Virginia's
Rural Economic Analysis Program

HORIZONS

November/December 1995 Volume 7, Number 6

The Peanut Industry Must Look to the Marketplace

Karen Mundy

Peanuts rank fifth in the state among crops in acres harvested (92,000) and value of production ($80,948,000) and seventh in cash receipts ($80,075,000). They are produced primarily in the southeastern counties of Southampton, Isle of Wight, Suffolk, Sussex, and Greensville. They provide income not only to these counties, but to surrounding counties as well as the producers and their families purchase inputs and consumer goods in surrounding areas.

The marketplace is not just the grocery store or the hardware store or the discount store. It includes consumers' opinions, their willingness to pay for a good, and their attitudes towards health, environmental, and quality issues. The marketplace is also international trade and Washington policy. One segment of an industry cannot consider only its own good if an industry is to survive. All segments must work together. In the peanut industry, the producer must work with the sheller and the manufacturer/processor. The sheller must work with the producer and manufacturer/processor and so on. If one segment fails to consider another segment and the information the marketplace is providing about what consumers want, the industry can disappear from an area or a state.

What is "consumer demand?" There are consumers at many levels of the marketing chain: a sheller is a consumer of farmers' stock peanuts; a processor or manufacturer is a consumer of the shellers' stocks; but Jane and Joe Retail-Consumer are the ones who ultimately determine the price they will pay for the end product. If enough Jane and Joe Retail-Consumers make the decision not to purchase or are unwilling to pay the prices being shown, purchases can decline at the retail level and all the levels below that are affected. What the consumer will do caps the dollars available to the entire system.

Karen Mundy is editor of Horizons.

A policy paper on peanuts that focuses on the peanut program and trade issues, *Forces of Change Affecting Virginia Peanut Producers*, is available from REAP. This issue of *Horizons* looks at the effects of the marketplace on peanut production in Virginia, and other issues that will be important to the future of Virginia's peanut industry.

Consumers' opinions

A survey done in 1992 for the National Peanut Council by the Gallup Organization showed that 85 percent of the respondents thought that peanuts tasted good, but only 46 percent thought peanuts to be a healthy snack. One of the areas of concern to consumers is the fat contained in peanuts (Table 1). The fact that most of the fat is unsaturated and, thus, does not represent the same health hazard that is found with saturated fat, does not seem to make any difference. In the mind of the consuming public, fat is fat. The survey also showed that only 4 percent thought of peanuts first when thinking of snacks; however, if they wanted salty snacks, peanuts came to mind first 16 percent of the time. (Carley, Fletcher, and Zhang).

United States and world markets

The General Agreement on Tariffs and Trade (GATT) and the North American Free Trade Agreement

Horizons is a publication of the Rural Economic Analysis Program (REAP) in the Department of Agricultural and Applied Economics and College of Agriculture and Life Sciences at Virginia Polytechnic Institute and State University.

Virginia Tech

Table 1. Nutritional value of edible peanut products.

Peanut product	Serving size	Total calories	Calories from fat	Total fat		Saturated fat	
				%[a]	grams	%[a]	grams
Raw blanched peanuts	1 oz.	160	100	18	11	10	2
Roasted in shell	1 oz.	170	120	17	13	12	2.5
Peanut butter[b]	2 oz.	190-200	130-150	23-25	15-16	10-18	2-4
Dry roasted	1 oz.	160	110	21	13	9	2
Salted peanuts	¼ cup	210	90	15	10	12	2.5
Potato chips	1 oz.	160	90	15	10	12	2.5
Cheese crackers	27 crackers	160	80	12	8	10	2
Tortilla chips	1 oz.	150	70	10	7	5	1
Pretzels	½ oz.	110	15	3	2	3	0.5

[a] Percent of daily recommended requirement.
[b] Total calories, calories from fat, total fat, and saturated fat vary according to brand.
Source: Product labels.

(NAFTA) have assured that up to 61,911 tons (shelled basis) of peanuts will be able to enter the country at minimal tariff rates ($60.00 per ton) by the year 2000. "Rotterdam (c.i.f.)" is the price used to define the world price for peanuts. Included in that price is the cost of shelled peanuts, the cost of insurance, and the cost of freight to Rotterdam. This price frequently appears to be higher than quota peanut prices. However, while both Rotterdam and United States prices are based on shelled basis weights, quota peanut prices are for farmers' stock peanuts while the Rotterdam price is for already shelled peanuts. One sheller estimates that the cost of shelling averages $120 per ton. Thus, it becomes important to understand what is included in the price being discussed.

