

GUAM AGRICULTURAL AND RELATED STATISTICS

Compiled by
Thao Khamoui

Agricultural Experiment Station
College of Agriculture and Life Sciences
University of Guam
1984

Wilfred P. Leon Guerrero
Dean/Director

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and
Related Statistics

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Preface

The compilation of agricultural statistics contained in this publication is in response to the needs of those who are interested and involved in agricultural activities on Guam. Farmers and prospective investors often ask for information about Guam production, imports and prices of produce. Administrators, planners and policy makers in various public agencies frequently inquire about agricultural statistics for planning and policy formulation purposes. Researchers in various agricultural fields are frustrated by the lack of basic agricultural data needed for writing proposals for grants and conducting research. This is especially true when reliable time series data are needed for making projections.

This publication is by no means comprehensive but it is hoped that the dissemination of information contained herein will assist many people who are involved in and concerned with agricultural development on Guam. Since statistical data provide an important basis for decision making and evaluating agricultural activities over a period of time, their availability should lead to better planning, improved decision making processes, and effective policy formulation.

However, the statistical information presented must be used very carefully. For example, Tables 18 and 23 show that while the population on Guam in 1977 was 99,600, there were 26,052 and 90,634 regular and emergency Food Stamp recipients in 1976, a total of 116,686. In Table 39, per acre yield of Chinese cabbage increased from 5.75 tons in 1978 to 121 tons in 1979. It is doubtful that Guam farmers sold \$425,000 worth of produce to the military outlets in 1979 as reported in Table 50. Therefore, users of this publication are advised to use discretion.

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GENERAL

Table 1
Area of Land and Water in Guam, 1982

	Total Area	Federal	Non Federal
		(acres)	
A. Land Area			
Crop Land	14,185	0	14,185 ¹
Pasture Land	11,826	0	11,826 ¹
Range Land	21,454	8,064 ²	13,390 ²
Transition Zones	9,000	5,640 ²	3,360 ²
Forest Land	51,058	21,155 ²	29,903
Urban Land	27,881	11,045	16,836
Subtotal:	135,404	45,904	89,500
B. Water Area			
Lake Fena	196	196	
Subtotal:	196	196	
C. Total Land and Water	135,600	46,100	89,500

¹1978 Census of Agriculture: Guam; see source cited below.

²Estimates of William S. Null, Chief of Division of Forestry and Soil Resources, Guam Department of Agriculture.

Sources: Forestry and Soil Resources Division, Department of Agriculture. Government of Guam, Draft Information for Territorial Forestry Resources Program Plan: Territory of Guam, January 1982.

U.S. Department of Commerce, Bureau of Census, 1978 Census of Agriculture: Guam, 1980.

Table 2
Land in Farms on Guam by Land Use, 1970-1978¹

	1970	1975	1978	1982
		(Acres)		
Used for crops	2,223	2,312	1,421	1,757
Used for pasture	6,622	1,275	739	678
Not used for crops or pasture	1,872	11,515	12,002	2,319
Used for pasture	9,475	12,946	11,169	3,563
Not used for pasture or grazing	1,378	138	638	5,593
Other land	4,577	2,018	2,651	12,753

¹Data for 1970 and 1975 were originally reported in hectares.

Source: U.S. Department of Commerce, Bureau of Census, Census of Agriculture: Guam, various years.

Table 3
Farms and Land in Farms on Guam by Size, 1970-1982¹

	1970		1975		1978		1982	
	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres
Total	1,121	26,147	1,576	29,754	1,999	28,608	2,044	26,662
Less than 1 ha	535	410	968	662	1,525	1,116	928	347
1 to 2 ha	337	1,134	357	1,228	315	1,094	734	1,025
3 to 4 ha	114	953	122	1,035	67	571	113	403
5 to 7 ha	36	538	47	724	31	415	101	589
8 to 9 ha	20	430	23	499	16	336	35	292
10 to 19 ha	36	1,129	27	968	19	650	63	812
20 to 39 ha	20	1,346	18	1,055	12	30(D) ²	31	779
40 to 49 ha	5	566	4	427	2	5(D) ²	5	207
50 ha or more	18	19,641	10	23,156	12	23,428	25	83

¹ Data for 1970-1978 were originally reported in hectares.

² Data withheld to avoid disclosing figures for individual farms or operations.

Source: U.S. Department of Commerce, Bureau of Census, Census of Agriculture: Guam, various years.

Table 4
Guam Farm Survey by Number and Size, 1981-1983¹

Farm Size	Number of Farms		
	1981	1982	1983
0.5 to 1 ac.	54	12	24
1.5 to 2 ac.	26	26	13
2.5 to 3 ac.	15	16	11
3.5 to 4 ac.	11	12	9
4.5 to 5 ac.	9	13	8
5.5 to 8 ac.	8	14	17
8.5 to 10 ac.	5	6	6
10.5 to 20 ac.	4	9	13
20 ac. or more	3	9	6
Total farms	135	116	107
Total acres	541.5	1,104.8	617.7
Average size	4.0	9.5	6.6

¹The 1981 survey was conducted by Guam Environmental Protection Agency and the 1982 and 1983 surveys were carried out by Dr. Claron Bjork at the College of Agriculture and Life Sciences, University of Guam.

Sources: Guam Environmental Protection Agency, The Impact of Agricultural Activity on Guam's Water Quality, unpublished. C.D. Bjork, Pesticide and Crop Survey of Guam Farmers: 1982, and Pesticide Use and Crop Survey of Guam Farmers: 1983, unpublished.

Table 5
Farms and Land in Farms on Guam by Tenure of Operators, 1975-1982

	1975		1978		1982	
	Farms	Acres	Farms	Acres	Farms	Acres
Total	1,576	29,766	1,999	28,619	2,044	26,662
Full owners	1,208	28,160	1,609	27,742	1,595	25,096
Part owners	45	358	31	237	27	251
Tenants	81	225	116	148	138	388
Permittees	216	904	93	200	237	93
Nonpermittees	16	79	116	205	23	41
Others	10	40	34	89	24	9

Source: U.S. Department of Commerce, Bureau of Census, 1982 Census of Agriculture: Guam, 1983.

Table 6
 Guam Farm Operators Reporting
 Days of Work Off-farm, 1978 and 1982

No. of Days	Number of Operators	
	1978	1982
None	281	609
1 to 49	91	50
50 to 99	196	34
100 to 149	119	59
150 to 199	138	50
200 or more	1,174	1,242

Source: U.S. Department of Commerce, Bureau of Census,
Census of Agriculture: Guam, various years.

Table 7
Guam Farm Operators by Age Group, 1970-1982

Age	Number of Operators			
	1970	1975	1978	1982
Under 25	10	28	20	31
25 to 34	83	172	221	244
35 to 44	225	334	423	403
45 to 54	258	511	725	606
55 to 64	188	333	414	508
65 or over	112	184	196	252
Average age	50	49	49	50

Source: U.S. Department of Commerce, Bureau of Census,
Census of Agriculture: Guam, various years.

Table 8
Farm Labor on Guam, 1975-1978

	1975	1978	1982
		(Workers)	
Unpaid labor	3,349	3,882	3,128
Less than 25 days	232	175	306
25 to 149 days	1,386	645	893
150 days or more	1,731	3,062	1,929
Paid labor	147	86	107
Less than 25 days	11	1	24
25 to 149 days	5	9	31
150 days or more	131	76	52

Source: U.S. Department of Commerce, Bureau of Census, Census of Agriculture: Guam, various years.

Table 9
 Number of Agricultural Employees on Guam by Residency Status, 1972-1979

Year ¹	Total Employees on Payrolls	Non-immigrant Employees	Permanent Resident Aliens
1972	29	18	N/A ²
1973	51	41	1
1974	120	70	10
1975	111	52	14
1976	131	81	21
1977	147	94	15
1978	100	66	10
1979	100	2	N/A

¹ As of March of each year

² N/A not available

Source: Guam Bureau of Planning, Immigration and Nationality Act: Impacts and Issues on Guam, June 1980.

Table 10
 Agricultural Employment: Workers on Farms, State of Hawaii, annual average, 1972-83¹

Year	Self employed farm operators	Unpaid family members	Hired workers	Sugar	Pineapple	Other
1978	2,890	1,810	11,600	4,950	2,520	4,100
1979	3,020	1,520	10,800	4,950	2,520	3,300
1980	3,400	1,100	10,550	4,840	2,510	3,200
1981	3,100	900	10,500	4,875	1,975	3,650
1982	2,600	1,300	13,000	4,900	3,750	4,350
1983	2,500	1,500	13,000	4,850	3,250	4,600

¹ Quarterly survey discontinued May 1981. Averages for 1981 are only for January and April quarters and therefore not comparable with previous years. Data for 1982 is based on annual survey for week of July 11 - 17.

Source: Hawaii Dept. of Agriculture, Statistics of Hawaiian Agriculture: 1983, Honolulu, June 1983.

Table 11
Sources of Agricultural Financing on Guam, 1975-1978

Sources	1975	1978
	(Farms)	
Operator		
1 to 24 %	8	2
25 to 49 %	7	-
50 to 74 %	46	44
75 to 99 %	19	3
100 %	1,357	1,718
Private		
1 to 24 %	4	-
25 to 49 %	3	2
50 to 74 %	12	35
75 to 99 %	1	-
100 %	47	215
Commercial		
1 to 24 %	6	1
25 to 49 %	13	1
50 to 74 %	24	-
75 to 99 %	4	-
100 %	17	-
Government		
1 to 24 %	11	-
25 to 49 %	5	1
50 to 74 %	7	6
75 to 99 %	8	-
100 %	13	15
Other		
1 to 24 %	3	-
25 to 49 %	-	-
50 to 74 %	1	2
75 to 99 %	5	-
100 %	77	2

Source: U.S. Department of Commerce, Bureau of Census,
Census of Agriculture: Guam, various years.

Table 32
Guam's Production of Fruits and Vegetables, Fiscal Year 1980

COMMODITY	Harvested Acres (Trees)	Pounds
Avocadoes	(736)	102,460
Bananas	8.03	191,000
Beans, K.W.	8.16	31,692
Beans, Long	23.35	90,217
Beans, Wing	0.91	12,199
Beans, Bush	2.50	7,500
Bittermelon	5.56	80,895
Breadfruit	(130)	200,500
Cabbage, Chinese ²	1.17	11,464
Cabbage, Head	4.12	45,336
Cassava	1.17	14,987
Chayote	7.30	14,600
Coconuts	(1,200)	175,100
Corn	5.61	14,222
Cucumber	23.66	333,257
Eggplant	5.58	52,186
Guavas	(890)	30,400
Lemons	(234)	10,100
Limes	(320)	13,400
Mangoes, Carabao	(65)	11,200
Mangoes, Saipan	(196)	34,300
Melon, Cantaloupe	6.73	84,684
Melon, Honeydew	-	-
Melon, Others	3.50	22,680
Okra	2.38	8,969
Oranges	(152)	7,950
Onion, Green	11.25	37,254
Papayas	(740)	20,995
Pepper, Hot	1.30	8,766
Pepper, Bell	8.23	25,245
Pineapples	17.85	87,063
Pumpkins and Tips	1.03	7,290
Radishes	4.40	32,719
Squash, White	2.68	32,374
Squash, Others	1.70	20,600
Sweet Potatoes	8.73	83,174
Tangerines	(375)	12,269
Taro and Tops	22.53	44,933
Tomatoes	4.57	43,806
Watermelon	50.38	893,085
Yams	1.18	11,553
Other Crops	2.08	13,250
(5,038)		
TOTAL	248.18	2,975,674

¹ Includes cooking and eating types.

