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PRODUCTION AND MARKETING OF SPRING GREENWRAP TOMATOES IN THE
LOWER RIO GRANDE VALLEY

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This report presents the results of a preliminary analysis of some of the problems involved in producing and marketing early spring greenwrap tomatoes in the Lower Rio Grande Valley. This area includes Cameron, Hidalgo and Willacy counties. For purposes of this study the irrigated portion of Starr county is included. Special attention has been given to the costs and practices involved in producing and packing tomatoes. Trends in Mexican imports, production of tomatoes in the Valley and production of tomatoes from competing areas are treated briefly. Also some attention has been given to the probable effects on labor costs of recent changes in the Federal minimum wage law and the United States-Mexico wage agreement including the enforcement of immigration laws.

Extent and Nature of the Tomato Enterprise

The greenwrap tomato is the most important vegetable crop in Texas. The total average annual carlot movement of vegetables was 47,500 during the 10-year period, 1938-47. The annual average carlot movement of tomatoes was 10,125 or 20 percent of the total vegetable movement for the same decade.

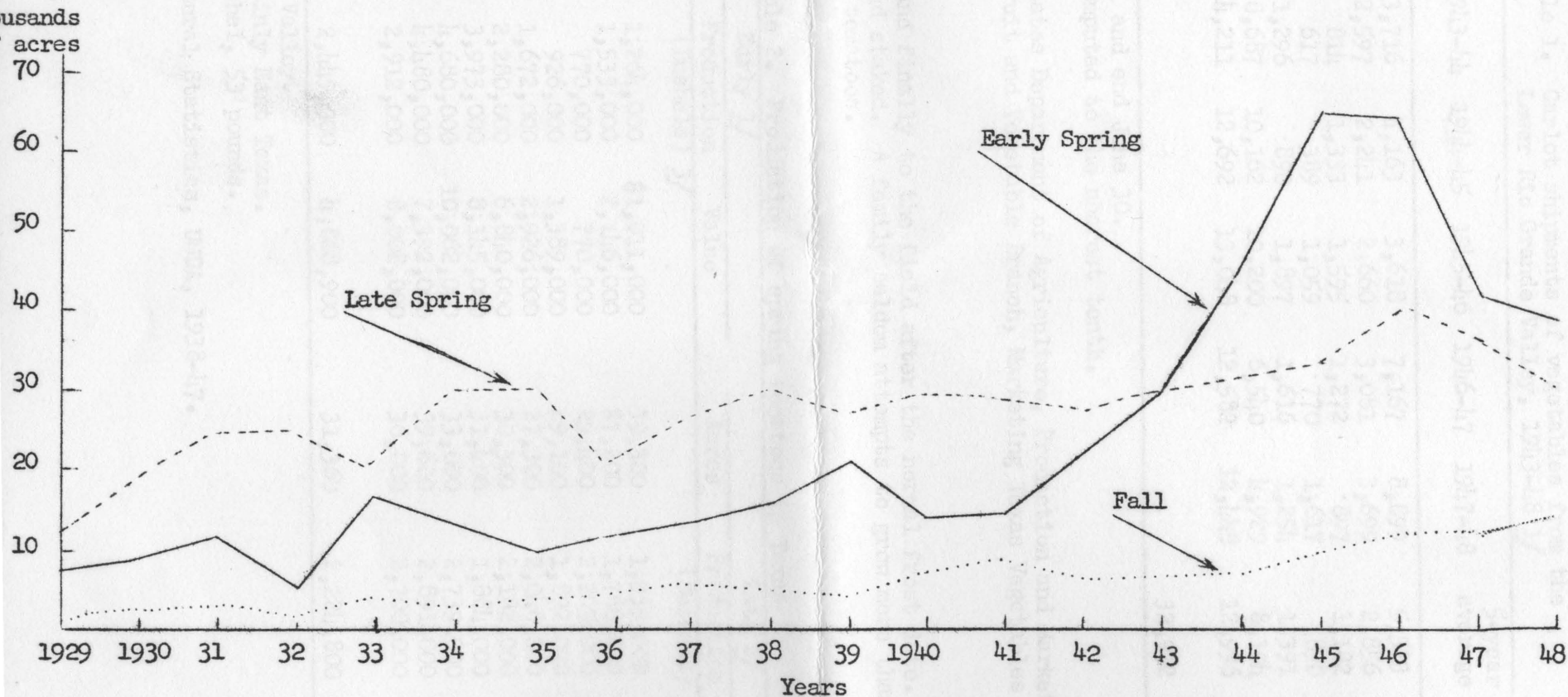
The Lower Rio Grande Valley is the most important vegetable producing area in the State. As is true for the State, the tomato is also the most important vegetable crop in the Lower Valley (Table 1). The data on carlot movement of tomatoes do not include truck shipments. According to reports from the Federal-State inspection service, this movement of the spring crop from the Valley has averaged 900 carlots in recent years. This area produces slightly more than half of the Texas spring tomatoes (Table 2). In addition to spring tomatoes, an average of about 8,000 acres per year of fall tomatoes were produced from 1938 to 1947, mostly in the Valley and on the Rio Grande Plain immediately to the north and west. For statistical treatment, the spring crop of tomatoes in the Lower Valley is called early spring, while the remainder of the spring crop is called late spring. Most of the late spring production occurs in the timbered, sandy sections of East Texas.