Manufacturers would obviously prefer to pay the lowest price possible for their peanuts, even if little of the savings is passed along to the consumer. This behavior between the farm and retail level is important to the producer.

Farm to retail price margins

It has been found that peanut products are relatively unresponsive to price changes at the consumer level. However, when the price of peanuts to the manufacturer drops, not all of those price decreases are necessarily passed along to the consumer. In fact, it is estimated that because the market is oligopolistic in nature (few sellers) there is little incentive for the manufacturers to pass much of the price decrease along to the consumer. Conversely, price increases would usually be passed along to the consumer (Zhang, Fletcher, and Carley (a)). Figure 1 shows the relationship between the nominal price (price unadjusted for inflation) of peanut butter and the nominal average peanut price received by farmers, 1984 to 1994. The farm to retail price spread is the difference between the retail price per pound of peanut butter and the farm price per pound of farmers' stock peanuts. This difference increased from $1.26 in 1984 to $1.87 in 1991 and then decreased to $1.54 in 1993. Some, but not all of the farm level price decrease is passed along to the consumer, but most of the increase in the farm level price is passed along to the consumer.

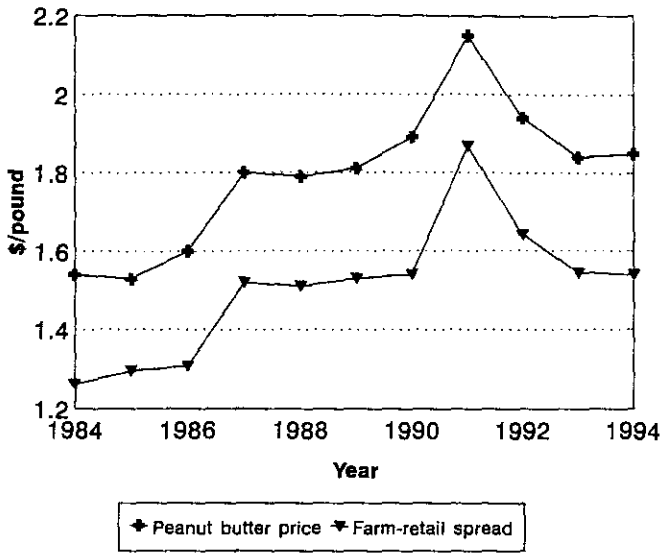
If the margins between farm and retail are to be maintained and peanut consumption maintained at market clearing levels, then there will have to be decreases in the prices received all along the marketing chain. In order to reduce prices received for the output and still maintain margins, costs will have to be reduced and operations become more efficient. Increasing demand by advertising or developing other food or non-food products, for which consumers are willing to pay a premium so that the market clears, is another option. An alternative is that the margins decrease, which would force inefficient operations out of business or to become more efficient in order to survive.

Consumer demand

Consumption of any product is simply the quantity used, without considering the price. The quantity demanded, is a price/quantity relationship. When an economist says "The demand for a good is . . . ," he means that, at a given price, a certain amount of the good will be purchased. In general, if the price of the good rises, the quantity demanded will decrease; and if the price of the good decreases, the quantity demanded will increase.

Horizons (ISSN 1075-9255) is published bimonthly by the Rural Economics Analysis Program (REAP). REAP is administered in the Department of Agricultural and Applied Economics in Virginia Tech's College of Agriculture and Life Sciences. Please address all correspondence to REAP, Department of Ag. and Applied Economics, Virginia Tech, Blacksburg, VA 24061-0401, phone (540) 231-9443.

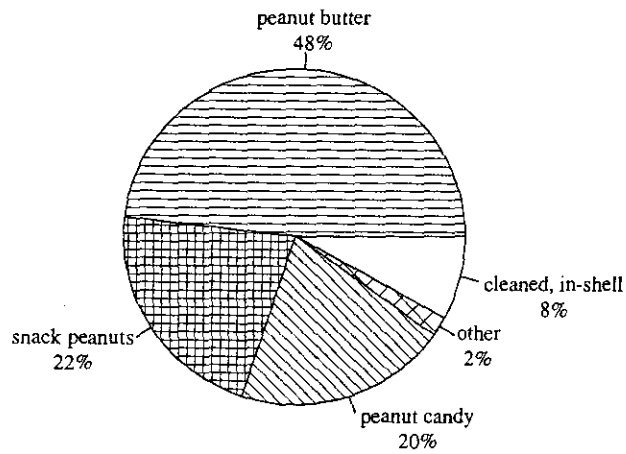
Figure 1. Average peanut butter prices minus prices received by farmers, 1984-1994.



