuts until the moisture level reaches 10%. These peanuts are then ready to be delivered to market.

Delivery and Sampling

The dryer wagons are pulled to the peanut receiving station by truck at which time the farmer presents his ASCS marketing card to the handler. This card, which shows that the grower is entitled to sell his peanuts, includes the

grower's name, farm serial number, address, pounds of quota peanuts (if any), and pounds of additional peanuts.

The standard method adopted in the mid-1960's for sampling inshell farmers stock peanuts is the pneumatic probe sampler. The sample is taken using this piece of equipment by an employee of the Federal-State Inspection Service (FSIS). Depending upon the type container holding the peanuts (dryer wagon, truck, semi-trailer), a certain number of probes are made in a particular pattern. These patterns are changed randomly to prevent the "doctoring" of the container with any type foreign material. Most handlers require that a separate sample be pulled from each load of peanuts. However, the FSIS will allow one sample to be pulled for every two loads if the handler so desires. Most handlers insist that each and every load be sampled to protect the handler's future inventory. In the southwest where peanuts are sometimes brought to the buying point in bags, a probe sample is taken. At a few locations a spout sampler is used for sampling bulk farmers stock peanuts (for a detailed discussion of sampling and grading techniques, see Chapter 15).

Grading

The government price support for peanuts, either quota or additional, represents an average price of all peanuts grown in the United States. A grower may receive either a premium or a discount to this average depending upon the grade factors established for his load of peanuts. All peanuts are graded by an FSIS employee who establishes values for the absence or presence of *A. flavus*, percent sound mature kernels, percent other kernels, percent splits, percent moisture, percent foreign material, and percent damage. The absence of visible *A. flavus* is probably the most important determination made on the peanuts. Peanuts are not eligible for support as quota peanuts if any visible *A. flavus* is present. If any is found, the peanuts are downgraded to support price for additional peanuts, which represents a \$386/metric ton (\$350/ton) reduction in value (1982 crop year). Presence of *A. flavus* in a significant portion of a grower's crop can result in tremendous financial losses to the grower.

If *A. flavus* is not detected, the next most important factor is the sum of the percentages of sound mature kernels and splits. This sum, in combination with the percentage of other kernels, determines the value per ton of the peanuts (usually in the range of \$606/metric ton (\$550/ton) for quota peanuts). The other factors such as foreign material over 4%, moisture over 7%, damage over 1%, loose shelled kernel content, and split percent over 4% decrease the value per metric ton usually by about \$2 to \$20 per metric ton. If the various percentages for these factors are not over the maximum allowed, no deduction is made from the base value.

Storage

Once the grade has been determined for the peanuts, they are ready to be stored. As the peanuts go into storage, they are usually sprayed with a solution of malathion for insect control. The most common type of warehouse building is a metal storage building built upon a concrete slab. These buildings are thoroughly cleaned of old peanuts and sprayed with malathion before any new

crop peanuts are introduced. Usually, the warehouses are equipped with overhead ventilation fans which remove excess heat from above the peanuts and prevent condensation and potential mold. Many warehouses are equipped with aerosol insect fogging systems which control any residual insect population which might develop over the peanuts. In recent years, many warehouses have been equipped with humidistat controlled aeration fans which help hold the moisture content of the peanuts. Keeping the moisture level as high as possible helps prevent excessive split production as the peanuts are shelled and reduces the shrinkage in product yield associated with shelling peanuts. (For a discussion of ventilation and aeration techniques, see Chapter 15).

Shelling and Packaging

As the peanuts come into the plant for shelling, foreign material and loose shelled kernels (LSK) are removed prior to shelling the farmers stock peanuts. After the hulls are removed from the peanuts, the peanuts go through a number of quality control machines for removal of small traces of foreign material. A rough cut is made to separate the splits from the whole seed (kernels) prior to the electronic sorting machines (ESM). The ESM's are usually the final step before sizing. These machines remove color damaged seed which reduce the final quality of any peanut product. Damaged peanuts reduce the shelf life of the peanut product as well as increase the possibility of potential aflatoxin problems. By removing these damaged peanuts, it is not uncommon to produce a final product under 1 ppb aflatoxin content.