² Includes local pechay.

Source: Guam Department of Agriculture Annual Report.

Table 33
Guam's Production of Fruits and Vegetables, Fiscal Year 1981

COMMODITY	Harvested Acres (Trees)	Pounds
Avocados ¹	(1,430)	207,350
Bananas	14.79	352,100
Beans, K.W.	12.98	38,940
Beans, Long	40.71	154,700
Beans, Wing	4.75	13,650
Beans, Bush	-	-
Bittermelon	16.93	152,370
Breadfruit	(275)	425,700
Cabbage, Chinese ²	8.33	132,635
Cabbage, Head	1.75	11,500
Cassava	12.40	68,240
Chayote	4.42	49,680
Coconuts	(1,660)	298,400
Corn	3.25	12,200
Cucumber	56.24	536,400
Eggplant	27.93	128,700
Guavas	(1,190)	47,600
Lemons	(1,020)	69,800
Limes	(890)	42,400
Mangoes, Carabao	(108)	32,560
Mangoes, Saipan	(146)	41,040
Melon, Cantaloupe	12.70	71,140
Melon, Honeydew	3.00	19,500
Melon, Others	8.00	48,100
Okra	7.58	23,600
Oranges	(1,119)	114,210
Onion, Green	3.80	12,300
Papayas	(3,460)	110,750
Pepper, Hot	4.60	13,800
Pepper, Bell	19.00	91,675
Pineapples	-	-
Pumpkins and Tips	1.75	9,200
Radishes	3.60	28,300
Squash, White	13.50	137,100
Squash, Others	10.33	125,450
Sweet Potatoes	22.25	249,200
Tangerines	(674)	32,350
Taro and Tops	30.20	64,250
Tomatoes	14.28	74,970
Watermelon	200.20	2,098,000
Yams	1.50	12,100
Other Crops	13.25	56,850
(11,972)		
TOTAL	574.02	6,207,810

¹ Includes cooking and eating types.

² Includes local pechay.

Source: Guam Department of Agriculture Annual Report.

Table 34
Guam's Production of Fruits and Vegetables, Fiscal Year 1982

COMMODITY	Harvested Acres (Trees)	Pounds
Avocadoes	(1,010)	202,500
Bananas ¹	16.20	240,300
Beans, K.W.	6.64	19,900
Beans, Long	36.62	117,180
Beans, Wing	3.75	13,500
Beans, Bush	1.25	3,900
Bittermelon	5.50	66,000
Breadfruit	(100)	100,000
Cabbage, Chinese ²	6.18	60,180
Cabbage, Head	14.48	217,500
Cassava	10.50	56,300
Chayote	3.94	27,100
Coconuts	(2,000)	150,000
Corn	4.45	15,000
Cucumber	49.22	487,400
Eggplant	8.36	85,600
Guavas	(1,850)	49,600
Lemons	(920)	34,000
Limes	(870)	24,700
Mangoes, Carabao	(100)	18,500
Mangoes, Saipan	(130)	29,000
Melon, Cantaloupe	12.50	118,360
Melon, Honeydew	2.25	9,300
Melon, Others	5.10	21,200
Okra	3.21	6,500
Oranges	(990)	110,500
Onion, Green	1.80	5,100
Papayas	(3,100)	93,000
Pepper, Hot	1.87	2,000
Pepper, Bell	9.76	36,500
Pineapples ³	5.50	-
Pumpkins and Tips	2.00	8,700
Radishes	3.00	17,100
Squash, White	11.30	105,000
Squash, Others	8.25	95,100
Sweet Potatoes	4.25	56,200
Tangerines	(480)	18,000
Taro and Tops	16.25	40,600
Tomatoes	29.85	164,175
Watermelon	144.50	1,867,500
Yams	2.10	3,800
Other Crops	12.50	36,200
(11,550)		
TOTAL	443.08	4,832,995

¹ Includes cooking and eating types.

² Includes local pechay.

³ Data not available on poundage.

Source: Guam Department of Agriculture Annual Report.

Table 35
Guam's Production and Value of Fruits and Vegetables, Fiscal Year 1983

COMMODITIES	1983 Harvested		Dollar Value
	Acres(trees)	Pounds	
Avocado ¹	(700)	121,320	54,594
Banana ¹	9.74	144,180	60,556
Beans, Bush	.75	2,250	2,340
Beans, K.W.	18.45	56,100	58,344
Beans, Long	38.43	126,819	107,796
Beans, Wing	.72	3,966	3,926
Bittermelon	8.00	67,200	50,400
Breadfruit	(78)	58,750	29,963
Broccoli	1.00	3,300	6,567
Cabbage, Chinese ²	3.90	32,760	23,915
Cabbage, Head	13.03	171,996	84,278
Cantaloupe	24.50	294,00	288,120
Cassava	3.91	20,370	11,611
Chayote	1.68	7,700	4,928
Coconut	(1,497)	148,200	71,136
Corn	7.00	16,800	16,468
Cucumber ³	40.95	589,680	259,459
Eggplant ³	11.33	74,778	51,597
Guavas	(1,136)	27,280	18,005
Lemon	(700)	22,400	16,800
Lime	(638)	17,860	13,395
Mango, Saipan	(127)	26,720	28,857
Mango, Carabao	(86)	15,980	17,258
Melon, Honeydew	.75	11,250	11,025
Melon, Pepino	21.75	195,750	191,835
Okra	1.25	3,000	2,760
Orange	(569)	55,790	25,664
Onion, Green	4.50	13,500	13,230
Papaya	(2,296)	68,900	34,450
Pepper, Hot (local)	1.85	6,526	7,505
Pepper, Bell	9.45	31,185	30,562
Potato, Sweet	9.00	83,700	48,546
Pumpkin & Tips	1.85	7,900	2,607
Radishes	1.40	10,547	6,856
Squash, White ⁴	9.03	81,300	42,276
Squash, Others ⁴	7.04	76,200	35,052
Tangerine	(526)	16,850	9,605
Taro & Tips ⁵	.25	443	305
Tomato ⁵	29.12	157,248	122,654
Watermelon	206.25	3,712,500	1,485,000
Yams	.75	3,750	2,813
Other Crops	10.32	29,670	21,363
	(8,353)		
TOTAL	499.85	6,616,418	3,374,417

¹Includes cooking and eating types.

²Includes local pechay

³Includes long and round types.

⁴Includes calabasa, condot and acorn squash.

⁵Includes standard and cherry tomatoes.

Source: Guam Dept. of Agriculture Annual Report.

Table 36
Guam's Production of Selected Crops in 1975, 1978 and 1982

Crop/Year	Production ¹		Sales	Sales as Percentage of Production ²
	U.S.	D.O.A.		
	(Pounds)			(Percent)
<u>Beans, Green</u>				
1975	72,618	228,003	50,876	70
1978	89,396	250,470	56,648	63
1982	143,173	137,080	101,221	71
<u>Bittermelon</u>				
1975	30,801	157,720	25,561	83
1978	29,635	25,640	14,480	49
1982	64,111	66,000	54,160	84
<u>Cabbage, Chinese</u>				
1975	183,806	215,822	165,950	90
1978	20,432	36,934	9,036	44
1982	67,099	60,180	49,135	73
<u>Cabbage, Head</u>				
1975	12,545	20,114	7,885	63
1978	23,421	67,490	13,010	56
1982	82,423	217,500	55,071	67
<u>Cucumber</u>				
1975	212,959	152,389	173,684	82
1978	118,819	979,200	93,515	79
1982	658,248	487,400	601,906	91
<u>Eggplant³</u>				
1975	143,605	388,241	103,915	72
1978	74,127	206,100	29,745	40
1982	107,904	85,600	62,100	58
<u>Peppers</u>				
1975	36,028	93,369	9,415	26
1978	34,710	15,397	13,208	38
1982	42,534	36,500	22,167	52
<u>Sweet Potato</u>				
1975	43,277	99,024	10,895	25
1978	56,112	216,602	15,350	27
1982	88,285	56,200	43,135	49
<u>Tomato</u>				
1975	92,906	299,583	68,150	73
1978	30,569	207,300	12,367	40
1982	105,138	164,175	73,696	70
<u>Watermelon</u>				
1975	115,066	360,814	91,750	80
1978	387,923	3,323,326	356,715	92
1982	422,455	1,867,500	345,240	82

¹There are significant differences between figures reported by U.S. Bureau of Census and Guam Dept. of Agriculture.

²Derived from U.S. Census data.

³The U.S. Census figures did not separate long and round eggplant while Guam Dept. of Agriculture figures included both varieties in 1975 and 1982 but only long eggplant was reported in 1978.

Source: Guam Dept. of Agriculture Annual Report, various years; U.S. Dept. of Commerce, Census of Agriculture: Guam, various years.

Table 37
Beans¹ Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	21.2	89.9	4.2	120	8.3
1976	11.5	31.7	2.8	130	8.5
1977	13.8	45.5	3.3	160	7.5
1978	15.9	52.5	3.3	200	6.5
1979	28.8	280.3	9.7	210	6.5
1980	8.2	31.7	3.9	130	8.5
1981	13.0	38.9	3.0	130	10.0
1982	6.6	19.9	3.0	130	7.7
1983	18.5	56.1	3.0	185	7.4

¹Kentucky wonder beans for Guam and snap beans for Hawaii.

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 38
Bittermelon Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	51.1	157.7	3.1	23	16.5
1976	9.2	18.6	2.0	20	16.5
1977	9.2	88.3	9.6	26	17.3
1978	2.7	25.6	9.5	22	15.0
1979	5.3	513.9	97.0	26	12.3
1980	5.6	80.9	14.5	14	15.7
1981	17.0	152.4	9.0	25	11.6
1982	5.5	66.0	12.0	16	11.6
1983	8.0	67.2	8.4	20	13.0

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 39
Chinese Cabbage Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	81.4	215.8	2.7	250	25.1
1976	15.2	26.1	1.7	260	24.9
1977	15.2	180.0	11.8	270	26.3
1978	3.2	36.9	11.5	270	25.1
1979	6.3	1,523.9	241.9	335	19.7
1980	1.2	11.5	9.6	350	19.7
1981	8.3	131.6	15.8	310	21.6
1982	6.2	60.2	9.7	330	23.7
1983	3.9	32.8	8.4	370	23.6

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 40
Head Cabbage Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	8.1	20.1	2.5	420	27.5
1976	16.0	46.1	2.9	410	30.0
1977	29.0	442.0	14.6	440	29.5
1978	23.4	67.5	2.9	460	30.0
1979	40.4	254.3	6.3	450	30.0
1980	4.1	45.3	11.1	460	29.5
1981	1.7	11.5	6.8	510	25.0
1982	14.5	217.5	15.0	540	25.5
1983	13.0	172.0	13.2	550	27.3

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 41
Corn Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	38.8	92.6	2.4	268	2.4
1976	5.4	8.4	1.6	335	4.0
1977	7.0	10.2	1.5	410	4.0
1978	7.7	11.8	1.5	400	4.0
1979	13.1	40.6	3.1	380	4.0
1980	5.6	14.2	2.5	250	3.8
1981	3.3	12.2	3.7	290	3.6
1982	4.5	15.0	3.3	170	3.3
1983	7.0	16.8	2.4	250	3.5

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 42
Cucumber Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	40.5	152.4	3.8	200	18.5
1976	42.2	103.0	2.4	260	18.5
1977	43.0	619.2	14.4	260	16.5
1978	170.0	979.2	5.8	260	16.5
1979	22.1	126.4	5.7	270	17.5
1980	23.7	333.3	14.1	210	22.0
1981	56.2	536.4	9.5	250	20.0
1982	49.2	487.4	9.9	225	19.3
1983	41.0	589.7	14.4	250	20.8

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 43
Eggplant¹ Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	86.2	380.6	4.4	45	27.0
1976	15.4	44.7	2.9	35	32.0
1977	22.0	198.0	9.0	55	25.9
1978	22.9	206.1	9.0	65	26.8
1979	29.8	293.9	9.9	60	26.2
1980	5.6	52.2	9.3	60	25.7
1981	28.0	128.7	4.6	60	35.7
1982	8.4	85.6	10.2	45	25.1
1983	11.3	74.8	6.6	60	24.7

¹Long eggplants only.

