Staff Report

AN ECONOMIC ANALYSIS OF CUCUMBER PRODUCTION FOR THE PROCESSING MARKET

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Robert L. Degner

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AGRICULTURAL MARKET RESEARCH CENTER

FOOD AND RESOURCE ECONOMICS DEPARTMENT

Institute of Food and Agricultural Sciences

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SUMMARY

This report examines the current state of the pickling industry in Florida and provides potential growers with information that can be used to evaluate the economic potential of various crops.

Information was obtained by telephone from executives of major pickling plants and from brokers that buy virtually all of the processing cucumbers currently produced in Florida.

Cucumbers are by far the most important item in the pickling. Small quantities of peppers, cauliflower, okra and cabbage are pickled.

In recent years, Florida has produced from 5,000 to 7,200 acres of cucumbers for processing. Prices and yields are generally lower for processing cucumbers than for fresh market.

Processors estimate that cucumber production from an additional 1,000 to 2,500 acres could be absorbed in Florida at current prices if production occurred in the fall and winter months.

Florida's production costs are high, relative to other growing areas, primarily because of fertilizer and pesticide requirements. These costs, coupled with current price levels, result in losses ranging from $500 to $1,000 per acre. However, some Florida growers may be able to reduce their costs, improve their yields, and produce cucumbers for pickling at a profit.

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INTRODUCTION

The devastating freezes and adverse economic conditions that have recently affected Florida's agricultural sector are causing farmers to search for more profitable crops. In some areas, there is considerable interest in crops that can be processed by pickling. The purpose of this paper is to examine the current pickling industry and provide potential growers with information which can be used to evaluate the economic potential of various crops.

Procedure

A list of pickling firms was obtained from Pickle Packers Interna tional, Inc., the major trade organization representing the industry. Six executives representing four major pickling plants and contracting brokers were interviewed by telephone in May 1985. The executives interviewed buy virtually all of the processing cucumbers currently produced in Florida.

FINDINGS

Background

Cucumbers are by far the most important item in the pickling industry. Relatively small quantities of other items such as peppers, cauliflower and okra are pickled. Packers prefer to buy peppers and okra near their plants because of their bulk. A major packer reported buying "two

to three" loads of peppers and several loads of cabbage annually. The packers interviewed expressed interest in buying additional quantities of cucumbers from Florida growers, but none wanted minor vegetables for pickling.

For a five-year period in the late 1970's and early 1980's, the Florida Crop and Livestock Reporting Service collected and published data on cucumber production for the processing market. These data are no longer reported. During the period for which data were published, Florida harvested from 5,000 to 7,200 acres of cucumbers for processing. The value ranged from $4.77 per bushel in 1976-77 to $10.01 in 1979-80. For most seasons, prices received for processing cucumbers were generally lower than those received for fresh market. Further, processing cucumber yields were substantially below fresh market yields (Table 1).

The Current Situation

Most cucumbers for processing are grown in the Homestead and Sanford areas. Virtually all are grown under contract. In Florida, most growers contract with brokers who, in turn, have contracts with processing firms. Few growers currently contract directly with processing plants.

All firms contacted expressed an interest in contracting for additional cucumbers in Florida. They were primarily interested in obtaining cucumbers in early spring from May 1 through June 10 and in the fall from about October 10 through the end of November. One buyer wanted to arrange for 200-300 acres of Florida production in both periods. A broker estimated the pickling industry requirements in Florida at 1,000 additional acres per year, while another major processor thought that production from 2,500 acres could be absorbed at current prices if most production came **in** the fall **and winter months.**

Table 1.--Cucumbers for processing: acreage, average yield, and value.

	Acreage		Yield		Value per Bushel	
Year	Planted	Harvested	Processed	Fresh	Processed	Fresh
1976-77	6,100	5,700	155	221	4.77	5.95
1977-78	6,600	6,200	155	246	5.03	5.77
1978-79	6,700	6,300	164	268	5.42	7.61
1979-80	7,700	7,200	145	Z80	10,01	8.67
1980-81	5,400	5,000	145	273	8.09	8.85

Source: Vegetable Summary, 1983, Florida Crop and Livestock Reporting Service.

Prices

According to the buyers interviewed, contract prices tend to be very stable. Prices paid for cucumbers depends on the size, with smaller sizes commanding higher prices. Two sizing and pricing systems are currently used in Florida. Both are based upon diameter, and length is typically 2.75 to 3.0 times the diameter. Size categories and current contract prices for one major firm (defined as Scenario I) are shown in Table 2. Prices range from $7.00 per bushel for the smallest size to $1.00 per bushel for "nubs" and "oversized." The yields in the various size categories can be varied and is dependent upon the picking schedule and the management of the operator, but the typical yields are also shown in Table 2. These yields and current prices result in a gross revenue of $578 per acre. All prices are prices paid to the grower F.O.B. at the field, and no containers are required. Because harvesting is very labor intensive, labor costs are estimated at slightly over $1.60 per bushel. Many growers pay pickers on an incentive system in order to get smaller (and more valuable) sizes picked. Typically, pickers receive 50 percent of the gross. A second size system and prices offered by a major Florida contractor are described as Scenario IP (Table 3). The gross revenue is almost $1,100 per acre.