Special machinery separates the peanut seed by size. Runner peanuts are separated into 4 whole seed sizes (jumbos, mediums, number ones and small whole seeds). Spanish peanuts are separated into 3 whole seed sizes (jumbos, number ones and 2000 count). Virginia peanuts are sold in their shells in 2 sizes (jumbos and fancies), but if shelled, they are separated into 3 whole seed sizes (extra large, mediums and number ones). In the process of shelling and separating the peanuts, some seed split. These splits are segregated and marketed primarily to the domestic peanut butter industry.

It is up to the shellers to assemble the shelled peanuts into lots, usually in railcar or truckload quantities. Each lot is assigned a number for positive identification. The identity of these lots is maintained until that lot reaches its final point of usage by a processor. The most common container used in the United States for packaging peanuts is the 50 kilogram (110 pound) burlap bag or the 907 kilogram (2,000 pound) corrugated box. In the last few years, the loading of 86 metric ton (190,000 pound) bulk rail cars has begun. Results of this method have been promising and a trend toward more bulk shipments of product will probably develop. Labor and packaging material savings should encourage this development.

Once packaged, the peanuts move to the customer for processing. Sometimes, the customers have the peanuts sent directly to commercial blanching operations for removal of the skins, if they do not perform this task themselves. Unless the peanuts are going directly to processing or blanching, they are delivered to commercial cold storage warehouses for intermediate storage until they are needed for processing into finished products such as peanut butter and salted peanuts.

PRODUCT DEFINITION

At one time shellers thought of their product strictly as "shelled peanuts". It soon became clear that various processors preferred certain varieties or sizes because of the particular attributes of the end product involved. For example, some roasters and salters liked spanish jumbo peanuts for their flavor and their ability to retain their skins during processing and packaging. Certain candy manufacturers insist on very uniform size and shape because of coatings applied to the peanut.

In recent years, shellers have assumed a more classical marketing orientation. This has involved looking at the needs exhibited in the marketplace. Next, the product is defined in terms of the market's needs. It could be argued that the product has "grown" over the years to include special screening for size or shape, packaging or shipment methods, scheduled shipment to avoid excess storage, technical assistance, and market information. In other words, the service aspects of the product have become almost as important as the peanut itself.

An important distinction in product definition between export and domestic markets is in identification methodology. Foreign markets have long used "count per ounce" as the method of identifying and controlling size. This has been formalized in the Federation of Oils, Seeds and Fats Association (FOSFA) trading rules and recognized throughout the world, other than the United States, as the standard. In the United States largely because of the Marketing Agreement (see above) and the standardization of the sizing screens themselves, screen size and grade definition is the accepted identification method.

It so happens that most of the standard United States grades conform to the typical FOSFA count designations. The United States runner medium, for example, fall through a 21 screen (8.39 mm, 21/64" slotted screen) but ride an 18 screen (7.14 mm, 18/64" slotted screen) and are sometimes designated as a "plus 18 minus 21" cut which, coincidentally, is within the FOSFA "40/50 count" limits. It is estimated that almost all export peanuts, although not usually sold under a FOSFA contract, are designated by count rather than by United States grade.

Over the years, consumption patterns have changed dramatically. Moreover, the industry has seen the development of new peanut varieties, changes in finished product mix, and improvements in processing technology. Until the late 1960's, spanish type peanuts were the predominant type used in peanut butter. With the wide planting of the runner type, peanut butter manufacturers switched to that type, (i.e. the introduction of the Florunner variety in the early 1970's hastened the acceptance of the runner type) but used almost exclusively the larger whole seeds—mediums, and jumbos. Salters have also switched to the runner types, although spanish and virginia types are favored as well.

With higher peanut prices over the last decade, processors have looked for ways to lower their ingredient costs in order to maintain retail shelf prices at a relatively steady level. Roaster-salters have, in some cases, moved to slightly smaller sizes or have switched from one type to another. Peanut butter manufacturers have started using more splits or the runner number one (16/18 screen) peanut. This shift in consumption pattern has tended to narrow the

price differential in various grades to the actual mechanical difference in their values for peanut butter. For example, runner ones lose proportionately more weight in blanching and also contain less oil than splits or mediums and therefore are reduced in price by an amount roughly equal to the extra blanching loss and oil value.

