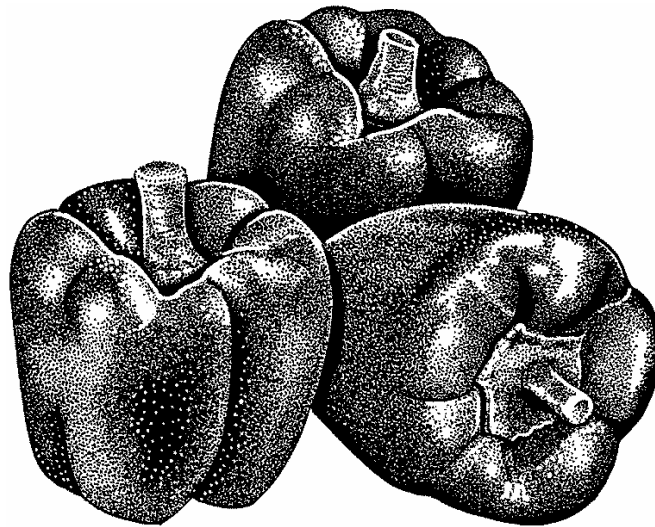


Economic Analysis of Pepper Production, Marketing and Management in Georgia



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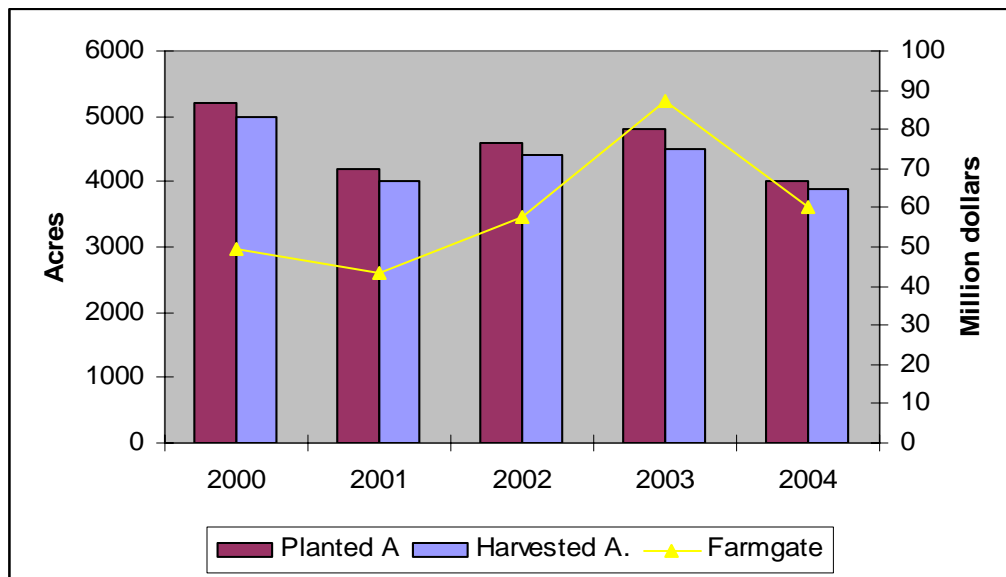
Introduction

Marketing pepper or any horticultural product is more than just selling. Marketing includes financial and production planning, harvesting, packaging, transportation, distributions warehousing, and pricing. To be successful, marketing must be responsive to consumers' demands. Simplistically, it must be customer oriented. To add to the multifaceted problems, marketing skills are required and a determination of one's targeted market. Is it direct marketing, marketing to retail outlets, specialty food stores or wholesalers? Do you need any promotion? Is any specific harvest time required? All these and more questions need to be addressed. Do consumers demand quality, freshness, "reasonable" prices or all of the above?

Georgia Production and Farm Gate Value

Georgia Agricultural Statistic Service (GASS) started collecting pepper data in 2000. Prior to that, most vegetable data was compiled by the University of Georgia, Center for Agribusiness and Economic Development. The information in Figure 1 is a combination of

Fig. 1: Georgia bell pepper production and farm gate value: 2000-2004



Source: Boatright, S.R. and C. McKissick. 2004 Georgia Farm Gate Value Report, AR 05-01

both sources. Bell pepper is an important vegetable crop in the state of Georgia. The farm gate value data was gathered from various issues of the Georgia Farm Gate Value Report while the planted and harvested data was gathered from GASS. In Georgia, bell pepper ranked 24th in 2004 amongst all Georgia Commodity Ranking as it generated slightly over \$60 million. The peak bell pepper farm gate value was recorded in 2003 when it generated over \$87 million and was ranked 18th in the state. Planted acreage peaked in 2000 when about 5200 acres were planted but only 5000 were harvested. The trend in planted versus harvested has been fluctuating (Fig. 1).