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 44
Bell Pepper Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	41.8	93.4	2.2	48	15.1
1976	8.5	12.4	1.5	50	16.6
1977	18.0	59.4	3.3	70	15.3
1978	11.6	15.4	1.3	60	13.7
1979	22.4	206.8	9.2	65	13.7
1980	8.2	25.3	3.1	45	13.8
1981	19.0	91.7	4.8	55	13.8
1982	9.8	36.5	3.7	55	14.9
1983	9.5	31.2	3.3	80	14.9

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 45
Sweet Potato Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	35.0	99.0	2.8	68	16.3
1976	24.0	44.6	1.9	90	15.2
1977	34.0	216.2	6.4	95	12.5
1978	41.1	216.6	5.3	130	11.7
1979	n/a	n/a	n/a	150	11.6
1980	8.7	83.2	9.6	100	13.0
1981	22.3	249.2	11.2	90	13.9
1982	4.3	56.2	13.1	130	11.8
1983	9.0	83.7	9.3	190	9.8

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 46
Tomato Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	117.6	299.6	2.6	230	21.0
1976	16.0	26.6	1.7	200	23.5
1977	16.0	144.0	9.0	240	25.0
1978	22.7	207.3	9.1	250	28.0
1979	1.6	14.5	9.0	270	23.0
1980	4.6	43.8	9.5	270	28.5
1981	14.3	75.0	5.2	280	29.5
1982	29.9	164.2	5.5	260	30.0
1983	29.1	157.3	5.4	290	30.0

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 47
Watermelon Production in Guam and Hawaii, 1975-1983

Year	Guam			Hawaii	
	Harvest (ac)	Production (1,000 lb)	Yield (1,000 lb/ac)	Harvest (ac)	Yield (1,000 lb/ac)
1975	144.7	360.8	2.5	202	11.9
1976	39.3	63.1	1.6	180	8.5
1977	51.0	818.0	16.0	210	9.9
1978	207.2	3,323.3	16.0	190	9.8
1979	10.4	171.6	16.5	125	9.0
1980	50.4	893.1	17.7	130	10.4
1981	200.2	2,098.0	10.5	150	10.7
1982	144.5	1,867.5	12.9	165	13.3
1983	206.3	3,712.5	18.0	310	12.5

Sources: Guam Department of Agriculture Annual Report; Hawaii Department of Agriculture, Statistics of Hawaiian Agriculture.

Table 48
Production Costs and Yields of Selected Crops Grown in Guam and Hawaii

Crop	Guam 1977		Hawaii 1982		Islands
	lb/ac.	\$/ac.	lb/ac.	\$/ac.	
Cabbage, Head	22,000	2,472	25,000	2,128	(Hawaii)
Cucumber	24,000	2,513	15,000	4,492	(Maui/Molokai)
Daikon	16,400	1,790	13,000	1,066	(Hawaii)
Eggplant	12,000	2,266	32,700	9,607	(Kauai)
Pepper, Bell	5,500	2,266	51,000	13,950	(Kauai)
	31,482 ¹	9,761 ¹	30,000	11,614	(Maui/Molokai)
Tomato	10,000	2,266	40,000	4,112	(Maui)

¹These are 1983 figures.

Sources: Guam's figures are 1977 estimates made by the College of Agriculture and Life Sciences, University of Guam, and T. Khamoui and V.M. Russo, An Economic Assessment of Growing Bell Peppers on Guam, AES Publication No. 31, Agricultural Experiment Station, Univ. of Guam, 1983; Hawaii's figures are obtained from USDA-SCS Technical Guide Section V-C, Honolulu, Hawaii, 1982.

Table 49
Guam Agricultural Production, 1972-1981

Fiscal Year	<u>Fruits & Vegetable</u>		<u>Poultry</u>		<u>Pork</u>		<u>Beef</u>		<u>Eggs</u>		<u>Total</u>
	\$	lb	\$	lb	\$	lb	\$	lb	\$	Dozen	\$
(In Thousand) ¹											
1972	478	2,504	73	195	337	450	106	157	1,446	2,065	2,440
1973	623	3,129	84	210	413	550	98	140	1,628	2,265	2,846
1974	798	3,485	92	230	525	700	91	130	1,725	2,436	3,231
1975	938	3,750	116	258	750	997	87	116	2,099	2,500	3,990
1976	330	1,199	57	120	428	513	62	79	2,204	2,008	3,081
1977	1,842	3,684	59	118	536	616	61	75	2,314	2,108	4,812
1978	3,639	6,617	81	124	890	1,047	62	73	2,528	2,298	7,200
1979	3,402	6,186	86	133	943	1,110	60	71	2,452	2,229	6,944
1980	1,726	2,976	64	91	868	964	49	52	2,087	1,814	4,793
1981	1,052	1,570	67	196	911	1,012	52	54	2,191	1,904	4,273
1982	3,583	4,832	70	206	957	1,063	54	57	1,622 ²	1,134	6,287

¹The value of livestock is calculated using live weight at time of slaughter.

²An egg farm discontinued production in 1982.

Source: Guam Department of Agriculture, see 1983 Guam Annual Economic Review, Guam Department of Commerce.

Table 50
Guam's Fruits and Vegetables by Outlets, 1972-1981

Fiscal Year	Retail Store		Farmers		Military		All Outlets	
	lb	\$	lb	\$	lb	\$	lb ¹	\$
(In thousand)								
1972	1,294	275	298	69	95	29	1,686	373
1973	2,119	576	286	64	80	27	2,486	667
1974	2,236	513	386	91	84	27	2,706	632
1975	2,414	608	451	117	88	29	2,954	755
1976	810	405	240	120	60	30	1,109	555
1977	2,395	1,197	737	368	184	92	3,316	1,658
1978	5,309	2,654	833	417	205	103	6,349	3,174
1979	3,866	2,126	1,546	851	773	425	6,186	3,402
1980	569	252	517	191	100	55	1,186	497
1981	308	145	386	179	78	35	772	358
1982	2,164	1,238	2,336	1,941	333	205	4,832	3,583

¹ May differ from the preceding table due to home consumption, wastages, gifts, etc.

Source: Guam Department of Agriculture, see 1983 Guam Annual Economic Review, Guam Department of Commerce.

Table 51
Guam's Production of Primary Crops, 1975-1981

CROPS	1975	1976	1977	1978	1979	1980	1981
	(1,000 pounds)						
Watermelon	361	63	818	3,323	172	893	2,098
Cucumber	152	103	619	979	126	333	536
Head Cabbage	236 ¹	46	422	67	254	45	12
Sweet Potato	99	45	216	215	-	83	249
Eggplant	389	45	198	206	294	52	129
Cantaloupe and Melons	189	30	192	590	107	107	139
Chinese Cabbage	-	26	180	37	1,524	11	132
Cooking Banana	458 ²	52	150	97	211	191	352
Tomato	300	27	144	207	14	44	75
Eating Banana	-	142	142	92	112	N/A	N/A
Long Beans	N/A ³	56	94	198	296	90	155

¹ Chinese cabbage is included.

² Eating banana is included.

³ N/A not available

Source: Guam Department of Agriculture, see 1983 Guam Annual Economic Review, Guam Department of Commerce.

Table 52
Guam's Fresh Fruits and Vegetables Purchased by the Navy by Month and Crop, 1982

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Pounds)													
Bean, K.W.	0	531	836	459	446	402	108	411	300	30	0	381	3904
Bean, YD LNG	0	41	1150	959	705	660	678	799	405	62	0	488	5947
Bittermelon	0	661	621	1547	813	390	90	33	291	0	0	315	4761
Cabbage, head	0	7793	2012	20368	1203	5201	413	0	9224	4143	2150	4547	57054
Cantaloupe	1840	1490	0	7962	1447	1523	366	0	0	0	0	0	14628
Cucumber	1854	7938	5996	11594	5360	6083	9332	5452	5565	3115	1480	5531	69300
Eggplant, long	0	666	1647	1882	910	1378	571	117	192	29	0	169	7561
Honeydew	0	0	0	2072	1644	967	592	0	454	761	0	552	7042
Pepper, bell	0	390	1378	2945	128	912	200	0	0	0	0	0	5953
Pineapple	0	0	104	0	0	7258	5229	6741	525	1105	1352	711	23025
Radish	0	0	294	195	0	265	659	0	0	0	0	95	1508
Tomato	0	379	3496	11627	3121	2470	949	0	0	0	0	0	22042
Watermelon	0	1272	10292	26457	5182	18602	13144	8519	5380	366	0	6013	95227
Other	0	702	1934	7334	2046	1041	1037	527	575	373	43	1259	16871
TOTAL	3694	21863	29760	95401	23005	47152	33368	22599	22911	9984	5025	20061	334823

Source: U.S. Navy, Local Fresh Fruit and Vegetable Deliveries, weekly report.

Table 53
Guam's Fresh Fruits and Vegetables Purchased by the Navy by Month and Crop, 1983

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Pounds)													
Bean, K.W.	544	235	103	508	245	249	287	390	512	147	175	427	3822
Bean, YD Lng	347	66	357	852	567	411	833	530	458	427	180	1029	6057
Bittermelon	44	0	883	934	25	0	288	366	396	97	84	0	3117
Cabbage, head	258	7991	11931	9435	13292	7615	5154	3257	4023	4296	0	0	67252
Cantaloupe	0	0	4147	1689	670	2432	1416	52	0	0	0	344	10750
Cucumber	5017	3387	5219	10375	7443	4856	7231	5041	6678	3698	2119	6751	67815
Eggplant, Long	273	460	708	1618	585	529	265	583	383	278	364	672	6718
Honeydew	0	0	0	794	925	0	0	0	0	0	0	0	1719
Pepper, Bell	0	946	3623	2828	5466	1920	1311	1077	55	0	0	0	17226
Pineapple	904	0	2673	6210	3570	5049	949	0	0	0	2035	1467	22857
Radish	39	240	138	564	43	0	0	307	0	0	0	0	1331
Tomato	1376	3816	7355	11732	6234	519	709	0	0	0	0	0	31741
Watermelon	5344	9060	8761	17928	7427	12667	5702	11184	9546	0	3694	6137	97450
Other	963	1211	1694	7372	2095	1194	2387	1166	1641	478	659	2670	23530
TOTAL	15109	27412	47592	72839	48587	37441	26532	23953	23692	9421	9310	19497	361385

Source: U.S. Navy, Local Fresh Fruit and Vegetable Deliveries, weekly report.