Export market consumption patterns have also changed over the years. Canadian peanut butter manufacturers, for example, have become important buyers of splits because of the large price differentials which have developed. Some European users have moved from virginia jumbo to fancy for their inshell needs also because of price and availability. (Export channels are still a very important outlet for jumbo inshells, however). Virginia twos, spanish 2000 count and runner 14/16 screen peanuts have also found homes overseas in recent years although they were unknown prior to 1978.

DESCRIPTION OF THE MARKET

Like many agricultural commodities, peanuts have several "marketplaces" as they progress from the field to their final form. These might be categorized as farmers stock markets, sheller markets, and processor markets. The sheller market can be further divided into domestic, export, and crushing subsections.

For many years peanut farmers were not required to pay much attention to the normal supply and demand functions of the farmers stock marketplace. When supplies were adequate, the support price actually acted as a ceiling as well as a floor for prices. With the Farm Bill of 1982, this changed dramatically. In fact, the disruptive influence of the 1980 crop disaster had altered this pattern even before the legislated changes, which will bring supported quota production into line with expected consumption during the 1982 through 1985 crop years.

Growers must now follow market conditions more closely with the realization that prices may differ prior to harvest and during the harvest period. In 1980, for example, prices exceeded the support level in the southeastern region by \$55 to \$110 per farmers stock metric ton, but escalated to over \$1,100 per metric ton in the southwest and Virginia. In 1981, farmers stock was contracted before planting at \$771 to \$826 per metric ton, but fell after that to the support level by the end of harvest in Virginia and Oklahoma.

For the domestic, export and oilseed markets, the dominant influencing factor is that of supply and demand. Under the legislation beginning with the 1982 peanut crop, it is expected that supply will initially exceed demand. Two or three years into this program, we expect to find a balance between supply and demand. Should these predictions materialize, they will cause depressed prices and more sales to be made for near-term delivery. In an oversupplied market, shellers, while wishing to sell forward deliveries, generally find buyers who are in no hurry to conclude their purchases. With an abundance of supply, buyers believe that the market price will be stable if not depressed. Therefore, they buy as they need peanuts, their raw material inventories tend to be lower, and the sheller carries peanuts at values which may not yield a profit. The reverse, of course, occurs when demand exceeds supply.

Domestic Market

The domestic market structure is uncomplicated. Sales are generally made on a cents per pound basis at a specified point of shipment (usually either the shellers' plant or a cold storage facility). These terms are referred to as FOB or "free-on-board". Shipments are usually 20 metric ton (44,000 pound) trucks or 45 to 63.5 metric ton (100,000 to 140,000 pound) railcars. Terms of sale are most frequently cash upon receipt of invoice. Business is accomplished either directly from shellers to manufacturers or through peanut brokers to manufacturers.

For broker business, the sheller pays 1% of the sales price to the broker. The broker provides market information to both shellers and manufacturers and serves as a dampening factor in fluctuating markets. The amount of business which is consummated through brokers varies among shellers and among manufacturers. Some of the factors which influence the amount of business accomplished by shellers and manufacturers through brokers are the size of the sales or purchasing department, the value of information provided by the broker, and the belief that the broker is actually able to secure a more favorable price for either the buyer or the seller.

There are many factors that affect supply and demand and thereby influence the domestic peanut market. Weather can certainly upset the supply/demand picture. However, it also causes other less obvious influences on the market. Even if the basic structure of supply and demand is not affected by the weather, the shelling yields, that is, the amount of jumbos, mediums, ones and splits which are taken from a metric ton of peanuts, may be changed by unusual weather. Quality is another factor which is affected by weather. This can cause changes in prices throughout the market. The economy also appears to influence the domestic market as prices on final goods from the manufacturer have been shown to change the consumer demand pattern. Based on the experience of the 1980 crop disaster, the peanut industry has observed that when price-sensitive products (such as salted and roasted nuts) lose market share, they regain that lost market share very slowly.