Wholesalers and Distributors Purchase Decision for Fresh Produce

A 2002 University of Georgia marketing survey asked wholesalers and distributors to rank their purchase decision for fresh produce. The results are summarized in Table 1. It is not surprising that quality is the most important factor in the wholesalers' and distributors' purchasing decision. However, it was interesting that quality and price were ranked higher than reliability. Unfortunately, the origin of fresh produce was ranked last.

Table 1: Average ranking of wholesalers and distributors purchase decision for fresh produce

Factor	Average Ranking
Quality	1.13
Price	2.00
Reliability	3.63
Quantity	4.13
Convenience	5.00
Transportation	5.25
Origin	6.88

Source: Wolfe, K and E. G Fonsah (2002) "Wholesales and Distributors Outlook for Fruit and Vegetables Produced in Georgia" *GFVGA News Vol. 7, No. 4, Fall*.

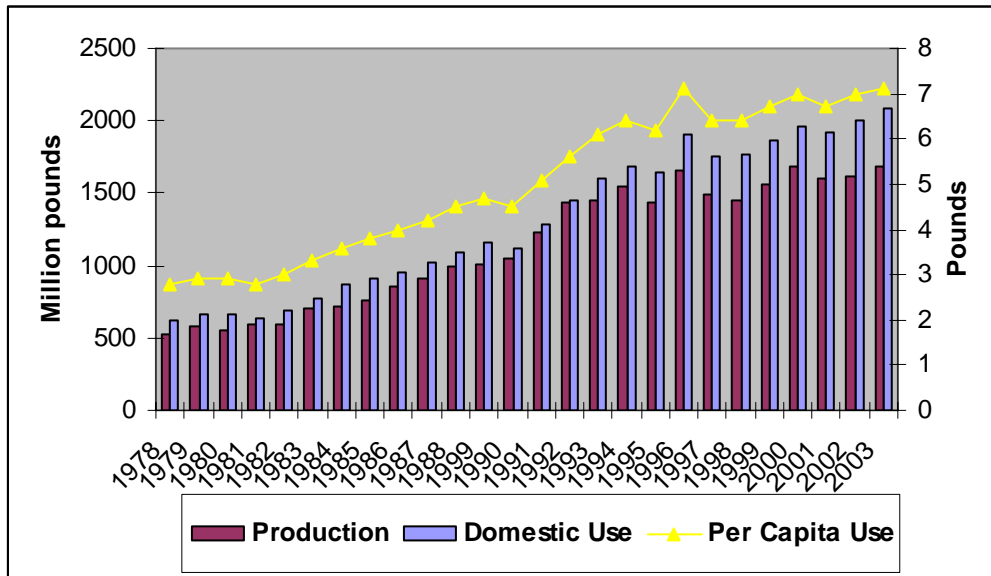
Wholesalers/distributors consider quality, price and reliability to be the most important factors in making a purchase. Being grown in Georgia will not help Georgia growers if their produce cannot compete on quality, price and reliability. These three factors are the minimal requirements needed to enter this market and can be thought of as a baseline from which grown in Georgia products must be differentiated.

A Georgia survey asked buyers to rank the factors that influenced their decisions to buy. Georgia pepper growers have benefited from a growing market for peppers. Georgia's reputation for providing quality peppers in the quantity demanded has improved. Competition from other areas in the Southeast requires that this reputation be maintained and improved. As production continues to expand some growers will not be able to compete. Production skills alone will not insure survival. Marketing will increase in its importance.

Production, Domestic Consumption and Per Capita Use

The United States production of fresh bell pepper is continually on the rise since 1978 where only 520.1 million pounds were produced. By year 2003, production had increased over 3 times to 1680 million pound (Fig. 2). Production increased at an increasing rate until 1996 when it reached its peak at 1664 million pounds. Thereafter, it has been fluctuating. However, years 2000 and 2003 were as good as the peak year, 1996 as 1686 and 1680 million pounds were produced respectively (Fig. 2).