These price/quantity tradeoffs are consistent with a stable demand structure. Demand and willingness to pay, which is an intuitive approach to what demand really is, change with changes in consumers' incomes, the price of substitutes, the price of complements (i.e., items that seem to be purchased together such as peanut butter and jelly), and consumers' tastes and preferences.

Most of the recent studies related to the demand for peanuts have focused primarily on the demand for peanut butter. Peanut butter consumption averaged 48.2 percent of the food use of peanuts from 1981 to 1994. Other edible uses for peanuts are shown in Figure 2.

Figure 2. Food uses of peanuts, 1981-1994.



Prices for peanut butter are the only data series available for the retail sales. Therefore, since approximately 50 percent of the peanuts are consumed in the form of peanut butter, peanut butter prices are assumed to be a reasonable proxy for all retail level peanut prices. Table 2 shows the real price (price adjusted to remove the effects of inflation) of peanut butter from 1984 to 1994. Since 1985, the real price of peanut butter has fallen from $1.42 per pound (United States average price for creamy peanut butter, all sizes) to $1.25 per pound. The quantity consumed has also fallen over the same period from 6.4 pounds per capita to 5.9 pounds per capita. This decrease in consumption, along with a decrease in the real price, strongly suggests that the demand for peanut butter has declined.[1]

Each price/quantity relationship shown in Figure 3 can be thought of as a "mini-demand" for peanut butter: at a given price, a given amount will be purchased. These price/quantity coordinates become a point on a demand curve or schedule. As can be seen in Figure 3, a lower and lower price is being required to sell an increasingly smaller quantity of peanut butter. If demand was not declining but remaining constant, the quantity and prices would move together, but in opposite directions. Given the findings of the Gallup Poll, the shift in demand is quite likely to be the result of the changing tastes and preferences of consumers.

The most noticeable exception shown in Figure 3 is 1991 when both quantity and price increased. This situation also occurred in 1986, but the quantity and price increases were significantly smaller. One explanation for the 1991 occurrence is that the federal government, having made a decision to purchase only a small quantity of peanuts for food assistance programs in 1990 due to a shortage and not wanting to drive up consumer prices, purchased 2.5 times as much in 1991. The result was higher consumer prices and greater consumption or disappearance. In 1980, there was a short crop and per capita consumption of peanuts (shelled basis) averaged only 4.8 pounds per person; however, in subsequent years, per capita consumption rose steadily to a high of 7.0 pounds in 1989. In 1990 per capita consumption dropped to 6.1 pounds, a 12.8 percent decrease. Smaller purchases of peanut butter by the federal government in 1994 and 1995 were the result of reduced funding and an attempt to help reduce fat in school lunches (Sanford).

[1] The economist reader will consider the identification issue here: what has shifted, supply or demand? But, when quantity and price decrease over time, demand must have shifted.

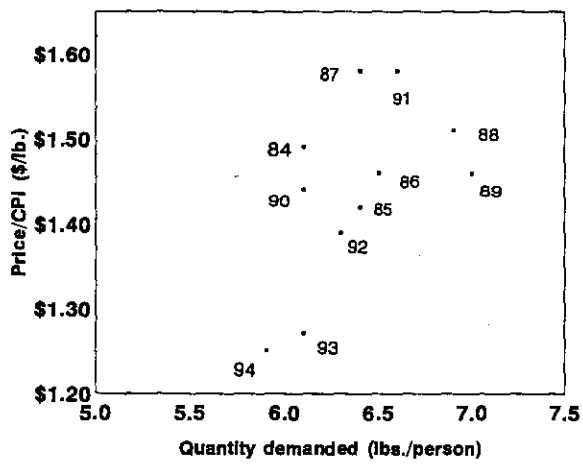
Table 2. Real price of peanut butter and per capita consumption of peanuts, 1985-1994.

Year	Real price of peanut butter	Per capita consumption
	$/lb.	lbs.
1984	1.49	6.1
1985	1.42	6.4
1986	1.46	6.5
1987	1.58	6.4
1988	1.51	6.9
1989	1.46	7.0
1990	1.44	6.1
1991	1.58	6.6
1992	1.39	6.3
1993	1.27	6.1
1994	1.25	5.9

Source: U. S. Dept. of Labor.