Table 54
 Volume and Value of Guam's Fresh Fruits
 and Vegetables Purchased by the Navy by Month, 1982-1984

Month	Pounds			Dollars		
	1982	1983	1984	1982	1983	1984
January	3694	15109	12979	2085	8089	7474
February	21863	27412	32958	11165	15668	22666
March	29760	47592	46662	18650	31186	33581
April	95401	72839	40218	56263	45425	24611
May	23005	48587	24794	14943	29718	15718
June	47152	37441	17903	26447	19911	10362
July	33368	26532	29153	17951	15310	14939
August	22599	23953	26847	12680	12385	12152
September	22911	23692	6396	12356	12027	3374
October	9984	9421	N/A ¹	5262	4993	N/A
November	5025	9310	N/A	2662	5397	N/A
December	20061	19497	N/A	10243	10981	N/A
TOTAL	334823	361385	N/A	190707	211090	N/A

¹N/A not available

Source: U.S. Navy, Local Fresh Fruit and Vegetable Deliveries, weekly report.

Table 55
Average Monthly Wholesale Prices of Selected Guam Produce, 1983

Crop	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(Cents/lb)												
Beans, K.W.	125	125	125	125	121	125	125	125	125	125	125	125
Beans, Long	120	120	120	120	120	107	84	102	100	100	100	100
Cabbage, Chinese	N/A ¹	N/A	65	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cabbage, Head	45	47	50	46	43	42	47	53	55	52	N/A	N/A
Cantaloupe	N/A	N/A	70	70	70	66	80	80	N/A	N/A	N/A	80
Cucumber	30	43	43	34	37	29	36	37	37	43	43	44
Eggplant	70	60	60	68	60	60	60	48	54	60	60	60
Pepper, Bell	N/A	100	103	100	100	100	98	80	100	N/A	N/A	N/A
Sweet, Potato	60	60	55	60	N/A	N/A	N/A	N/A	62	N/A	60	60
Tomato	95	95	95	95	95	95	90	N/A	N/A	N/A	N/A	N/A
Watermelon	44	43	43	42	42	44	41	45	45	N/A	50	50

¹N/A denotes no delivery and prices are not available.

Source: U.S. Navy, Local Fresh Fruit and Vegetable Deliveries, weekly report, Guam.

Table 56
Guam Production and Per Capita
Consumption of Local Fruits and Vegetables, 1966-1983

Fiscal Year	Production (1,000 lb)	Population	Per capita consumption of local production (pounds)
1966	1,809	N/A ¹	N/A
1967	1,435	N/A	N/A
1968	1,878	N/A	N/A
1969	2,230	N/A	N/A
1970	2,411	84,996	28.4
1971	1,820	N/A	N/A
1972	2,504	N/A	N/A
1973	3,129	N/A	N/A
1974	3,485	N/A	N/A
1975	3,750	99,500	37.7
1976	1,204	N/A	N/A
1977	3,684	99,600	37.0
1978	6,617	100,700	65.7
1979	6,186	N/A	N/A
1980	2,976	105,816	28.1
1981	6,208	N/A	N/A
1982	4,833	N/A	N/A
1983	6,616	N/A	N/A

¹N/A not available

Source: Guam Department of Agriculture Annual Report, and Guam Department of Commerce, Quarterly Economic Review, various issues.

Table 57

U.S. Per Capita Consumption of Fresh Fruits and Vegetables, Retail Weight Equivalent, 1970-1981

Year	Fruits	Melons	Vegetables	Potatoes and Sweetpotatoes	Beans, peas nuts, and soya products	Total ¹
(Pounds)						
1970	78.9	25.1	141.4	82.3	16.1	343.8
1971	78.2	24.5	138.1	81.4	16.4	338.6
1972	74.9	23.8	139.1	82.2	15.9	335.9
1973	73.8	23.6	139.8	78.0	18.5	333.7
1974	76.4	21.0	141.6	74.7	16.1	329.8
1975	80.8	21.2	140.3	81.2	17.9	341.4
1976	82.8	22.3	141.3	77.7	17.3	341.4
1977	79.5	23.1	143.6	81.9	17.0	345.1
1978	79.0	23.8	145.4	81.6	16.3	346.1
1979	80.8	22.9	146.4	89.2	15.9	355.2
1980	85.7	20.9	149.0	84.3	14.4	354.3
1981	87.3	23.0	147.1	79.4	15.0	351.8

¹ Includes consumption of home garden produce.

Source: U.S. Department of Agriculture, Food Consumption, Prices, and Expenditures: 1960-1980, Economic Research Service, Statistical Bulletin Number 694, November 1982.

Table 58
Value of Guam's Imports of Fresh Fruits and Vegetables, 1977-1980

SITC	Commodity	1977	1978	1979	1980
(Dollars)					
0511	Oranges	198,942	124,830	1,077,114	548,588
	U.S.	188,395	108,350	941,984	473,648
	Japan	10,547	16,480	135,130	74,940
0512	Citrus fruits-nec ¹	102,650	84,990	223,497	285,124
	U.S.	102,219	84,990	216,134	283,918
	Japan	0	0	7,363	858
	Others	413	0	0	348
0513	Bananas	19,151	95,550	325,864	341,454
	U.S.	19,092	85,230	314,335	334,650
	Japan	0	1,980	10,727	0
	Micronesia	0	8,140	140	6,666
	Other	59	200	662	138
0514	Apples	235,173	173,220	211,358	414,510
	U.S.	229,232	157,410	192,771	393,660
	Japan	5,941	15,810	18,587	20,850
0515	Grapes	91,132	201,860	575,499	522,032
	U.S.	89,482	201,160	573,939	510,438
	Japan	1,650	700	1,560	11,594
0519	Fruits-nec ¹	178,948	426,877	1,394,347	1,056,840
	U.S.	128,527	329,680	1,252,699	926,412
	Japan	35,923	22,960	77,750	66,072
	Micronesia	12,978	71,557	49,234	62,774
	Other	1,520	2,680	14,664	1,582
0541	Potatoes	158,256	123,970	137,249	314,574
	U.S.	118,955	123,430	137,249	314,574
	Japan	2,812	0	0	0
	Other	36,489	540	0	0
0544	Tomatoes	78,632	266,510	794,537	625,416
	U.S.	66,122	203,520	783,146	606,634
	Japan	6,881	41,090	10,923	18,782
	Micronesia	5,629	21,900	468	0
0545	Vegetables, nec. ¹	656,874	1,328,980	2,630,177	2,862,945
	U.S.	552,070	970,400	2,021,659	2,564,796
	Japan	91,725	288,380	451,431	245,635
	Micronesia	13,079	21,240	55,365	7,570
	Other	0	48,960	101,722	44,944

¹ nec stands for "not elsewhere classified".

Source: Guam Dept. of Commerce, Guam Trade with the U.S. and Foreign Countries.

Table 59
Quantity and Value of Guam's Production and Importation of Fruits
and Vegetables, 1968-1980

	<u>Guam Production</u>		<u>Imports</u>		<u>Total</u>	Value of Guam Production as Percentage of Total Value
	lb	\$	lb	\$	\$	
(In thousand)						
1968	1,878	310	14,291	1,472	1,782	17.0
1969	2,230	405	9,429	1,167	1,572	26.0
1970	2,411	431	6,525	1,235	1,666	26.0
1971	1,820	355	7,036	1,529	1,884	19.0
1972	2,504	478	6,451	1,466	1,944	25.0
1973	3,129	623	N/A ¹	N/A	N/A	N/A
1974	3,485	798	N/A	N/A	N/A	N/A
1975	3,750	938	N/A	N/A	N/A	N/A
1976	1,199	330	N/A	N/A	N/A	N/A
1977	3,684	1,842	N/A	1,720	3,562	52.0
1978	6,617	3,639	N/A	2,827	6,466	56.0
1979	6,186	3,402	N/A	7,370	10,772	32.0
1980	2,976	1,726	N/A	6,972	8,697	20.0

¹N/A not available

Sources: W.P. Leon Guerrero, et al., Agricultural Development Plan for the Territory of Guam, p.19, Guam Bureau of Planning, 1978; Guam Dept. of Commerce, Guam Trade with the United States and Foreign Countries 1977-1980; Guam Dept. of Agriculture Annual Report, various years.

Table 60
Quantity of Guam's Monthly Imports of Fresh Fruits and Vegetables from Japan, 1981

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
Bean, string	48	31	39	27	25	0	0	0	97	34	30	46	377
Broccoli	0	32	105	215	104	0	0	0	19	30	25	0	530
Carrot	138	129	188	135	103	19	39	39	78	112	86	138	1204
Cauliflower	82	0	20	353	162	0	0	0	12	0	0	0	629
Celery	832	439	40	0	79	61	48	97	185	165	70	220	2236
Cucumber	897	628	354	634	608	425	164	186	1213	954	624	610	7297
Eggplant	339	384	296	222	157	68	67	53	170	176	100	277	2369
Ginger	103	103	130	152	122	95	19	19	76	217	74	181	1291
Lettuce	0	0	0	515	106	58	4	6	0	0	0	0	689
Mushroom	119	118	135	293	98	172	24	23	75	58	65	85	1265
Onion, green	1397	1104	1070	1310	706	465	240	58	383	737	615	1060	9145
Orange	0	10	24	82	0	0	0	0	0	0	0	25	141
Pea	51	34	27	46	32	4	3	3	0	0	18	13	231
Pepper, bell	606	728	839	956	476	353	198	198	728	3665	650	1317	10714
Potato, sweet	380	234	135	416	148	22	21	21	146	325	155	218	2221
Radish	1515	1411	1910	2086	1340	862	894	684	3393	3285	1991	2037	21408
Strawberry	84	261	450	508	925	0	0	0	0	10	1	62	2301
Tangerine	3013	1738	809	0	0	0	0	0	130	493	2271	5062	13516
Tomato	1924	1621	79	481	334	185	377	377	960	2427	541	1182	10434
Turnip	0	0	0	0	31	0	0	0	24	11	3	0	69
Yam	7	7	9	40	36	0	20	10	27	46	34	197	433
Other	2147	1086	1170	1648	855	648	691	536	5192	11485	4062	4171	33691
TOTAL	13742	10098	7829	10119	6447	3437	2809	2310	12854	24230	11415	16901	122191

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 61
Quantity of Guam's Monthly Imports of Fresh Fruits and Vegetables from Japan, 1982