Fig 2: U.S. fresh bell pepper production, domestic consumption and per capita use, 1978 - 2003



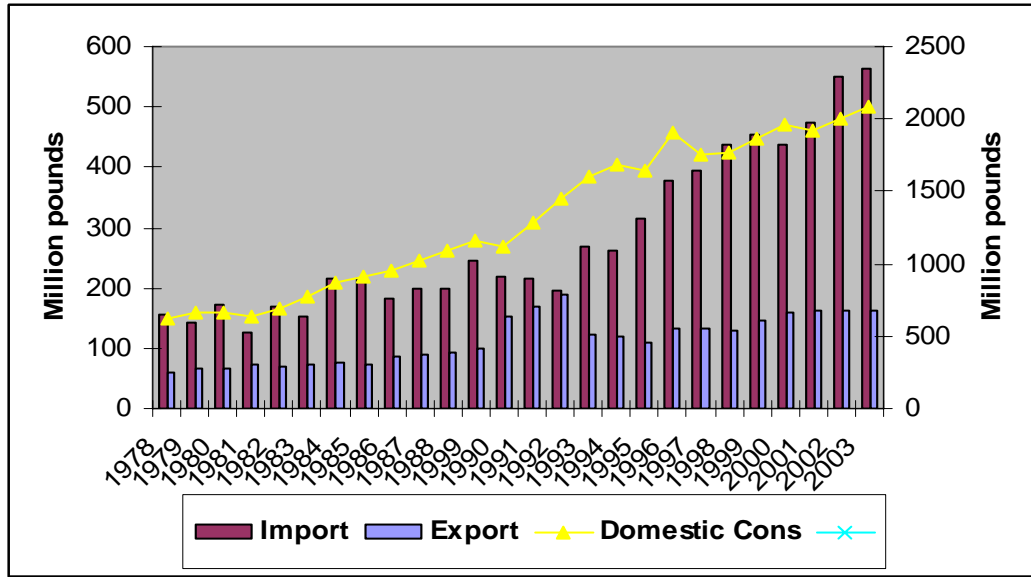
Source: ERS/USDA Vegetables & Melon/VGS-2003/July 2003, pg. 45.

Domestic consumption equally increased almost 3.5 folds while per capita use increased over 2.5 folds concomitantly. In 1978, domestic consumption stood at 616 million pounds compared to 2083 million pounds in 2003. On the other hand, per capita use of pepper increased from 2.8 pounds in 1978 to 7.1 pounds in 2003. Per capita use is “a measure of commodity disappearance on a per-person basis. Equal to total supply (production plus imports plus beginning stocks) less uses (exports, shrink and loss, seed use, ending stocks) divided by total U.S. population (including military)”.

Import, Export and Domestic Consumption

Despite the over three-fold increase in production, the United States still imports a substantial amount of its pepper to supplement the ever increasing domestic consumption. The level of domestic consumption (Fig. 3) is derived as the difference between the sum of production (Fig. 2) and imports, and the level of exports. Although the United States also exports pepper, total quantity imported surpasses export and this gap started widening since 1994 until present. Pepper export was at its peak in 1992 when 189 million pounds were sold out of the United States. Thereafter, the export trend has been downward slopping. In 2003, only 162 million pounds of pepper were shipped out of the U.S. (Fig. 3).

Fig. 3: U.S. pepper import, export and domestic consumption, 1978-2003



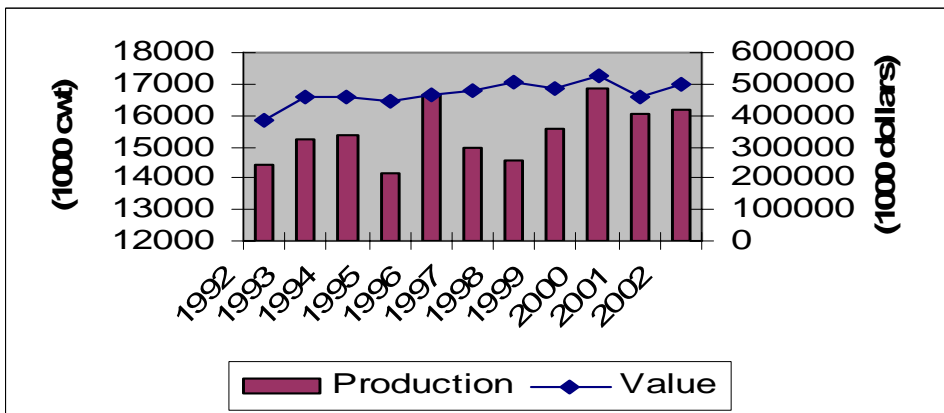
Source: ERS/USDA Vegetables & Melon/VGS-2003/July 2003, pg. 45.