Exports also influence the domestic market. In years when the export market is very strong, some quota peanuts are taken from the domestic market and sold into the international market. Other minor influences on the market are the timing of the sales and cold storage availability. Generally, shellers run more shifts for fall production and are thereby willing to discount prices in the fall. Cold storage is not always available to store domestic peanuts. Therefore, the market is somewhat influenced by a lack of cold storage space for peanuts.

In summary, the peanut market, which is based on supply and demand, is also influenced by contributing factors. The structure is uncomplicated and sales are made through brokers and/or direct to manufacturers. The international market, while sharing many of the characteristics of the domestic market, is structured somewhat differently and is influenced by additional factors.

International Market

Under current legislation, the supply of export peanuts is virtually unlim-

ited. However, government support rate is only \$220 per farmers stock metric ton and, therefore, it is up to the farmer to negotiate a profitable price for his peanuts with the sheller. Because of this, supply is partially limited to what the sheller believes in April he can sell beginning the following October. Demand, on the other hand, is relatively stable in the world market at approximately 460,000 metric tons. This demand is satisfied not only by offers from the United States, but also by other large and small exporting countries as well. The world market has found that peanuts are always available. The only significant major factors are price and quality. International sales are quoted in dollars per metric ton and shipments to most markets are made under terms of sight draft against bills of lading. Bills of lading are title documents for the peanuts, generally in the form of ocean bills of lading, which are mailed to the customer's bank along with a draft at sight and the other required documents for the shipment. The customer pays the bank the amount of the draft and receives title to the goods. He then delivers the bill of lading to the steamship line and receives his peanuts. Shipments are made in either containers of 20 metric tons or lash barges of 300 metric tons, the former being the most popular.

Containers are an excellent means of shipping peanuts because they are not subject to exposure to the elements from the time the container is loaded until it is unloaded at the factory. Lash barges, while requiring more handling of the peanuts and therefore possibly more peanut loss, are convenient because of their large size and frequently lower shipping costs per metric ton. Most sales are made basis cost, insurance, and freight (CIF) to destination port. This means that the sheller pays for the freight and insurance to cover the value of the material to the buyer's port. The cost of trucking the container of peanuts from a barge to the plant is borne by the buyer. Other sales are occasionally concluded either free-along-side the vessel at the origin port or free-on-board railcar or truck/container at the sheller's plant.

The structure in the international market, while duplicating the brokerage and direct business of the domestic market, adds the dealer. Dealers buy and sell peanuts in the international market. While brokers put buyer and seller together, dealers will take a long or short position in the peanut market. They buy from shellers just as a manufacturer would buy from a sheller, sometimes store goods at destination, resell to manufacturers in local currency, break down shipments in small quantities for several manufacturers and provide a variety of services which may even include financing the peanuts for the manufacturer.

The international market is not only influenced by conditions in the United States, but by conditions in other competing exporting countries. A crop failure in the Peoples' Republic of China, for example, would cause prices on a world basis to increase. The supply would be offset by other origins, but the void left in the market would cause prices to increase to higher levels. Because the world market is a totally free market, it is more supply and demand sensitive. The differences in quality produced by the varying producing nations also influence the international markets.

Peanuts are used in the international market in the same ways that they are used in the United States. However, there is far less emphasis in the world on peanut butter and greater emphasis on salted and roasted peanuts. With the exception of Canada and Holland, peanut butter is not consumed in large

quantities throughout the rest of the world. Major importing countries are generally those countries which are well developed. Major markets include Western Europe, Japan, and Canada.

There are many exporting countries, but only five that significantly influence the international market. Recently, the United States has been the largest exporter to the world. It is followed by China, India, Argentina, and Sudan. Crop difficulties in any of these five exporting countries will have an influence on prices paid in the international market. The market is also influenced by the governments of China and India, as they control their countries' exporting. In each of the five major exporting countries, the government plays a role in some form or another in the production and/or marketing of edible peanuts. Other influences on the international market are government embargoes, foreign material, and stocks carried over in Rotterdam from previous years.