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
Bean, string	66	65	14	16	25	36	64	34	27	211	41	49	648
Broccoli	134	0	301	0	0	102	0	18	49	0	16	0	620
Carrot	183	201	140	147	198	110	147	93	119	2325	110	55	3828
Cauliflower	393	0	264	0	16	100	101	141	49	0	25	657	1746
Celery	420	445	261	0	200	138	120	229	100	1430	200	413	3956
Cucumber	877	835	535	341	341	472	317	0	495	2214	606	763	7796
Eggplant	291	333	259	237	380	231	294	340	275	206	297	285	3428
Ginger	103	110	145	54	108	95	92	80	169	358	131	139	1584
Lettuce	23	119	206	61	398	15	369	58	34	1634	403	1329	4649
Mushroom	106	163	309	70	73	85	150	34	162	322	164	121	1759
Onion, green	1052	1163	885	732	555	495	0	830	502	2325	849	883	10271
Orange	13	350	405	155	225	25	0	0	0	0	0	0	1173
Pea	52	41	189	9	52	19	64	0	10	29	9	30	504
Pepper, bell	1325	1054	1256	798	837	891	926	1551	1306	2717	1150	4109	17920
Potato, sweet	708	724	327	244	170	285	172	130	298	1456	0	795	5309
Radish	3264	2248	1569	2392	884	1024	849	1634	1518	3441	1664	1951	22438
Strawberry	355	516	1238	463	113	0	0	0	0	0	0	204	2889
Tangerine	3709	3085	300	0	0	0	0	0	58	2070	1893	4117	15232
Tomato	2408	2018	611	363	255	272	139	456	772	5208	1173	2231	15906
Turnip	45	37	41	10	27	0	40	0	4	20	0	0	224
Yam	64	102	58	11	22	26	41	43	58	174	12	95	706
Other	2766	2289	772	294	532	1210	1403	2297	4865	22687	6005	9530	54650
TOTAL	18357	15898	10085	6397	5411	5631	5288	7968	10870	48827	14748	27756	177236

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 62
Quantity of Guam's Monthly Imports of Fresh Fruits and Vegetables from Japan, 1983

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
Bean, string	36	38	37	55	33	72	488	101	186	38	4	30	1118
Broccoli	0	0	25	270	48	0	33	0	0	153	0	0	529
Carrot	230	132	422	349	380	263	1646	220	432	112	150	313	4649
Cauliflower	299	364	0	0	49	82	693	101	115	0	0	0	1703
Celery	0	152	0	0	140	175	484	0	0	5	0	0	956
Cucumber	527	637	666	995	452	890	3280	756	2395	661	580	580	12419
Eggplant	468	489	565	706	242	505	1916	429	977	348	474	658	7777
Ginger	165	314	158	551	70	201	2002	216	340	379	134	240	4770
Lettuce	700	839	832	790	336	2085	8171	170	848	133	830	1754	17488
Mushroom	219	149	157	654	156	315	1778	212	663	910	93	355	5661
Onion, green	1288	1041	1206	1203	578	1223	3672	732	1665	712	1484	1289	16093
Orange	429	0	229	630	350	620	750	0	22	0	0	0	3030
Pea	38	15	44	254	42	60	671	52	194	20	0	0	1390
Pepper, bell	1426	1461	724	745	460	1238	5441	1115	2799	1461	2294	2346	21510
Potato, sweet	471	0	0	0	0	0	0	0	0	0	0	0	471
Radish	2997	1997	2500	2742	1931	3514	11477	2919	6567	2173	3361	3084	45262
Strawberry	275	1337	1391	846	120	38	0	0	0	0	0	1018	5025
Tangerine	3288	1119	185	0	0	0	0	20	154	1113	4219	6762	16860
Tomato	1874	2601	694	2035	980	1721	1639	1096	2633	811	797	635	17516
Turnip	19	20	22	15	12	0	114	5	83	0	143	279	712
Yam	135	50	77	35	12	64	196	82	117	0	121	221	1110
Other	1460	1389	1719	2094	3022	1987	9950	2672	14826	6181	6249	5964	57513
TOTAL	16344	14144	11653	14969	9413	15053	54401	10898	35016	15210	20933	25528	243562

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 63
Quantity of Chrysanthemum Imported to Guam from
Japan by Month, 1981-1984

Month	1981	1982	1983	1984
	(Kilograms)			
January	0	113	200	202
February	0	198	175	388
March	214	73	239	N/A ¹
April	96	53	556	252
May	45	30	105	250
June	25	60	265	N/A
July	15	72	873	73
August	15	50	181	74
September	9	40	261	156
October	25	2,060	0	
November	65	80	75	
December	216	159	263	

¹N/A not available

Source: Guam Department of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 64
Quantity of Guam's Monthly Imports of Fresh Fruits and Vegetables from Taiwan, 1981

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
Broccoli	374	132	80	246	235	12	0	0	748	360	791	623	3601
Cauliflower	0	0	0	0	0	0	0	0	0	0	15	105	120
Celery	114	34	23	33	30	37	21	21	49	39	30	30	461
Garlic	45	23	0	68	72	300	184	184	1100	74	764	1323	4137
Ginger	20	58	40	80	221	298	328	298	616	650	1333	935	4877
Lettuce	0	0	0	14	30	45	26	26	90	3	0	65	299
Mushroom	27	77	0	0	10	10	167	156	255	36	341	522	1601
Pea	0	0	0	0	16	0	55	0	0	0	135	333	539
Radish	0	0	0	0	0	0	36	36	34	110	7	147	370
Turnip	0	0	55	110	60	60	15	0	60	0	0	136	496
Other	663	508	55	186	171	322	369	360	250	138	882	913	4817
TOTAL	1243	832	253	737	845	1084	1201	1081	3202	1410	4298	5132	21318

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 65
Quantity of Guam's Monthly Imports of Fresh Fruits and Vegetables from Taiwan, 1982

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
Broccoli	1485	2513	1431	1183	617	403	582	196	247	1019	1314	1891	12881
Cauliflower	90	482	751	230	124	28	0	0	0	56	98	65	1824
Celery	75	45	39	24	55	46	21	9	75	103	200	77	769
Garlic	1458	1186	744	1350	2114	2929	2890	1566	1616	3973	1560	1922	23308
Ginger	1164	965	905	620	784	1228	1711	1020	744	2702	1001	1110	13954
Lettuce	80	248	74	27	71	15	73	14	75	155	100	34	966
Mushroom	842	883	352	488	866	864	1523	473	363	328	531	841	8354
Pea	203	527	198	316	515	477	766	314	335	904	694	487	5736
Radish	325	25	105	0	0	25	0	0	0	0	303	245	1028
Turnip	300	82	27	82	27	27	0	0	0	240	109	0	894
Other	185	268	248	219	628	516	1642	738	790	2380	1560	1438	10612
TOTAL	6207	7224	4774	4539	5801	6558	9208	4330	4245	11860	7470	8110	80326

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 66
Quantity of Guam's Monthly Imports of Fresh Fruits and Vegetables from Taiwan, 1983

CROP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
Broccoli	1567	326	1199	879	276	236	607	105	680	355	300	568	7098
Cauliflower	20	0	0	0	0	0	0	0	0	11	0	16	47
Celery	66	34	42	180	43	45	185	50	53	25	55	70	848
Garlic	933	130	190	1683	1244	1247	5808	1290	3534	154	806	838	17857
Ginger	1210	690	1309	840	1149	1045	7828	1516	3172	994	1389	1125	22267
Lettuce	253	41	104	90	45	42	191	28	8	32	14	66	914
Mushroom	769	247	754	613	270	699	2944	679	1137	110	567	793	9582
Pea	609	30	546	316	615	612	2988	449	351	53	562	733	7864
Radish	90	15	25	47	33	45	218	30	261	15	84	60	923
Turnip	0	0	0	0	0	0	0	0	0	23	0	61	84
Other	1101	383	483	599	262	953	2953	895	2212	34	2041	1913	13829
TOTAL	6618	1896	4652	5247	3937	4924	23722	5042	11408	1806	5818	6243	81313

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 67
 Quantity of Guam's Imports of Fresh
 Fruits and Vegetables from the Philippines, 1981-1983

CROP	1981	1982	1983
	(Kilograms)		
Ginger	805	1246	1312
Onion, Dry	584	619	1373
Other	101	151	214
TOTAL	1490	2016	2899

Source: Guam Dept. of Commerce, Customs Division, Station
 Report of Importation of Regulated Articles, monthly.

Table 68 -
Quantity of Guam's Imports of Fresh Fruits and Vegetables
from Micronesia, 1981-1983

CROP	1981	1982	1983
	(Kilograms)		
Banana	6818	25368	73293
Mango	0	1103	29116
Taro	0	137	3698
Tomato	0	0	327
Watermelon	0	0	77
Yam	0	142	35
Other	52	59	756
TOTAL	6870	26809	107302

Source: Guam Dept. of Commerce, Customs Division, Station
Report of Importation of Regulated Articles, monthly.

Table 69
Quantity of Guam's Importation of Fresh Fruits and Vegetables from Japan,
Taiwan, the Philippines, and Micronesia, 1981-1983

COUNTRY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
(Kilograms)													
JAPAN													
1981	13742	10098	7829	10119	6447	3437	2809	2310	12854	24230	11415	16901	122191
1982	18357	15898	10085	6397	5411	5631	5288	7968	10870	48827	14748	27756	177236
1983	16344	14144	11653	14969	9413	15053	54401	10898	35016	15210	20933	25528	243562
TAIWAN													
1981	1243	832	253	737	845	1084	1201	1081	3202	1410	4298	5132	21318
1982	6207	7224	4774	4539	5801	6558	9208	4330	4245	11860	7470	8110	80326
1983	6618	1896	4652	5247	3937	4924	23722	5042	11408	1806	5818	6243	81313
PHILIPPINES													
1981	112	77	53	267	328	40	79	68	43	10	173	240	1490
1982	40	339	94	0	173	90	102	305	394	13	228	238	2016
1983	275	341	369	120	452	25	1171	48	0	0	76	22	2899
MICRONESIA													
1981	0	0	0	0	936	290	209	27	1380	1234	920	1874	6870
1982	1062	1067	2004	1655	1491	2223	1684	3101	2573	3164	901	5884	26809
1983	7081	9823	22695	8444	5648	8060	25654	2312	4531	3998	6559	2497	107302

Source: Guam Dept. of Commerce, Customs Division, Station Report of Importation of Regulated Articles, monthly.

Table 70
Foods Imported to Guam from New Zealand, 1983

Meat	U.S. \$1,069,198
Dairy Products	887,543
Fish	1,587
Cereals	53,510
Sugar	81,722
Coffee, Tea	872
Edible Products	526
Beverages	5,877

Source: Department of Trade & Industry Auckland, New Zealand;
See Guam Business News, June 1984.