Domestic consumption has increased from 616 million pounds in 1978 to 2083 million pounds in 2003 (Fig. 3). To meet up with this tremendous rising pepper demand, import has become the talk of the day. In 1978, only 156 million pounds of pepper was imported to the United States compared to 565 million pounds in 2003, thus an increase of 262%. On the other hand, pepper export increased only 166% during the same time frame.

Production and Value

The continuous growth in production and consumption of pepper in and out of the United States has indeed increased the dollar value from about \$400 million in 1978 to almost \$500 million in 2002 (Fig. 4)

Fig 4: U.S. production and value of fresh pepper, 1992-2002



Source: ERS/USDA Vegetables & Melon/VGS-2003/July 2003, pg. 45.

Due to the North American Free Trade Agreement, NAFTA, trade between the United States, Canada and Mexico has improved significantly. Presently, Canada is our number one trading partner for fruits and vegetables. In 2002, pepper export value to Canada was worth \$69.4 million equivalent to 94.5% of total United States pepper export value whereas \$1.3 million was recorded for export to Mexico equivalent to 1.8% (Table 2).

Export Supply

Table 2: U.S. export value of bell pepper to selected countries and the world, 1997-2002 in (\$1,000)

Years	Canada	Mexico	U.K.	Netherlands	Japan	Others	World
1997	53155	511	55	0	206	343	54352
1998	54000	669	150	0	78	571	55635
1999	57617	751	294	19	0	301	59113
2000	65980	1091	127	43	107	191	67630
2001	68708	1938	93	201	1177	489	72695
2002	69413	1313	86	770	797	906	73431

Source: ERS/USDA Vegetables & Melon/VGS-2003/July 2003, pg. 30.

Other countries that purchased a small quantity of pepper from the United States were the United Kingdom, The Netherlands, Japan, Germany, Switzerland, South Korea, Hong Kong (China), Japan and Taiwan (Table 2).

Import Demand

Although NAFTA agreement has benefit trade ties between the United States, Canada and Mexico, Mexico has benefited more by continually expanding her pepper sales to the United States. The United States imported pepper from Mexico was worth \$122 million, \$134.8 million, \$188 million and \$132.7 million in years 1999, 2000, 2001 and 2002 respectively (Table 3). It should be noted here that Mexico also has comparative advantage in terms of weather, cheap labor and other conditions over the United States. However, most of the firms producing and supplying fresh and chili pepper are United States companies based in Mexico and taking advantage of the cheap labor and weather simultaneously.

Table 3: U.S. import value of bell and chili pepper to selected countries and the world, 1997- 2002 (\$1,000).

Years	Canada	Mexico	Netherlands	Others	World
1999	37931	122038	46011	15783	221763
1999 1/	10	106337	58	174	106579
2000	49098	134773	48928	20602	253401
2000 1/	12	202008	45	231	202296
2001	64424	188042	50195	25835	328497
2001 1/	20	179778	733	618	181150
2002	71417	132727	56844	29601	290589
2002 1/	96	166956	350	288	167690

Source: ERS/USDA Vegetables & Melon/VGS-2003/July 2003, pg. 25.

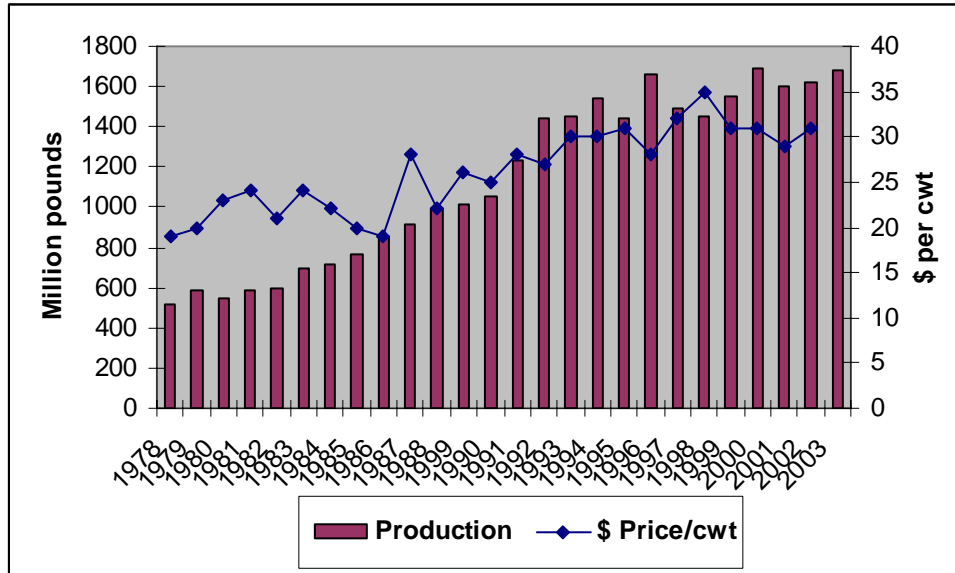
1/- Value for chili pepper sold to the United States.