In summary, although the international market is controlled by characteristics of supply and demand which are very similar to our domestic market, they are influenced on a broader scale and by other government factors than our own domestic market. The structure is sheller through broker to manufacturer or sheller to dealer and dealer to manufacturer. Sales are made internationally on a per ton basis as opposed to domestically on a per pound basis.

Oilstock

Most of the world's 15 to 20 million metric tons of peanut production is crushed for meal and oil. In the United States, crushing has long been considered an ancillary function to edible production—a necessary evil to dispose of shelling residues and surplus farmers stock. However, this attitude has changed in recent years.

Typically, about 10% of the kernel content for edible shelling is not suitable for human consumption and must be crushed. This material plus the surplus loan peanuts offered for competitive bids by CCC result in a total United States crush of about 272,000 metric tons (300,000 tons) each year. All Segregation III peanuts and the majority of Segregation II peanuts are also crushed.

Oilstock values are determined similarly to soybeans—by the gross value of the oil and meal after crushing less the costs. Peanut oil is considered a prime oil and usually enjoys a price premium to others because it does not smoke at normal cooking temperatures and it does not transfer flavors from one food to another. General price levels, however, are determined by the overall supply and demand situation for edible oils.

In the last few years, much more interest has been focused on oilstock peanuts. Several large world dealers in FAQ (Fair Average Quality) groundnuts have started large purchasing programs for United States oilstock. Port facilities on the Gulf and South Atlantic coasts have been developed or improved to handle bulk shipments to those countries which are the largest importers of peanuts for oil: France, Italy, Portugal, and Venezuela. Shipments of 2,000 to 10,000 metric tons have been common.

This export market is quite similar to export edible markets in that dealers are very important parties to the trade. Brokers are often involved in arranging sales between shellers and dealers, but crushers themselves rarely buy directly

from shellers. The dealers are able to assure European crushers of consistent supplies by providing peanuts from several different origins, including the United States.

United States regulations require the fragmentation of crushing stock to be exported. This requirement has been detrimental to the acceptance of American material since it makes it more difficult to store the peanuts and has a tendency to elevate the free fatty acid (FFA) levels. United States product generally has a lower oil content than other origins (43% versus 47%) because of its residue nature and the large proportion of immature peanuts.

In 1980 several shellers formed a Webb-Pomerene Corporation, American Peanut Exporting Company (APEC), to export oilstock peanuts. A Webb-Pomerene Corporation gives certain anti-trust immunity to members of a particular industry who wish to jointly market their products outside the United States. APEC pools production from its members in order to make offers of sufficiently large quantities to crushers.

Commodity Credit Corporation (CCC) sells surplus peanuts each year for crushing. Bid lists are issued periodically with the stipulation that CCC may reject any or all bids at its discretion. Oil resulting from auctioned peanuts may be restricted to domestic use. This practice usually results in a two-priced system with "unrestricted" oil produced from shelling residues (and Segregation II or III peanuts) selling at a premium to "restricted" oil. At times the two markets are equal and, on rare occasions, are inverted. The meal produced from any peanuts can be used in either domestic or export channels. Meal values generally move in concert with soybean meal futures.

A small number of United States shellers also operate crushing mills. They are often faced with the unique problem of selling their oilstock to foreign crushers or operating their own mill. This decision generally turns on the economic issue of the fixed cost of the downtime versus the premium being paid for exporting the raw material.

Market Risk

Each segment of the market is faced with a degree of uncertainty. The grower is always dependent upon the weather and does not know what his yields will be, nor can he be assured of receiving more than support levels for his peanuts. He can calculate fairly accurately the cost of production in order to establish a break-even value for his crop. Although his quota peanuts generally represent a profitable venture for him, his non-quota peanuts may or may not return a profit. Generally, he must make his planting decision prior to knowing what prices those peanuts will return.

The sheller must buy all of his inventory during the short harvest season and then market it throughout the year. Since manufacturers typically buy some of their needs before harvest (or even before planting), the sheller usually has a short position during the spring and summer followed by a significant long position from which he sells until the cycle begins again with the new crop. This cycle represents tremendous risk to the sheller, a risk which he has no means of avoiding or even significantly reducing.