Table 71
Quantity of U.S. Produce Imported to Guam by Item, 1983¹

Produce	Unit ²	Jan. ³	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Alfalfa Sprouts	CTN											7	4	11
	FLT										18	19	16	53
Apples	CTN	305	1638	1062	944	720	1033	452	1512	2949	414	107		11,136
	SCK		200											200
Avocado	CTN	4	8	8	8	10	15	6	9	12	13	11		104
	LUG	4			5									9
Bananas	CTN									60	639	825	622	2,146
Beans	CRT										23	20	20	63
Bell Peppers	CTN	4	14	119	185	148	492	198	397	658	205	213		2,633
	CRT	55	372	297	15									739
Broccoli	CTN	15	70	29	42	33	72	52	104	267	244	255		1,183
Brussel Sprouts	CTN				1			3	10	7				21
Cabbage, Chinese	CTN			8	15	20	25	83	52	60	22	53		338
	CRT	20	7	28	44	241	49	133	55	278	122	81		1,058
Cabbage, Head	CTN	309	1186	2276	1594	1074	2087	1652	1923	2841	329	197		15,468
	CRT		150		47	14					47			258
Cantaloupe	CTN				4	35	64	31	8	27	48	21		238
	CRT	2	4	52	3		10			79	104	1		255
Carrots	CTN	70	727	682	344	262	438	81	590	344	107	181		3,826
	SCK	49	190	100	44	83	69	289	130	229		17		1,200
Cauliflower	CTN	23	12	84	64	85	123	129	94	159	99	77		949
Collard Green	CTN									11	57	33		101
	CRT									8	5	4		17
Corn	CTN					5				2	8	6	3	24
	CRT									8	11	21	28	68
Cucumber	CTN									25		25		50
	LUG									143	70	78		291
Eggplant	CTN									3	9	5		17
Garlic	CTN	3	183	62	103	121	100	66	102	282	39	15		1,076
Grapes	CTN	62		466	193	556	1034	215	760	255	42	570		4,153
	CRT	85		130					171					386
	LUG	21	858	859	405	147	177	638	922	2274	456	91		6,848

Table 71 (continued)
Quantity of U.S. Produce Imported to Guam by Item, 1983¹

Produce	Unit ²	Jan. ³	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Grapefruit	CTN		35	165	267	162	204	229	142	199	327	72	31	1,833
Green Onion	CTN		3		11	6	1	6	9	14	274	351	444	1,119
Kiwi	CTN					2		2			67	8	3	82
	FLT				5	4	5	1			3	11	14	43
Lemons	CTN		82	370	485	350	269	751	379	244	430	129	45	3,534
Lettuce	CTN		313	641	2396	1704	1528	2149	828	1556	2378	370	558	14,421
	CRT										23	4	4	31
Lime	CTN		1	2	10	3	6	12	3	5	17		4	63
	SCK						1							1
Mango	CTN				215	183	48	34	19			28	25	552
	FLT										25			25
Mushroom	CTN						5				80	103	83	271
	FLT										14			14
Mustard Green	CTN										6	23	28	57
	CRT										3	5	3	11
Nectarine	CTN					62	5	151	43	42			1	304
	LUG					50	76	77	107	73	51			434
Onions	CTN		3	6	54	56	56	184	135	111	70	66	65	806
	SCK		991	2004	2485	1823	1068	1410	1100	1619	4302	306	52	17,160
Oranges	CTN		256	1972	2639	1742	1256	2510	831	706	2413	343	103	14,771
Papaya	CTN		16	32	20	72	70	21	61	22	85	67	34	500
Peach	CTN				30	62	60	119	8					279
	LUG					60	30	92	67	25	36			310
Pears	CTN		24	88	71	110	98	110	159	176	229	19	25	1,109
	LUG		4	35	14	2	12	20	50	21	28	39	20	245
Pineapple	CTN		14	13	47	19	26	42	22	31	71	41	17	343
Plums	CTN						76	262	6	10	26			380
	LUG			3			50	266	297	199	63			878
Potatoes	CTN		573	1127	1973	1327	1124							6,124
	SCK		18	212	119	17	36							402

Table 71 (continued)
Quantity of U.S. Produce Imported to Guam by Item, 1983¹

Produce	Unit ²	Jan. ³	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Pumpkins	CTN									6	41	12		59
	CRT										25			25
Radish	CTN		6	5	30	11	26	32	15	9	69	22	51	276
Spinach	CTN						3				40	36	51	130
	LUG		2								7	23	24	56
Squash	CTN				7	13	5	8	4		38	15	12	102
	LUG		2	4		1				6	29	52	47	141
Tangelos	CTN		6	137	50									193
Tangerine	CTN		24	145	73						10	58	98	408
Tomatoes	CTN		99	80	312	39	259	479	455	1232	524	611	565	4,655
	CRT			45	8					35	10			98
	LUG		31	259	126	256	68	99	132	56	2042	1329	689	5,087
	FLT		14	40	91	12	7	3	33	17	134	154	165	670
Watermelon	CTN										1	40	15	56

¹Compiled from phytosanitary certificates and their attachments.

²Units reported were CTN = cartons, CRT = crates, FLT = flats, LUG = lugs and SCK = sacks; poundage was not reported.

³Information for January was not available. Blank spaces for other months represent either no import of certain produce in certain type of containers or missing information.

**LIVESTOCK
AND
FISHERIES**

Table 72
Guam Livestock and Poultry Population, 1975-1982

	1975	1978	1982
Carabaos	223	290	375
Cattle and Calves	2,647	1,495	1,398
Pigs	8,245	8,474	7,267
Goats and Kids	968	929	1,218
Horses	113	97	111
Commercial layers	120,453	96,143	50,035
Other chicken hens	30,711	27,284	33,913
Chickens ¹	53,332	55,357	47,283
Roosters and pullets	14,271	9,106	16,899
Ducks	3,324	5,823	5,119
Chicken egg sales (dz)	1,838,749	1,445,376	770,349

¹Chickens under four months old.

Source: U.S. Department of Commerce, Bureau of Census,
Census of Agriculture: Guam, various years.

Table 73
Livestock Population on Guam, 1972-1981

Fiscal Year	Poultry ¹	Carabaos	Cattle	Goats	Hogs	Horses
1972	120,776	316	4,112	897	8,325	141
1973	133,235	298	3,986	785	8,619	132
1974	139,110	256	2,771	537	10,463	118
1975	142,537	259	2,502	492	11,726	126
1976	91,360	247	1,829	504	8,442	120
1977	95,928	235	1,647	455	10,130	123
1978	147,875	314	1,493	432	10,637	135
1979	158,226	305	1,448	445	11,275	139
1980	108,862	213	1,011	526	9,842	130
1981	104,200	250	850	538	8,100	145
1982	100,700	208	508	510	7,900	140

¹ Represents only laying chickens.

Source: Guam Department of Agriculture, see 1983 Guam Annual Economic Review, Guam Department of Commerce.

Table 74
Value of Feeds Imported to Guam¹, 1977-1980

	1977	1978	1979	1980
(Dollars)				
United States	1,840,708	1,624,030	1,385,885	1,793,554
Australia	161,907	112,880	148,094	106,368
Taiwan	0	0	72,236	57,482
Japan	0	0	28,736	0
Hong Kong	0	0	21,412	0
Total	2,002,615	1,736,910	1,656,363	1,957,404

¹Under standard International Trade Classification (SITC) Code 0819, Food waste and prepared animal feed.

Source: Dept. of Commerce, Government of Guam, Guam Trade with the United States and Foreign Countries.

Table 75
Guam's Production and Importation of Feeds, 1973-1980

Year	Production ¹	Importation ²	Total
		(Tons)	
1973	6,239	N/A ³	N/A
1974	6,709	N/A	N/A
1975	6,002	N/A	N/A
1976	N/A	N/A	N/A
1977	5,617	10,013	15,630
1978	5,571	8,685	14,256
1979	5,169	7,529	12,698
1980	3,784	7,829	11,613

¹Levels of production are based on the land lease agreement between the Government of Guam and the feed mill on the basis of one dollar per ton of feed produced.

²Estimates based on prices assumed for different years; see source cited below.

³N/A not available

Source: T. Khamoui, An Economic Assessment of the Market Structure of the Food Industry on Guam, AES Publication No. 24, Agricultural Experiment Station, University of Guam, 1984.

Table 76
Guam's Production of Poultry, Pork, Beef, and Per Capita
Consumption of Local Meats, 1970-1982

Year	Poultry	Pork	Beef	Total	Per Capita consumption of local production
	(1,000 lb)				
1970	195	412	242	849	10.0
1971	161	427	185	773	N/A ¹
1972	195	450	157	802	N/A
1973	210	550	140	900	N/A
1974	230	700	130	1,060	N/A
1975	258	997	116	1,371	13.8
1976	120	513	79	712	N/A
1977	118	616	75	809	8.1
1978	124	1,047	73	1,244	12.4
1979	133	1,110	71	1,314	N/A
1980	91	964	52	1,107	10.5
1981	196	1,012	54	1,262	N/A
1982	206	1,063	57	1,326	N/A

¹N/A not available because population statistics are not available.

Source: Guam Department of Agriculture, see 1983 Guam Annual Economic Review, Guam Department of Commerce.

Table 77
U.S. Per Capita Consumption of Meats, Retail Weight Equivalent, 1970-1981¹

Year	Beef	Veal	Pork	Lamb and mutton	Edible offals	Total
(Pounds)						
1970	84.0	2.4	62.3	2.9	10.7	162.3
1971	83.4	2.2	68.3	2.8	10.9	167.6
1972	85.4	1.9	62.9	2.9	10.5	163.6
1973	80.5	1.5	57.3	2.4	9.7	151.4
1974	85.6	1.9	61.8	2.0	10.5	161.8
1975	87.9	3.4	50.7	1.8	10.1	153.9
1976	94.4	3.3	53.7	1.6	10.6	163.6
1977	91.8	3.2	55.8	1.5	10.4	162.7
1978	87.2	2.4	55.9	1.4	9.5	156.4
1979	78.0	1.7	63.8	1.3	10.4	155.2
1980	76.5	1.5	68.3	1.4	9.5	157.2
1981	77.2	1.6	65.0	1.4	9.4	154.6

¹ Includes processed meats on a fresh basis.

Source: U.S. Department of Agriculture, Food Consumption, Prices, and Expenditure: 1960-1981, Economic Research Service, Statistical Bulletin Number 694, November 1982.

Table 78
Guam's Production and Per Capita
Consumption of Local Eggs, 1970-1982

Year	Production (1,000 dz.)	Population	Per capita consumption of local eggs
	(1,000 dz.)		(Dozens)
1970	2,150	84,966	25.3
1971	1,858	N/A ¹	N/A
1972	2,065	N/A	N/A
1973	2,265	N/A	N/A
1974	2,436	N/A	N/A
1975	2,500	99,500	25.1
1976	2,008	N/A	N/A
1977	1,108	99,600	21.2
1978	2,298	100,700	22.8
1979	2,229	N/A	N/A
1980	1,814	105,816	17.1
1981	1,904	N/A	N/A
1982	1,134	N/A	N/A

¹N/A not available because population statistics are not available.

Source: Guam Department of Agriculture, see 1983 Guam Annual Economic Review, Guam Department of Commerce.

Table 79
U.S. Per Capita Consumption of Poultry and Eggs, 1970-1981

Year	Poultry (ready-to-cook weight)				Egg ²		
	Chicken	Turkey	Ducks and Geese ¹	Total	Farm weight	Retail weight	
	----- Pounds -----				Dozens	----- Pounds -----	
1970	40.4	8.0	0.4	48.8	25.7	40.3	39.1
1971	40.3	8.3	0.4	49.0	25.9	40.7	39.5
1972	41.8	8.9	0.4	51.1	25.4	39.9	38.7
1973	40.4	8.5	0.4	49.3	24.8	37.9	36.8
1974	40.7	8.8	0.4	49.9	23.7	37.2	36.1
1975	40.1	8.5	0.4	49.0	23.1	36.3	35.2
1976	42.7	9.1	0.4	52.2	22.5	35.3	34.2
1977	44.1	9.1	0.4	53.6	22.3	34.9	33.9
1978	46.7	9.2	0.4	56.3	22.7	35.6	34.5
1979	50.6	9.9	0.4	60.9	23.2	36.3	35.2
1980	50.1	10.5	0.4	61.0	22.8	35.7	34.6
1981	51.7	10.7	0.4	62.8	22.1	34.7	33.6

¹ Estimated

² Marketing year basis. Egg marketing year starts in December of year indicated. Weight of a dozen eggs assumed to be 1.57 pounds.

Source: U.S. Department of Agriculture, Food Consumption, Prices and Expenditures: 1960-1981, Economic Research Service, Statistical Bulletin Number 694, November 1982.