Furthermore, the United States purchased most of its chili pepper from Mexico. The import value is also increasing from \$106 million in 1999 to \$167 million in 2002. The peak import value was in year 2000 when the U.S. imported chili peppers worth \$202.00 from Mexico. The U.S. also imported a small amount from Canada and the Netherlands.

Production and Seasonal Pricing

Supply and demand determine the general price level of pepper. Seasonal average prices per cwt have been fluctuating. In 1978 the seasonal average price per cwt was \$19.40 whereas in 2002 the price had jumped to \$30.80 per cwt. The peak price was recorded in 1998 at \$34.80 per cwt (Fig 5).

Fig 5: U.S. pepper production and seasonal prices, 1978-2003 (dollars per cwt)



Source: ERS/USDA Vegetables & Melon/VGS-2003/July 2003, pg. 45.

Pepper prices vary greatly within a season and between years. Most of the price variation within season is caused by weather effects on production. Price variations among years are caused by changes in acreage and weather. Little of the price variation is caused by demand changes. Demand changes are slight from year-to-year. Figure 5 further shows that despite the continuous increase in pepper production and supply overall price per cwt continues to rise concomitantly. This trend actually violates economic theory.

For recent prices, see University of Georgia Extension Agricultural Economics website: www.agecon.uga.edu.

Consumers determine the demand by deciding what and how much they will buy. Thus, marketing efforts must be consumer oriented. Consumers normally reflect their wants in the product and product characteristics they buy. Characteristics of pepper quality include: shape, thickness, firmness and uniform glossy color. Variety and age determine color. The most preferred color is dark green. Specialty markets may demand red, golden, or other colors. Large peppers normally bring premium prices, regardless of color. The competing states production levels determine the supply.

Production Costs

Pepper growers can use enterprise budgets to estimate production and break-even costs. Budgets include cost estimates for those inputs necessary to achieve the specified yields over a period of years. Since production practices vary among growers, each grower needs to adapt budget estimates to reflect his or her individual situation. Detailed printed and computerized budgets are available in most county extension offices and in the University of Georgia, Department of Agricultural and Applied Economics Website: www.agecon.uga.edu.

Farm Input Prices

There were several factors that can influence price of inputs, total cost of production and profit margin. Many farmers in Georgia need not invest in drip irrigation materials or dig a new well since they already have them available. If so, that would significantly increase profitability. Also motor sizes (HP) were different depending on acreage. Quantity discounts for items such as packing supplies were factors that affected price of inputs. The cost estimate in this budget reflects a combination of the current agricultural practices in Georgia and recommendations from UGA specialists. The prices were actual prices from vendors around the counties involved in pepper production and they excluded quantity discounts. However, it is worth mentioning here that, a 3% tax should be added to the farm input prices.

Variable Cost of Producing Pepper

Total costs of producing any crop include both variable and fixed costs. The variable or operating costs vary with the adopted cultural practices. Common variable costs components include seed, fertilizer, chemicals, fuel, and labor. Pre-variable cost was \$2724.98 (Table 4).

Table 4: Variable or operating costs of producing pepper in Georgia, 2005

Items	Unit of application	Quantity of application (units/year)	Price per application (\$/unit per year)	Total cost (US\$ acre per year)
Plants	thou	7.50	29.50	221.25
Lime, applied	ton	1.00	26.00	26.00
Base fertilizer	lbs	12.00	9.50	114.00
Side-dressing fertilizer (soluble)	gal	0.54	184.00	99.00
Insecticide 1/	acre	1.00	186.22	186.22
Fungicide	acre	1.00	231.36	231.36
Nematicide	acre	1.00	510.00	510.00
Herbicide	acre	1.00	68.08	68.08
Plastic	roll	2.80	68.50	191.80
Plastic removal	acre	1.00	75.00	75.00
Drip tape	ft	8700.00	0.02	174.00
Fumigation (1 st crop)	acre	150.00	2.70	202.50
Machinery	hr	5.00	21.00	105.00
Transplant labor	hr	20.00	7.00	140.00
Labor	hr	33.00	6.00	198.00
Land rent	acre	1.00	0.00	0.00
Irrigation (mach + labor)	acre	1.00	65.08	65.08
Interest on operating capital	\$	2607.64	0.09	117.34
Pre-harvest variable cost				2724.98

1/ Fall plantings may require additional application, estimated at \$30 more.