Trends in acreages of the early spring, late spring and fall crops are shown in Figure 1. The early spring production increased far more sharply during the war years than the other types of tomatoes. This was primarily due to the unprecedented demand during the war period and to the greater availability of labor for the early spring as compared with the other areas of tomato production.

The early spring crop is grown on a relatively large scale and by extensive methods as compared with the late crop. Crops ranging from 10-40 acres are common while an occasional grower may have more than 100 acres. This is made possible by direct planting of the seed in the field and later thinning with hoes. No pruning or staking is done. A high percentage of the labor required, especially the hoeing and harvesting, is done by seasonal workers hired or contracted for the particular job.

The late spring crop is for the most part a small-scale, family-labor type of enterprise in which the seed are planted in hot beds, then transplanted twice,

Fig. 1. Trend of Texas Tomato Acreages for Early Spring, Late Spring and Fall, 1929-1948



Source: Yearbook of Agriculture 1930-1935; Agricultural Statistics 1936-1949

Table 1. Carlot shipments of vegetables from the Lower Rio Grande Valley, 1943-48 ^{1/}

Commodities	1943-44	1944-45	1945-46	1946-47	1947-48	5-year average	Percent of total ^{2/}
Cabbage	3,716	4,163	3,618	7,167	8,899	5,513	16.7
Carrots	2,597	2,241	2,660	3,081	3,699	2,856	8.6
Corn (green)	814	1,333	1,595	1,272	897	1,182	3.6
Onions (dry)	617	389	1,059	770	1,617	890	2.7
Potatoes	1,296	890	1,897	1,616	1,254	1,391	4.2
Tomatoes	8,687	10,162	10,200	6,540	4,929	8,104	24.6
All others	14,211	12,692	13,048	12,582	12,448	12,996	39.6
Total vegetable shipments						32,932	100

^{1/} Years begin July 1 and end June 30.

^{2/} Percentages are computed to the nearest tenth.

Source: United States Department of Agriculture, Production and Marketing Administration, Fruit and Vegetable Branch, Marketing Texas Vegetables 1947-48 Season.

once to cold frames and finally to the field after the normal frost date. This crop is commonly pruned and staked. A family seldom attempts to grow more than 1 to 4 acres of late spring tomatoes.