Table 80
Value of Guam's Imports of Animals and Meat Products, 1977-1980

SIC Code	Description	1977	1978	1979	1980
(Thousand Dollars)					
0013	Swine-Live	55	117	0	0
0014	Poultry-Live	0	21	7	164
0016	Baby chicks	7	80	0	0
0111	Beef and Veal (Fresh, Chilled, Frozen)	8,006	6,398	8,840	7,900
	From U.S.	2,272	2,627	3,361	3,689
	Australia	3,183	2,200	2,801	3,153
	New Zealand	1,068	1,250	1,624	465
	Micronesia	81	464	197	594
	Others	1,402 ¹ (61)	223 (62)	857 (60)	- (49)
0112	Sheep and Goat Meat	13	64	39	50
0113	Pork except offals (fresh, frozen)	7,742 (536)	2,886 (890)	2,254 (943)	2,909 (868)
0114	Poultry, offals (fresh, frozen)	3,095 (59)	4,510 (81)	4,897 (86)	4,867 (64)
0250	Birds eggs	8 (2,314)	76 (2,528)	47 (2,452)	103 (2,087)

¹ Figures in parentheses are Guam's value of production.

Source: Guam Department of Commerce, Guam Trade with the U.S. and Foreign Countries and 1983 Guam Annual Economic Review, p. 78.

Table 81
 Value of Beef, Veal, Milk, and Cream Imported
 from TTPI and the Northern Marianas to Guam, 1977-1980

Year	Beaf and Veal	Fresh Milk and Cream
1977	\$ 81,109	\$194,644
1978	463,773	401,280
1979	197,155	337,344
1980	593,726	253,532

Source: Department of Commerce, Guam Trade with the United States and Foreign Countries.

Table 82
Guam's Aquacultural Production, 1980-1984

	1980	1981	1982	1983	1984 ¹
	(Pounds)				
Carp	0	0	5,060	2,376	1,648
Catfish	0	0	303	3,395	0
Eel	77,000	132,000	0	0	0
Milkfish	0	0	0	5,916	7,918
Prawns, Freshwater	8,500	3,090	6,080	2,605	4,529
Prawns, Marine	0	0	2,719	0	0
Tilapia	6,200 ²	22,800	86,525	68,570	30,403

¹As of June 1984

²W.J. FitzGerald, Jr. estimated that approximately 10,000 pounds of tilapia were imported to Guam in 1980. See Quarterly Economic Review Vol. 3, no. 4, 1981, Guam Department of Commerce.

Source: Guam Cooperative Extension Service, University of Guam, Guam, Aquaculture Newsletter, GAQ 82-1, GAQ 82-2, GAQ 83-4, GAQ 84-1 and GAQ 84-2.

Table 83
Aquaculture Production on Guam
by Species, Weight and Value, 1981

Species	Production Weight (kg)	Wholesale Value	Fish Marketed Locally (kg)	Retail Value
Macrobrachium rosenbergii (Prawn)	2,272	\$ 35,000		
Anguilla japonica ¹ (Eel)	60,000	356,400	3,000*	\$16,500-23,100
Sarotheradon mossambicus/ Tilapia S. niloticus	11,364	43,750	11,364	50,000-62,500
TOTAL	73,636	435,150	14,363	66,500-85,600

¹Ninety-five (95%) of eel production was exported to Japan.

Source: R.F. Myers, et al., Market for Fresh or Frozen Whole Fish on Guam,
University of Guam Marine Laboratory Technical Report No. 84, 1983.

Table 84
Guam Fishermen's Coop Monthly Sales, 1979-1980

Month	1979			1980
	Marlin	Trolling ¹	Bottom ²	
	(Pounds)			
January	-	-	-	5,933
February	-	-	-	11,795
March	-	-	-	11,496
April	-	-	-	9,688
May	-	-	-	7,631
June	-	-	-	5,102
July	1,367	585	43	6,363
August	671	3,049	598	9,441
September	315	5,168	1,800	9,776
October	346	2,313	303	8,410
November	0	1,847	514	10,811
December	0	4,177	486	10,611
Total	2,699	17,139	3,744	107,057

¹ Trolling fish consist of Yellow Fin Tuna, Wahoo, Rainbow Runner, Barracuda, Mahi-Mahi, Skip Jack Tuna, etc.

² Bottom fish consist of Mafuti, Gindai, Paka Paka, Onaga, Lehi, etc.

Source: Guam Department of Commerce, Guam Annual Economic Review 1980 p. 25 and 1983 p. 20.

Table 85
Volume and Value of Tilapia Imported to Guam, 1980-1981¹

Month	Weigh (Kg)	Average Price/Kg. (F.O.B.)
July 1980	407	\$2.20
August	523	2.19
September	547	2.29
October	356	2.37
November	221	2.46
December	287	2.56
January 1981	228	2.42
February	275	2.49
March	426	2.48
April	275	2.58
May	324	2.50
June	337	2.02
TOTAL (Average)	4,206	(\$ 2.36)

¹ Compiled from Custom's import invoices (Department of Commerce).

Source: W.J. FitzGerald, Jr., Aquaculture Development Plan for the Territory of Guam, Guam Department of Commerce, 1982.

Table 86
Value of Fish Product Imports to Guam By Country of Origin, 1980

Country	SIC CODE ¹				Total	Imports Percent
	0311	0312	0313	0314		
	(Dollars)					
United States	128,848	50,762	610,300	768,100	\$1,558,010	28.3
Japan	269,938	118,630	77,048	421,906	887,522	16.1
Hong Kong	134,476	10,872	12,454	12,596	170,398	3.1
Taiwan	52,386	0	45,184	9,924	107,494	2.0
Philippines	1,246,462	70,706	1,091,836	58,550	2,467,554	44.9
Australia	58,678	1,262	97,016	0	156,956	2.8
Micronesia	103,124	0	14,332	0	117,456	2.1
Other Countries	29,014	0	0	6,832	35,846	.7
Total	2,022,926	252,232	1,948,170	1,277,908	\$5,501,236	100.0

¹Code 0311 includes fresh, chilled and frozen fish; code 0312 includes salted, smoked and dried fish; code 0313 includes shell fish, fresh and frozen; code 0314 includes fish in air tight containers.

Source: Guam Department of Commerce, Guam Trade with the United States and Foreign Countries, 1980

Table 87
 Estimated Composition of Fresh, Iced, Whole Fish Imported to Guam from the
 Philippines During 1981, by Weight and Retail Price Range¹

Family or Species Group	Imports (MT)	Retail Price Range \$ Per kg
Clupeoids ("Baitfish," sardines, anchovies, etc.)	14.0	4.62-5.10
<u>Anadostoma</u> (gizzard chad)	1.9	5.04-5.10
Chanidae (Milkfish)	62.7	4.60-6.14
Other "cultured" fishes (<u>Plotosus canius</u> (Catfish) and Channidae (Mudfish) 3.9) (Cyprinodontidae (carp) 0.6) (<u>Tilapia</u>) 5.4)	10.0	4.55-6.69
Ariidae (Sea Catfish)	0.5	4.47-6.14
Serranidae (Groupers)	16.8	5.13-6.14
Carangidae (lg. species: Jacks and Trevallys)	16.4	5.04-5.28
"Mackerels," including: (Carangidae-sm. spp. 30.5) (Scombridae--sm. spp. 9.9) (Unspecified 3.9)	44.3	4.62-5.48
<u>Scombridae-Scomberomorus</u> spp. (Spanish Mackerel)	7.8	5.19-7.70
<u>Scombridae-Thunnus</u> spp. (Tunas)	3.8	5.04-5.54
Formionidae (Pomfrets)	1.4	5.04-5.10
Trichiuridae (Cuttlas fishes)	5.5	4.62-5.10
Menidae (Moonfish)	4.6	5.04-5.10
Leiognathidae (Slipmouths)	12.4	4.69-5.10
Gerreidae (Mojarras)	3.5	4.69-5.10
Lutjanidae (Snappers)	13.5	4.82-5.37
Caesionidae (Fusiliers)	11.2	4.62-5.10
Lethrinidae (Emperors)	3.1	4.95-5.10
Nemipteridae (Threadfins)	12.9	5.04-5.10
Haemulidae & Sciaenidae (Grunts and Croakers)	2.2	5.04-5.41
Teraponidae (Tiger Perches)	3.8	4.36-5.17
<u>Kuhlia marginata</u> (perchlets)	1.6	5.04-5.10
Mullidae (Goatfishes)	2.2	5.04-5.10
Sillaginidae (Whitings)	2.9	5.04-5.10
Kyphosidae (Rudderfishes)	2.2	5.04-5.10
Scatophagidae (Scats)	3.1	5.04-5.72
Mugilidae (Mulletts)	7.6	4.69-5.10
Scaridae (Parrotfishes)	2.9	4.29-5.10
Gobidae (Gobies)	2.7	4.29-5.10
Acanthuridae (<u>Acanthurus</u> spp. (Surgeon Fish) 1.6) (<u>Naso</u> spp. (Unicornfishes) 1.4)	2.9	5.04-5.10
Siganidae (Rabbitfishes)	14.7	4.47-5.24
Pleuronectidae; Bothidae (Flatfishes)	1.9	5.04-5.10
Misc. and unid.	10.0	4.74-5.58
Total Estimated Imports	307.0	

¹These figures are adjusted for missing and incorrect invoices.
 Source: R.F. Myers, et al., Market for Fresh or Frozen Whole Fish on Guam, Univ.
 of Guam Marine Lab. Technical Report No. 84, 1983.

Table 88
 Summary of Fresh or Frozen Whole Fish Entering Guam's Commercial and
 Subsistence Economy During 1981, by Source, Weight and Value

Source	Estimated Weight (MT)	Percent of Available Total	Estimated Retail Value ³ (\$1,000)
Philippines: commercial	307.0	62.9	1,455-1,698
Philippines: personal baggage	N/A ²		
Micronesia: commercial	12.3	2.5	58-68
Micronesia: personal baggage	14.6	3.0	69-81
Japan: commercial	3.5	0.7	50
Local: Islandwide ¹ offshore	123.5	25.3	585-682
Local: Islandwide ¹ inshore	13.1	2.7	62-72
Local: Aquaculture	14.4	2.9	66-86
Incidental Catch Off-loading	-	N/A	
Total	488.4	100.0	2,345-2,737

¹Includes commercial and subsistence for FY-1981 (October 1, 1980 to October 1, 1981).

²N/A not available

³Based on a weighted average of prices from Table 87.

Source: R.F. Myers, et al., Market for Fresh or Froze Whole Fish on Guam,
 Univ. of Guam Marine Lab. Technical Report No. 84, 1983.