USDA estimates that consumption of peanuts and peanut products has stabilized. However, it depends upon how consumption is defined: consumption of all peanuts in the United States or only the consumption of domestically produced peanuts. Consumption of domestically produced peanuts is likely to continue to decline by the amount of imports if manufacturers can purchase imported peanuts at lower prices. GATT and NAFTA have assured imports up to 168 million pounds, shelled basis, of peanuts at world prices by 2000.

Figure 3. Demand for peanut butter, 1984-1994.



In terms of the demand for peanuts, if the real price is decreasing or constant and the marketplace is still selling smaller quantities of peanuts, then as inflation drives up the costs of production inputs, there will be pressure on all levels of the peanut industry to reduce costs. If costs are not reduced, beginning with the producer and going through the manufacturer, and if some of these reductions in cost are not passed on to the consumer, those producers, shellers, and manufacturers with higher cost operations may be forced out of business.

The operations that have achieved any economies of size that might exist in the industry will survive and pick-up the required production from those who have exited the industry. This elimination of inefficiency in the peanut industry will continue until quantity demanded and quantity supplied find some balance. The results of these cost efficiencies will need to be passed along to the consumer because the consumer is not willing to pay enough for peanuts and peanut products to support inefficient operations.

Quality also affects the demand for peanuts and peanut products. One of the major quality factors is the absence or presence of aflatoxin. Since controlling levels of aflatoxin is important in the production of peanuts and requires the use of pesticides, efforts to limit the presence of the molds lead to environmental as well as health issues. Pressure to decrease pesticide usage may come in the form of the quantity demanded continuing to decline until such time as the consumer is satisfied that the end product, peanuts, is "safe" and that the use of chemicals during production has been reduced to "acceptable" levels. The United States has the safest food supplies in the world, although not all consumers are willing to accept that notion. The peanut sector, like all food sectors, has to continue to keep consumers informed.

What does it all mean?

The bottom line on the various challenges facing the peanut industry is that changes must be made if a viable peanut industry is to remain in Virginia and the United States. And the industry must look to the marketplace to help shape those changes.

Educating Joe and Jane Retail-Consumer about the nutritional value of peanuts may help to shift the demand outward again. The development of new peanut products, not necessarily limited to food uses, may also help to create a new area of demand.

Argentine peanut producers and shellers have listened to comments from United States manufacturers and have made changes in their production and handling of peanuts. In an interview with Cecil Yancy of *The Peanut Grower*, Javier Ramirez of Argentina tells why he believes Argentine peanut growers have an advantage over United States growers.

> A single point of business. We can control the quality of the peanuts from the time they go in the ground and follow them to their end use. The only thing we don't do is sell them in the store. It's an integrated approach in Argentina.... That's the only way you can control the product--and the profits that come as a result of that increased quality (p. 20).

According to Jeff Johnson from Birdsong Peanuts, in testimony at the Hearings before the Subcommittee on Risk Management and Specialty Crops of the Committee on Agriculture, House of Representatives, Mexico has the climate and soil to produce quality peanuts. What the Mexicans lack is the shelling and drying equipment.

> **But**-- Shelling and Peanut Butter Plants are not exactly Star Wars technology.... Nobody wants to build a plant in Mexico, but if we legislate $200 + per ton price difference between Mexican and U.S. peanuts they will be forced to.... Once these plants are built, they won't go away.... The conclusion is inescapable. You can't sell a commodity at double the world market price and allow imports of the cheaper product into your marketplace....(p. 304)

It would seem that for the United States peanut growers to remain viable, they will have to accept some reduction in gross income as a result of having quota prices significantly reduced so that United States peanuts are price competitive with imported peanuts. Producers need to ask themselves two questions: "Is some income from peanuts better than no income?" and "How can the cost of production be cut to cause the least reduction in net income?"

The rest of the peanut industry, beyond the "farm gate," may need to take a hard look at cost control which may include vertically integrating for the sake of survival. It may need to consider building storage and processing facilities outside the United States. Unfortunately, this alternative would severely injure domestic producers as well as other segments of the economy which are tied to the peanut industry.

There are no easy solutions to the issues currently facing the peanut industry. Informed choices are essential. All participants, from producer to retailer, have a stake in trying to make sure the response in the marketplace is positive.

REFERENCES

Carley, Dale H., Stanley M. Fletcher, and Ping Zhang. "Estimated Impact of Various Consumer and Policy Factors on Peanut Product Consumption," *Peanut Science*. Vol. 21, no 1 (Jan - June, 1994):34-40.