Table 2. Production of spring tomatoes in Texas

	Early ^{1/}			Late ^{2/}		
	Acres	Production (Bushels) ^{3/}	Value	Acres	Production (Bushels) ^{3/}	Value
1938	16,200	1,264,000	\$1,011,000	30,300	1,939,000	\$1,163,000
1939	21,000	1,533,000	2,146,000	27,200	1,768,000	2,564,000
1940	14,000	770,000	770,000	29,400	2,205,000	1,654,000
1941	14,700	926,000	1,389,000	29,100	1,892,000	2,365,000
1942	22,000	1,672,000	2,926,000	27,300	2,048,000	3,584,000
1943	30,000	2,280,000	6,840,000	30,300	2,182,000	7,419,000
1944	46,200	3,973,000	8,145,000	31,400	1,884,000	6,500,000
1945	65,000	4,680,000	10,062,000	33,000	2,739,000	7,395,000
1946	64,000	4,480,000	7,392,000	39,600	2,891,000	6,071,000
1947	41,600	2,912,000	8,008,000	36,000	2,700,000	6,210,000
10-year average	33,470	2,449,000	4,868,900	31,360	2,224,800	4,492,500

^{1/} Lower Rio Grande Valley.

^{2/} Rest of Texas, mainly East Texas.

^{3/} Net weight of bushel, 53 pounds.

Source: Agricultural Statistics, USDA, 1938-47.

Competitive Aspects

Early spring tomatoes compete with tomatoes from Mexico and Florida during April and the early part of May, and with tomatoes from the late spring areas of Texas and other Southern States during the latter part of May and the early part of June (Table 3). The fall tomato from Texas moves in competition with tomatoes from Florida, California, Mexico and Cuba. The intensity of competition from these sources varies from year to year with seasonal conditions. Imports of tomatoes into the United States have fluctuated greatly in the last several years; however, the trend has been generally upward (Figures 2 and 3). During the war and since, the greater availability of labor in Mexico and in the Valley as compared with other areas, the high level of general prices and incomes, the lower duty on tomatoes from Cuba and Mexico and the exceptionally large number of persons gainfully employed in the United States have been important factors in increasing both domestic consumption and imports (Table 4). More competition is expected at the peak of the shipments from the Lower Valley as the new areas develop across the Rio Grande in Mexico.

Mexico is the primary source of tomato imports into the United States. A comparison of the trend in tomato production for the areas in direct competition with Mexico are shown in Figures 2 and 3. These charts have been developed by the statistical procedure of fitting a line of least squares. The use of such a measure makes possible the comparison of the rate of production and import changes over a long period of time. The basic production and import quantities used in these figures are shown in Table 4.

Table 3. Tomato shipments, carlot equivalents, 1944-48

	Calif.	Fla.	Texas	Mexico	Cuba	Other U. S.	Total
January	188	830	8	1,721	307	-	3,054
February	221	942	1	1,773	466	-	3,403
March	80	1,569	3	3,094	208	-	4,954
April	147	1,517	988	2,550	38	-	5,240
May	827	1,510	5,470	331	3	41	8,182
June	1,260	173	4,782	2	-	893	7,110
July	1,986	5	566	10	3	1,179	3,749
August	1,647	-	-	5	-	1,027	2,679
September	2,474	-	-	1	-	2,609	5,084
October	4,035	45	5	5	-	313	4,403
November	1,119	493	940	89	2	-	2,643
December	314	765	373	904	86	-	2,442
Total	14,298 ^{1/}	7,849 ^{1/}	13,136	10,485 ^{2/}	1,113 ^{2/}	6,062	52,943 ^{3/}
Av. no. of months shipping	12	10	10	12	8	6	
Av. monthly shipments	1,192	785	1,314	874	139	1,010	