The cost of nematicide was \$510.00, thus almost 19% of pre-variable cost. Other important cost components were plants (\$221.25), fungicide (\$231.00) and fumigation (\$203.00) per acre respectively. Variable costs are further broken down into pre-harvest and harvesting and marketing operations in the budget. This provides you an opportunity to analyze the costs at different stages of the production process.

Harvesting and Marketing Costs

Total harvesting cost was estimated at \$5325.00 per acre. This cost included picking and hauling, grading and packing, container and marketing. The calculation was based on an average yield of 1500 boxes per acre (Table 5). Total variable or operation cost was \$8050.98, i.e., the sum of pre-variable cost and harvesting and marketing costs.

Table 5: Harvesting and marketing costs of producing pepper in Georgia, 2005

	Unit of application	Quantity of application (per year)	Price per application (\$/unit per year)	Total cost (US\$/ acre per year)
Picking and hauling	ctn.	1500	0.85	1275.00
Grading and packing	ctn.	1500	1.10	1650.00
Container	ctn.	1500	0.75	1125.00
Marketing	ctn.	1500	0.85	1275.00
Total harvest and marketing costs per acre				5325.00
Total variable and marketing costs per acre				8050.98

Fixed Costs of Producing Pepper

Fixed costs include items such as equipment ownership (depreciation, interest, insurance and taxes) management and general overhead costs. Most of these costs are incurred even if little production takes place and these costs should be considered when planning production costs. Total fixed cost was \$815.20, irrigation, overhead and management costs were \$220.65 and \$408.75 respectively (Table 6).

Table 6: Fixed costs of producing pepper in Georgia, 2005

	Unit of application	Quantity of application (per year)	Price per application (\$/unit per year)	Total cost (US\$/ acre per year)
Machinery	acre	1.00	56.27	56.27
Irrigation	acre	1.00	90.99	220.65
Land	acre	1.00	129.53	129.53
Overhead and management	\$	2724.98	0.15	408.75
Total fixed costs				815.20
Total budgeted cost per acre				8865.18

Land cost may either be a variable or a fixed cost and since it varies significantly from county to county, from region to region and whether it is irrigated or non-irrigated. However, land cost in this study was \$129.53 per acre. A fixed cost per hour of use shows ownership costs for tractors and equipment (depreciation, interest, taxes, insurance, and shelter). Overhead and management are 15% of all pre-harvest variable expenses. This amount pays for management and farm costs which cannot be allocated to any one specific enterprise. Overhead items include utilities, pick-up trucks, farm shop and equipment, and fees (Table 6).

Cost/Unit of Production

The cost categories (Table 7) are broken down in cost per unit. The pre-harvest variable costs and the fixed costs decline with increases in yields. Pre-harvest variable cost per carton is \$1.82 whereas harvesting and marketing cost per carton was \$3.55. Fixed cost

per carton was calculated at \$0.54 and total budgeted cost per carton was \$5.91. Given these scenarios, profitability will depend on the going market price per carton and cost of production.

Table 7: Costs per carton of producing pepper in Georgia, 2005

Pre-harvest variable cost per carton	1.82
Harvest & marketing cost per carton	3.55
Fixed costs per carton	0.54
Total budgeted cost per carton	5.91

Budget Uses

In addition to estimating the total costs and break-even costs for producing peppers, there are other uses of the budget. Estimates of the cash costs (out-of-pocket expenses) provide information on how much money needs to be borrowed. The cash cost estimates are helpful in preparing cash flow statements. In the instance of share leases, the cost estimates by item can be used to more accurately determine a fair share arrangement by the landlord and tenant.

Risk Rated Net Returns

Since there is variation in yields and prices from year to year, an attempt is made to estimate the “riskiness” of producing peppers. The Extension Agricultural Economics Department uses five different yields and prices to calculate risk. The **median** values are those prices and yields a particular grower would anticipate to exceed half the time (Table 8).

Table 8: Risk rated return for pepper yields and prices in Georgia, 2005

	BEST	OPT	MEDIAN	PESS	WORST
Yield (cartons)	2100	1800	1500	1000	900
Price per carton	12.00	11.00	10.00	9.00	7.00

Half the time, he or she would anticipate not reaching below these prices and yields. **Optimistic** values are those prices and yields a grower would expect to reach or exceed in one-year-in-six. The **pessimistic** values are poor prices and yields that would be expected one-year-in-six. The **best** and **worst** values are those extreme levels that would occur “once a lifetime” (1 in 49).