In recent years, cucumbers for processing have been **imported from** Mexico during the periods that Florida is in production. The current season, which buyers describe as "typical," is no exception. Current prices F.O.B. McAllen, Texas range from $7.00 for the No. 1 size to $3.00 for the No. 3 size (Table 4). Applying these prices to the expected

Table 2.--Estimated yields and values of various cucumber sizes at typical contract prices, Scenario I.

Size	Percent of Crop	Estimated Yield[a]	Contract Price	Estimated Value per Acre
		(Bushels)	(Dollars/Bu.)	(Dollars)
No. 1 (< 1 1/16" diameter)	10	20	7.00	140
No.. 2 (1 1/16" < 1 1/2")	35	70	3.25	227
No. 3 (1 1/2" < 2")	45	90	2.12	191
Nubs and Over-size	10	20	1.00	20
Totals	100	200	2.89[a]	578

[a]This weighted average price is based upon the assumed yield distribution.

Table 3.--Estimated yields and values of various cucumber sizes at typical contract prices, Scenario II.

Size	Percent of Crop	Estimated Yield	Contract Price	Estimated Value per Acre
		(Bushels)	(Dollars/Bu.)	(Dollars)
< 1 1/16"	2	4	8.00	32
1/16" - 2"	45	90	7.50	675
2" - 2 1/8"	45	90	4.00	360
Nubs and over-size	8	16	1.50	24
Totals	100	200	5.46[a]	1,091

[a] Weighted average.

Table 4.--Estimated values of various cucumber sizes at current Mexican prices.

Size	Mexican Price	Values[b]
	(Dollars per Bushel)[a]	
No. 1 (< 1 1/16" diameter)	7.00	140
No. 2 (1 1/16" < 1 1/2")	5.00	350
No. 3 (1 1/2" < 2")	3.00	270
Nubs and oversize	1.00	20
Weighted average price and total value	3.90	780

[a] Based on reported F.O.B. prices at McAllen, Texas for No. 1 through No. 3 sizes. The price for nubs and oversized cucumbers is the minimum contract price.

[b] Based upon yields shown in Table 1.

yields for the various size categories results in a gross return of $780 per acre. This is a price that Florida growers will probably have to meet because freight costs from central Florida to major U.S. processors are similar to those from McAllen.

Costs and Returns

Florida's production costs for most vegetables are usually quite high because of fertilizer and pesticide requirements, and this holds true for cucumber production. Operating costs are estimated at $834 per acre, fixed costs at $249, and harvesting costs at $492 per acre, assuming a yield of 200 bushels. Under the prices offered by the contractor in Scenario I, a grower would lose about $1,000 per acre. The prices in Scenario II would result in losses of about $500 per acre; and faced with Mexican prices, growers would lose about $800 per acre (Table 5).

CONCLUSIONS

The current price levels and Florida's high production costs make cucumber production for the processing market an unattractive option for most farmers. However, some farmers can probably reduce their costs and some can undoubtedly increase their yields through good management. Each situation should be evaluated on an individual basis.

Table 5.--Projected costs and returns for cucumbers, central Florida.

	Per Acre	Bushel
	----- Dollars ----	
Operating Costs		
Seed	29	
Fertilizer	209	
Spray and dust Cultural	155	
labor Machine labor	203	
Gas, oil, grease Repair	43	
and maintenance	65	
Interest on production capital (14%- 4 months)	56	
Miscellaneous	41	
Total Operating Costs	33	
	834	
Fixed Casts		
Land rent	94	
Depreciation	60	
Licenses and insurance	81	
Interest on investment	14	
Total Fixed Costs	249	
Harvesting and. Marketing Costs		
Picking	492	1.64
Total harvesting and marketing costs	492	
Total Costs	1,575	

	Price per *Unit*				
	---------- Dollars ----------				
Yield	3.00	4.00	5.00	6.00	7.00
200	-975	-775	-575	-375	-175
250	-825	-575	-325	-75	175
300	-675	-375	*-75*	225	525
350	-525	-175	175	525	875
400	-375	25	425	825	1,225

Source: Adapted from Timothy Taylor's "Projected Costs and Returns for Florida Vegetables for 1984-85 Production Season,." September 1984.