Table 89
Fresh and Frozen Whole Fish Imported to Guam from Micronesia During 1981,
by Species, Weight and Invoiced Value¹

Source	Scientific (Palauan Name)	Imports (kg)	Invoiced Value (Dollars)
Palau	Holocentridae		
	<u>Adioryz spinifer</u> (Desachel)		
	<u>Adioryz</u> ssp. (Desachel)		
	<u>Myripristis</u> ssp. (Bsukl)	343.8	568.75
Palau	Serranidae		
	<u>Epinephelus microdon</u> (Temekai)		
	<u>Epinephelus</u> spp. (Temekai)	68.0	94.50
	<u>Plectropomus</u> spp. (Tiyau, tiau)	44.9	74.15
Palau	Lutjanidae		
	<u>Lutjanus bohar</u> & L.		
	<u>argentimaculatus</u> (Kedesau)	45.4	63.00
	<u>L. gibbus</u> (Keremal, Kerem)	250.3	404.35
	<u>L.</u> spp.		
Palau	Lethrinidae		
	<u>Unid</u> spp. (Mechur)	46.3	76.50
	<u>Lethrinus semicinctus</u> (Udech)	289.7	412.79
	<u>L. harak</u> (White snapper)		
	<u>Lethrinus miniatus</u> (Mlangmud)	63.5	118.75
	<u>Lethrinus lentjan</u> , J. spp. (?)		
	<u>Monotaxis grandoculis</u> (Besechaml)		
Palau	Gerreidae		
	<u>Gerres macrosoma</u> (Chedochd)		
	<u>G. abbreviatus</u> (Chedochd)		
Palau	Mullidae		
	<u>Mulloidichthys Flavolineatus</u> (Dech)	63.5	105.00
	<u>Parupeneus barberinus</u> (bang)	41.3	67.50
Palau	Kyphosidae		
	<u>Kyphosus</u> ssp. (Komud)	21.3	39.95
Palau	Mulgilidae		
	<u>Liza vaigiensis</u> (uluu)	4.5	8.50
Palau	Scaridae		
	<u>Bolbometopon muricatus</u> (Kemedukl)	646.0	1,130.99
	<u>Cetoscarus bicolor</u> (beadl, ngesngiz)		
	<u>Hipposcarus longiceps</u> (Ngyaoch, bergism)	76.2	126.00
	<u>Scarus rubroviolaceus</u> (mesekelatlelebt)		
	<u>Scarus</u> spp.		
Palau	Acanthuridae		
	<u>Acanthurus nigricaudus</u> (mesekuuklbad)		
	<u>A. olivaceus</u> (nerebas, kalelaumi)		
	<u>A. xanthopterus</u> (Meskuule, mesekuuk)	40.1	68.25
	<u>Naso tuberosus</u> (Chorgchutl)		
	<u>N. lituratus</u> (Erangl, cherangl)	392.2	763.68
	<u>N. unicornis</u> (Um, Chum)	3,124.3	5,586.70

Table 89 (continued)
 Fresh and Frozen Whole Fish Imported to Guam from Micronesia During 1981,
 by Species, Weight and Invoiced Value¹

Source	Scientific (Palauan Name)	Imports (kg)	Invoiced Value (Dollars)
Palau	Siganidae		
	<u>Siganus lineatus</u> (Klels)	125.9	233.73
	<u>Siganus</u> sp. (Klsebuul)	36.7	75.65
	<u>S. guttatus</u> (Beball)	34.9	57.78
	<u>S. puellus</u> (reked)		
	<u>S. canaliculatus</u> (Meyas)	382.8	608.60
	<u>S. argenteus</u> (bednut)		
	Unspecified Siganids	63.5	105.10
Palau	Scombridae		
	<u>Thunnus albacares</u> (tekuu, manguro)	96.6	225.50
	Unid. fishes (Mellemau) (Keb1)	270.3 20.4	385.00 38.25
Palau	Non-Marine: Anguillidae		
	<u>Anguilla</u> spp. ("Eel")	137.4	375.00
Palau	Assorted Reef Fish	1,953.2	3,493.13
Truk	Scaridae	78.6	205.50
	Assort. Reef Fishes	3,056.2	6,110.10
Yap	<u>Anguilla</u>	11.3	25.00
Other	Scaridae	120.2	203.75
	Assort. Reef Fishes	43.1	66.50
	Assort. Frozen Fishes	274.8	676.50
Total Recorded Imports From Micronesia		12,267.2	\$22,594.45

¹These figures are as reported on invoices provided by Guam Department of Commerce for the entire year 1981 and are not adjusted for potential sampling or reporting error. Many of the families and species represented in imports from Palau were also imported from Truk and possible other islands, but were identified only as "assorted reef fishes" on the invoices.

Source: R.F. Myers, et al., Market for Fresh or Frozen whole Fish on Guam,
 University of Guam Marine Laboratory Technical Report No. 84, 1983.

Table 90
Dried, Salted, Smoked and Boned Fish Imported to Guam
from the Philippines, 1981

Group	Weight ¹ (kg)	Container Type ²	Invoiced Amount ³ (Dollar)	Percent of Total Invoiced Value
Clupeoid	3,287	1,140 pks 2,997 pcs 30 cs	\$ 7,291	23.9
Milkfish	7,262	82 pks 166 pcs 4 cs	\$16,509	54.1
Other ⁴	2,507	12,496 pcs 1,124 pks	\$ 6,098	22.0
Total	13,056		\$30,498	100.0

¹Adjusted for incorrect and missing invoices using adjustment procedures identical to those used for fish iced fish.

²pks = packages; pcs = pieces; cs = cases; weights unknown.

³These values represent invoiced amounts. Retail prices were not surveyed.

⁴Includes the following families: Dussmieridae, Clupeidae, Engraulidae and Atherinidae.

Source: R.F. Myers, et al., Market for Fresh or Frozen whole Fish on Guam, University of Guam Marine Laboratory Technical Report No. 84, 1983.

Table 91
 Summary of Fresh or Frozen Whole Fish Entering Guam's
 Commercial and Subsistence Economy During 1981, by
 Source, Weight and Value

Source	Estimated Weight (MT)	Percent of Total Available	Estimated Retail Value ³ (\$1,000)
Philippines: commercial	307.0	62.9	1,455-1,698
Philippines: personal baggage	N/A ²		
Micronesia: commercial	12.3	2.5	58-68
Micronesia: personal baggage	14.6	3.0	69-81
Japan: commercial	3.5	0.7	50
Local: Islandwide offshore ¹	123.5	25.3	585-682
Local: Islandwide inshore ¹	13.1	2.7	62-72
Local: Aquaculture	14.4	2.9	66-86
Incidental Catch Off-loading	N/A		
TOTAL	488.4	100.0	2,345-2,737

¹Includes commercial and subsistence for FY-1981 (October 1, 1980 to October 1, 1981).

²N/A not available

³Based on a weighted average of prices from Table 87.

Source: R.F. Myers, et al., Market for Fresh or Frozen whole Fish on Guam,
 University of Guam Marine Laboratory Technical Report No. 84, 1983.

Table 92
Canned Fish Products Most Frequently Bought by
Fish Consuming Households on Guam

Canned Product	Number of Respondents	Percent of Total Respondents
Tuna	400	42.4
Sardines	208	22.1
Salmon	116	12.3
Mackerel	30	3.2
Crab	7	0.7
Clams	6	0.6
Shrimp	6	0.6
Abalone	3	0.3
Oysters	3	0.3
Other	1	0.1
No Response ¹	163	17.3
TOTAL	943	100.0

¹These households either do not buy canned fish, or refused, or were unable to answer.

Source: Paul Callaghan, Some Factors Affecting Household Consumption of Seafood and Fish Products on Guam, Guam Bureau of Planning Technical Report No. 77-3, 1978.

Table 93
Types of Frozen Fish Most Frequently Bought by Households
on Guam, Ranked in Order of Frequency

Rank	Common and Local Names
1st	<u>Mackerel</u> (achuman, alumanhan, atulai, lumahan, saba tangigi)
2nd	<u>Shrimp</u> (Sugpo, uhang)
3rd	<u>Milkfish</u> (agua, bangus)
4th	<u>Tuna</u> (albakora, gulyasan, katsuo (aku), mangro (ahi))
5th	<u>Rabbitfish</u> (manahac, dage, sesjun, hiting, kicho, samaral)
6th	<u>Snapper</u> (bua, dalangbukid, fafaet, funai, hamala, kakaka, liklikuke, mafute, matanhagon, mayamaya, salagi, tagafi)
7th	<u>Surgeonfish</u> (guase, hangon, tataga, hijuk, hugupao)
8th	<u>Prepared fish products</u> (fish sticks, fish patties, etc.)
9th	<u>Rudderfish</u> (anaha, gepan, gueli)
10th	<u>Salmon</u> (sake, satmon)
11th	<u>Parrotfish</u> (atuhon, dafa, gualig, gulafi, lacha, lagua, lagan agaga, magaham, mulmul, ogos, packak, palacse, tuchugon)

Source: Paul Callaghan, Some Factors Affecting Household Consumption of Seafood and Fish Products on Guam, Guam Bureau of Planning Technical Report No. 77-3, 1978.

Table 94
Types of Frozen Fish Most Frequently Bought by Households
on Guam, Ranked in Order of Frequency

Rank	Common and Local Names
1st	<u>Milkfish</u> (agua, bangus)
2nd	<u>Rabbitfish</u> (manahac, dage, sesjun, hiting, kicho, samaral)
3rd	<u>Mackerel</u> (achuman, alumahan, atulai, lumahan, saba, tangigi)
4th	<u>Shrimp</u> (sugpo, uhang)
5th	<u>Snapper</u> (bua, dalagang bukid, fafaet, funai, hamala, kakaka, lilikuke, mafute, matanhagon, mayamaya, salagi, tagafi)
6th	<u>Surgeonfish</u> (guase, hangon, hijuk, hugupao, tataga)
7th	<u>Tuna</u> (albakora, gulyasan, katsuo, mangro)
8th	<u>Parrotfish</u> (atuhon, dafa, gualig, gulafi, lacha, lagua, lagan agaga, magaham, mulmul, ogos, packak, palacse, tuchugon)
9th	<u>Grouper</u> (gadao, lapulapu, salmoniya)
10th	<u>Rudderfish</u> (anaha, gepan, gueli)
11th	<u>Jack/Skipjack</u> (ee ei, hagi, mamulan, pampano, tarakito, tarakityiyon, talakito)

Source: Paul Callaghan, Some Factors Affecting Household Consumption of Seafood and Fish Products on Guam, Guam Bureau of Planning Technical Report No. 77-3, 1978.

Table 95
U.S. Per Capita Consumption of
Fresh and Frozen Fish, 1970-1981

Year	Fish	Shellfish	Total ¹
	(Pounds)		
1970	4.5	2.4	6.9
1971	4.3	2.4	6.7
1972	4.7	2.4	7.1
1973	5.2	2.2	7.4
1974	4.4	2.5	6.9
1975	4.9	2.6	7.5
1976	5.6	2.6	8.2
1977	5.1	2.6	7.7
1978	5.5	2.6	8.1
1979	5.4	2.4	7.8
1980	5.5	2.5	8.0
1981	5.0	2.8	7.8

¹ Edible weight; exclude game fish consumption.

Source: U.S. Department of Agriculture, Food Consumption, Prices, and Expenditures: 1960-1980, Economic Research Service, Statistical Bulletin Number 694, November 1982.

Table 96
Tuna Transshipment Industry

Year ¹	1976	1977	1978	1979	1980	1981	1982
Tuna Transhipped ²	10,443	13,630	16,058	14,762	9,822	12,657	27,419
Number of Fishing Vessels		189	221	267	313	352	268
<u>Gross Tonnage of Fishing Vessels:</u>							
U.S.			8,921	14,858	19,667	22,302	30,893
Japanese			44,793	42,538	51,278	26,819	31,917
Other			17,705	19,602	12,762	6,456	25,992

¹ Fiscal year

² Short tons

Source: Port Authority of Guam, Government of Guam. See Guam Annual Economic Review 1983, Guam Department of Commerce.