The risk rated section (Table 9) shows there is a 99% chance of covering all costs and obtaining a base budgeted net revenue of \$6135.00. Fifty one percent of the time grower would expect to net \$6075.00 or more. Forty-nine percent of the time he/she would expect to net less than \$6075.00. One year out of six he would expect to make more than \$9823.00 per acre or less than \$2141.00. Over a period of years, this grower would anticipate an average or expected returns of \$6075.00 per acre.

Table 9: Risk rated returns over total costs of producing pepper in Georgia, 2005

	Best	Optimistic	Expected		Pessimistic	Worst
Returns(US\$)	9,823	7,324	6,075	4,763	3,452	2,141
Chances	6%	32%	51%			
Chances			49%	30%	16%	7%
Chance for profit = 99%						
						Base budgeted net revenue = 6,135
Net return levels (TOP ROW)						
The percentage chances of obtaining this level or more (MIDDLE ROW)						
The percentage chances of obtaining this level or less (BOTTOM ROW)						

A risk-rated sensitivity analysis for bell pepper in Georgia shows that in a worse case scenario where the price dropped to \$7.00 per carton with a pessimistic yield of 900 cartons per acre, the expected return will be \$1623.00 (Table 10), whereas with the price of \$7.00 per carton and an expected yield of 1500 cartons per acre, the expected risk-rated return was \$4567.00 while the net budgeted return per acre was \$2017.00 (Table 10).

Table 10: Risk-rated sensitivity analysis for bell pepper in Georgia

	Pessimistic yields/acre (boxes)	Pessimistic yields/acre (boxes)	Expected yields/acre (boxes)	Optimistic yields/acre (boxes)	Optimistic yields/acre (boxes)	
	900	1200	1500	1800	2100	
Expected price/box (\$)	Expected return/acre (\$)	Expected return/acre (\$)	Expected return/acre (\$)	Expected return/acre (\$)	Expected return/acre (\$)	Net budgeted return/acre
\$ 7.00	\$1,623	\$2,604	\$4,567	\$6,111	\$9,199	\$2,017
\$ 9.00	\$2,050	\$3,224	\$5,572	\$6,894	\$9,537	\$4,762
\$10.00	\$2,141	\$3,452	\$6,075	\$7,324	\$9,823	\$6,135
\$11.00	\$2,177	\$3,644	\$6,577	\$7,788	\$10,210	\$7,507
\$12.00	\$2,166	\$3,804	\$7,080	\$9,506	\$10,719	\$8,880

In a best case scenario, i.e. if the price per carton increased to \$12.00 and an expected yield of 1500 cartons per acre, expected risk-rated returns will be \$7080.00 and a net budgeted returns per acre of \$8880.00 (Table 10).

Drip Irrigation Cost Per Acre

The cost of drip irrigation was calculated based on 40 acres because farmers would not install any irrigation if only one acre was planted, as the cost would be extremely high. An interest rate of 7% was used in the calculations and 6 feet row width. The lifespan of the tubing was one year. The cost was broken down into two categories, i.e. fixed and operating costs respectively. The fixed cost component included material (pipe and fittings, storage tanks, pump and motor etc.), depreciation, interest, taxes and insurance. The operating cost included electricity, rate per kilowatt, repairs, motor horse power etc. Based on our calculations, total annual fixed cost per acre was \$220.65 and the total operation cost per acre was \$65.08 (Table 11).

Table 11: Drip irrigation costs per acre of pepper in Georgia, 2005

	Investment	Years life	Depreciation (per year)	Interest (per year)	Taxes and insurance (per year)
Pipe and fittings	8000.00	20	400.00	280.00	60.00
Storage tanks	500.00	10	50.00	18.00	4.00
Well	6500.00	25	260.00	228.00	49.00
Pump and motor	4000.00	12	333.00	140.00	30.00
Filter and auto	250.00	10	25.00	9.00	2.00
Injection system	750.00	10	75.00	26.00	6.00
Tubing	5800.00	1	5800.00	203.00	44.00
Installation	8500.00	20	425.00	298.00	64.00
Total investment	343.00		7368.00	1202.00	259.00
Total annual fixed costs					8826.00
Total annual fixed costs per acre					220.65
Total annual debt payment per acre					90.99
Operating costs					
Motor size (HP)			15.00		
Repairs			185.00		
Annual pumping hours			2500.00		
Electricity					
Demand (standby charge) per year			80.00		
Rate \$ per KWH			0.08		
Annual energy cost			2418.00		
Annual energy cost per acre			60.45		
Operating cost per acre per year					\$ 65.08

Investment and Annual Fixed Cost

The investment and annual fixed cost of producing pepper in Georgia was calculated based on 40 acres and 7% interest rate. Other factors that were taken into consideration in the calculations were salvage value, life-span of the equipment, depreciation, interest, taxes and insurance (Table 12).