Cotton, Thomas. Telephone conversation. Virginia-Carolina Peanut Growers Association. October 24, 1995.

Hearings Before the Subcommittee on Risk Management and Specialty Crops of the Committee on Agriculture. House of Representatives, 104th Congress, First Session. *Formulation of the 1995 Farm Bill, (Sugar and Peanut Titles)*. Serial no. 104-8, Part 5.

Johnson, Jeffrey. "Peanut Consumption at a Crossroads," *Agricultural Outlook Forum: Proceedings*. In Hearings Before the Subcommittee on Risk Management and Specialty Crops of the Committee on Agriculture. House of Representatives, 104th Congress, First Session. *Formulation of the 1995 Farm Bill, (Sugar and Peanut Titles)*. Serial no. 104-8, Part 5.

Sanford, Scott. Telephone conversation. USDA. ERS. October 23, 1995

_____, and Sam Evans. *Peanuts: Background for 1995 Farm Legislation*. USDA. ERS. AER No. 710. April, 1995.

Shurley, W. Don, Dale H. Carley, and Stanley M. Fletcher. *Peanuts: Background and Policy Issues of the 21st Century*. Athens, Ga.: University of Georgia Cooperative Extension. AGECON 94-036. December, 1994.

U. S. Department of Commerce (a). *Estimates of Population*. Economic and Statistical Administration, Bureau of the Census. Various issues.

_____ (b). *Statistical Abstract of the United States*. Economic and Statistical Administration. Bureau of the Census. Various years.

U.S. Department of Labor. *CPI Detailed Report*. Bureau of Labor Statistics. Various issues.

U. S. Department of Agriculture (a). *Oil Crops Yearbook*. ERS OCS-1995, July, 1995.

_____ (b). "Table 21," *Oilseeds and Products.* Foreign Agricultural Service. Various years.

_____ (c). *Peanut Stocks and Processing.* National Agricultural Statistical Service. Various issues.

Woodroot, Jasper Guy. *Peanuts Production, Processing, Products.* Westport, Conn.: AVI Publishing Co., Inc. 1983

Yancy, Cecil. "The Price is Right?" *The Peanut Farmer.* Vol. 31, no. 4 (April, 1995): 17-24.

Zhang, Ping, Stanley M. Fletcher, and Dale H. Carley (a). "Peanut Price Transmission Asymmetry in Peanut Butter," *Agribusiness.* Vol. 11, no. 1 (1995):13-20.

_____ (b). *U.S. Demand for Edible Peanuts.* Griffin, Ga.: University of Georgia. FS92-14. July, 1992.

The Editor would like to apologize for the formatting errors in the September/October issue of *Horizons*. I hope that they did not cause undo confusion in reading the newsletter. I apologize especially to the authors, Tara Butler, Everett Peterson, and Mike Ellerbrock. Karen Mundy, Editor.

NOTICES

**Two policy papers are available from REAP: *Potential Changes Facing Virginia Tobacco Producers* and *Forces of Change Affecting Virginia Peanut Growers.* These were mailed to those of the *Horizons* mailing list. If additional copies are desired, contact the REAP office.

**A new REAP Report, *Coal Taxation Revenues and County Finances in Southwestern Virginia,* by Eduardo Romano and George McDowell, discusses the relative importance of coal severance tax revenue to county government finances in southwestern Virginia's coal producing region. This report would also be of interest to residents of other counties with similar financial conditions.

A REAP Report at press: *The Process for Evaluating Agricultural Alternatives: An Eastern Shore Virginia Example,* by Susan B. Sterrett *et al.*, describes an appropriate process for determining if a new crop or several new crops will be economically viable for producers. It gives budgets for several vegetable crops and an illustration of how to use these budgets as well as discussing other areas needed to be considered when adding alternative enterprises.

To request copies of these publications, please contact Karen Mundy, REAP Editor, at the address below.

HOW TO REACH US: REAP, Department of Agricultural and Applied Economics, Virginia Tech, Blacksburg, VA 24061-0401; telephone (540) 231-9443; fax (540) 231-7417; email reap01@vtvm1.cc.vt.edu

Virginia Polytechnic Institute and State University
Department of Agricultural and Applied Economics
Blacksburg, Virginia 24061-0401

Non-Profit Org.
U.S. Postage
PAID
Blacksburg, VA 24060
Permit No. 28

Printed on recycled paper

HORIZONS

VT/001/0196/3M/962466