The 1980 drought and crop disaster demonstrated that short positions are not safe. Previous to 1980, shellers believed that surpluses would always be

available through the Area Associations albeit at some premium to harvest prices. Sales could also be made relying on the ceiling effect of the support price, thereby making the penalty for incorrect price forecasting rather light. In 1980, a crop disaster occurred, farmers stock prices soared, and shellers' short positions resulted in millions of dollars lost—all to risk.

The long position which the sheller assumes at harvest is also dangerous. If quota peanuts are in oversupply, prices to the manufacturers may never reach break-even. When buying the farmers stock, the sheller really forecasts the demand for the entire year, in an environment of little future knowledge. The sheller must buy peanuts to run his plant, but has few alternatives to reduce the risk of market oversupply and the resultant dollar loss.

Shellers also have significant risk possibilities in non-quota peanuts. Contracts for non-quota farmers stock must be made with growers prior to April 15 of each year. Typically, export buyers do not begin to cover their needs until June, and heavy trading is done even later in the crop year as available supplies from southern hemisphere producers are better known. The sheller must, therefore, make a market for growers in a near vacuum. Since growers seem reluctant to contract non-quota peanuts at, or even near, the "additional" support rate, shellers have a potentially large risk position in farmers stock ownership. This risk is further complicated and compounded by the fact that historically few non-quota contracts require delivery if total production less quota poundage does not leave sufficient peanuts to satisfy such contracts. The sheller, in other words, does not know what he owns until he actually has it in his warehouse. Any export sales he makes prior to harvest may have created a short position even though he has farmers stock purchase contracts to offset them.

Another aspect of the nature of the sheller's risk is the fact that he must buy farmers stock and sell the several shelled grades and oilstock that result from the farmers stock. Depending upon demand, timing of sales, and contact with particular users, the shellers' risk may be concentrated in one grade or another. It is not inconceivable that he could extend his dollar risk beyond that created by ownership of his farmers stock inventory. Calculation of his risk is complicated by the variation in total kernel content, yield of certain grades, and the possibility of aflatoxin in non-indemnifiable peanuts (oilstock and "Other Edible Quality").

Processors can fairly accurately project their needs for a year and are able to budget their ingredient costs in order to establish a target price at which they hope to obtain their inventories. In addition, they can, within competitive limits, change the price of their product to regain profits which might otherwise be lost because of higher than anticipated ingredient costs. Although each processor would like to attain the lowest average inventory cost, he is probably satisfied if his input costs are not higher than those of his direct competitors.

Because of the wider range of supplies available to him, buyers for processing companies overseas probably run a greater risk of a competitor having significantly different ingredient costs than a United States processor. Restrictions on imports into the United States force the American processor to use only United States peanuts and therefore keep his costs on par with his competitors. The foreign buyer, however, may have a product line which is linked to certain sizes or origins and therefore finds himself with significantly different ingredient costs than a competitor with different suppliers.

All market segments want to consider and use hedging techniques. There is not a futures market for peanuts which would facilitate this activity. Efforts to interest existing commodities exchanges in offering a peanut contract have failed for the following reasons: (1) The volume is considered to be too small to interest speculators who create a liquid market and the commissions for the exchange and brokers; (2) a delivery point is difficult to determine; (3) a deliverable grade with discounts and premiums for "non-conforming" peanuts is hard to establish; (4) a free market (preferable for futures activity) does not exist for peanuts because the government essentially controls the supply.

Buyers and shellers try to hedge their positions to a limited degree by entering into contracts for actuals to be delivered at a future date. Each industry segment lays off or covers a portion of its position during the year. Very large long or short positions are not taken, although manufacturers, depending on how close shelled good prices are to the farmers stock equivalent of support price, take relatively less risk in covering their expected yearly needs than does the farmer who sells his crop before knowing exactly what his yields will be. The sheller has no viable means of hedging to reduce his risk. The composition of the industry and the present legislation dictates that the shellers must assume extraordinary risk.

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