Table 12: Investment and annual fixed cost of producing pepper in Georgia, 2005

Item	This crop	New cost (US\$)	Salvage value	Years life	Depre- ciation (per year)	Interest (per year)	Tax and insurance (per year)	FC/Ac.
Tractors	10%	70000	14000	15	373.00	336.00	59.00	19.00
Plow	20%	6600	1320	10	106.00	63.00	11.00	5.00
Disk	10%	12000	2400	10	96.00	58.00	10.00	4.00
Appl. herb	0%	1700	340	10	0.00	0.00	0.00	0.00
Bedder	50%	3000	600	10	120.00	72.00	13.00	5.00
Transplanter	50%	2900	580	10	116.00	70.00	12.00	5.00
Cultivator	0%	3500	700	10	0.00	0.00	0.00	0.00
Sprayer	30%	15000	3000	10	360.00	216.00	38.00	15.00
Side dresser	20%	4500	900	10	72.00	43.00	8.00	3.00
	40%	0	0	0	0.00	0.00	0.00	0.00
	40%	0	0	0	0.00	0.00	0.00	0.00
Total		17870	3574		1243.00	858.00	150.00	56.00
Total annual fixed costs								2250.80
Total annual fixed costs per acre								56.27

The materials involved in the calculations were tractors, plow, disk, bedder, transplanter, cultivator, sprayer and side dresser. The total annual cost was \$2250.80 whereas total annual fixed cost per acre was \$56.27 (Table 12).

Conclusion

Bell pepper is an important vegetable crop in the state of Georgia. It ranked 24th in 2004 amongst all Georgia Commodity Ranking as it generated slightly over \$60 million. The peak bell pepper farm gate value was recorded in 2003 when it generated over \$87 million and ranked 18th in the state. A 2002 University of Georgia marketing survey revealed that quality is the most important factor in the wholesalers' and distributor's purchasing decision. Quality and price were ranked higher than reliability.

At the national level the United States production of fresh bell pepper has been continually on the rise since 1978 where only 520.1 million pounds were produced. By year 2003, production had increased over 3 times to 1680 million pound. Per capita use of pepper increased from 2.8 pounds in 1978 to 7.1 pounds in 2003. Despite the over three fold increase in production, the United States still import a substantial amount of its pepper to supplement the ever increasing domestic consumption. Domestic consumption has increased from 616 million pounds in 1978 to 2083 million pounds in 2003. The continuous growth in production and consumption of pepper in and out of the United States has indeed increased the dollar value from about \$400 million in 1978 to almost \$500 million in 2002. In 2002, pepper export value to Canada was worth \$69.4 million equivalent to 94.5% of total United States pepper export value whereas \$1.3 million was recorded for export to Mexico equivalent to 1.8 percent.

Although the United States imported pepper from Mexico worth \$122 million, \$134.8 million, \$188 million and \$132.7 million in years 1999, 2000, 2001 and 2002 respectively, bear in mind that Mexico also has comparative advantage in terms of weather, cheap labor and other conditions over the United States. However, most of the firms producing and supplying fresh bell and chili pepper are United States companies based in Mexico and taking advantage of the cheap labor and favorable weather conditions simultaneously.

In 1978 the seasonal average price per cwt was \$19.40 whereas in 2002 the price had jumped to \$30.80 per cwt. The peak price was recorded in 1998 at \$34.80 per cwt. Pepper prices vary greatly within a season and between years. Most of the price variation within season is caused by weather effects on production. Price variations among years are caused by changes in acreage and weather.

Successful pepper production and management is always challenging and like any agricultural commodity, it is difficult. However, it remains an economically feasible production enterprise for many Georgia vegetable growers. The authors of this publication have attempted to bring together, condense, and provide the information and recommendations needed for producing and marketing high yields and excellent quality peppers. For additional or more detailed information, please contact the local county extension office.

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Prepared By:

Esendugue Greg Fonsah, Extension Economist- Fruits and Vegetables

Cesar L. Escalante, Extension Economist- Farm Management

Mark Byrd, University of Georgia Graduate Student, Ag Economics

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J. Scott Angle, Dean & Director
College of Agricultural & Environmental Sciences

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