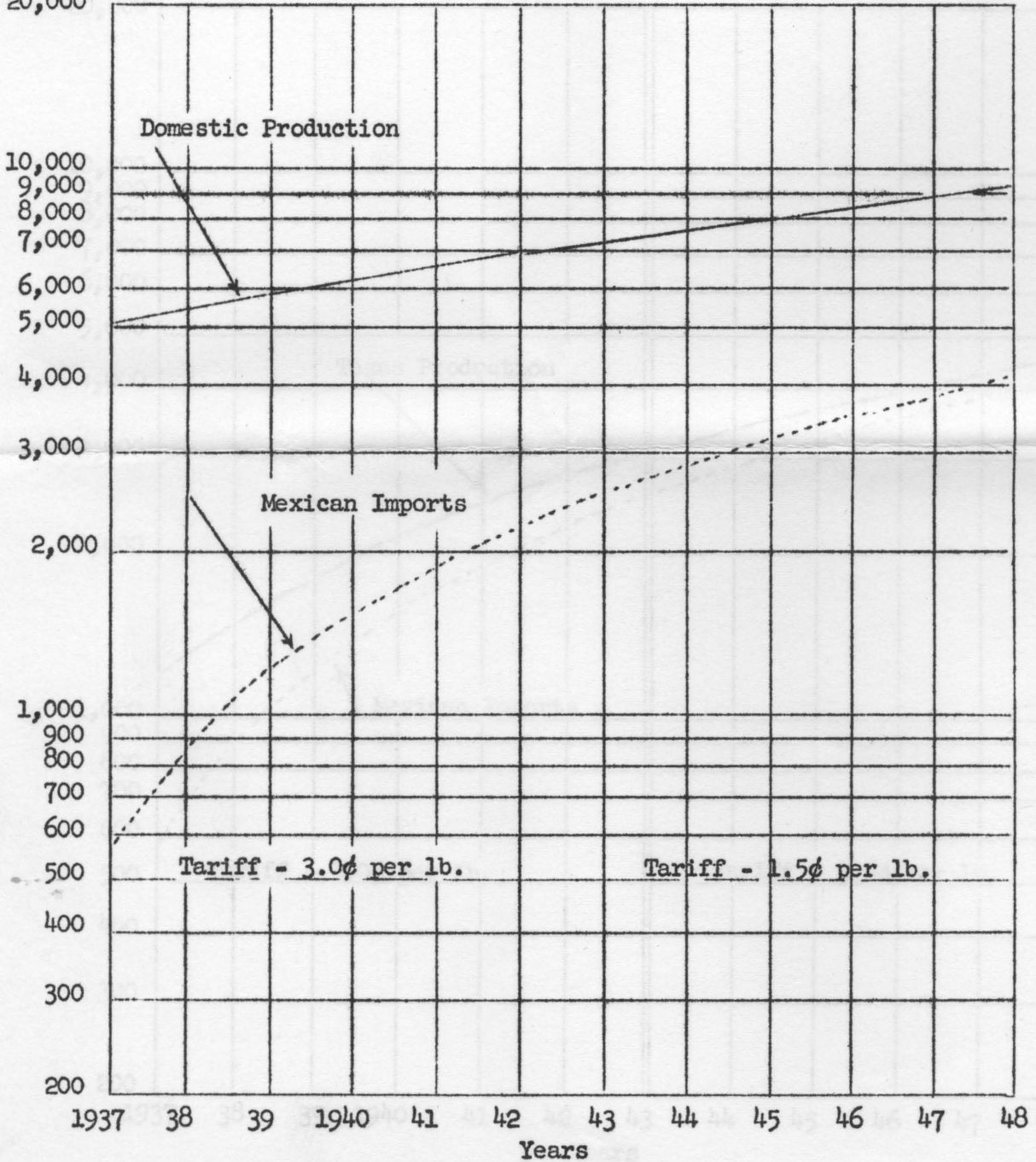
^{1/} Includes truck shipments -- incomplete, based on prewar carlot equivalents.

^{2/} Converted into carlot equivalents on basis of 20,000 pounds minimum carlot loading as per consolidated freight classification.

^{3/} Includes 2,833 cars of domestic tomatoes for manufacture.

Fig. 2. Trend of Tomato Production for Domestic U. S. during Mexican Import Season, and Mexican Imports, 1937-1948

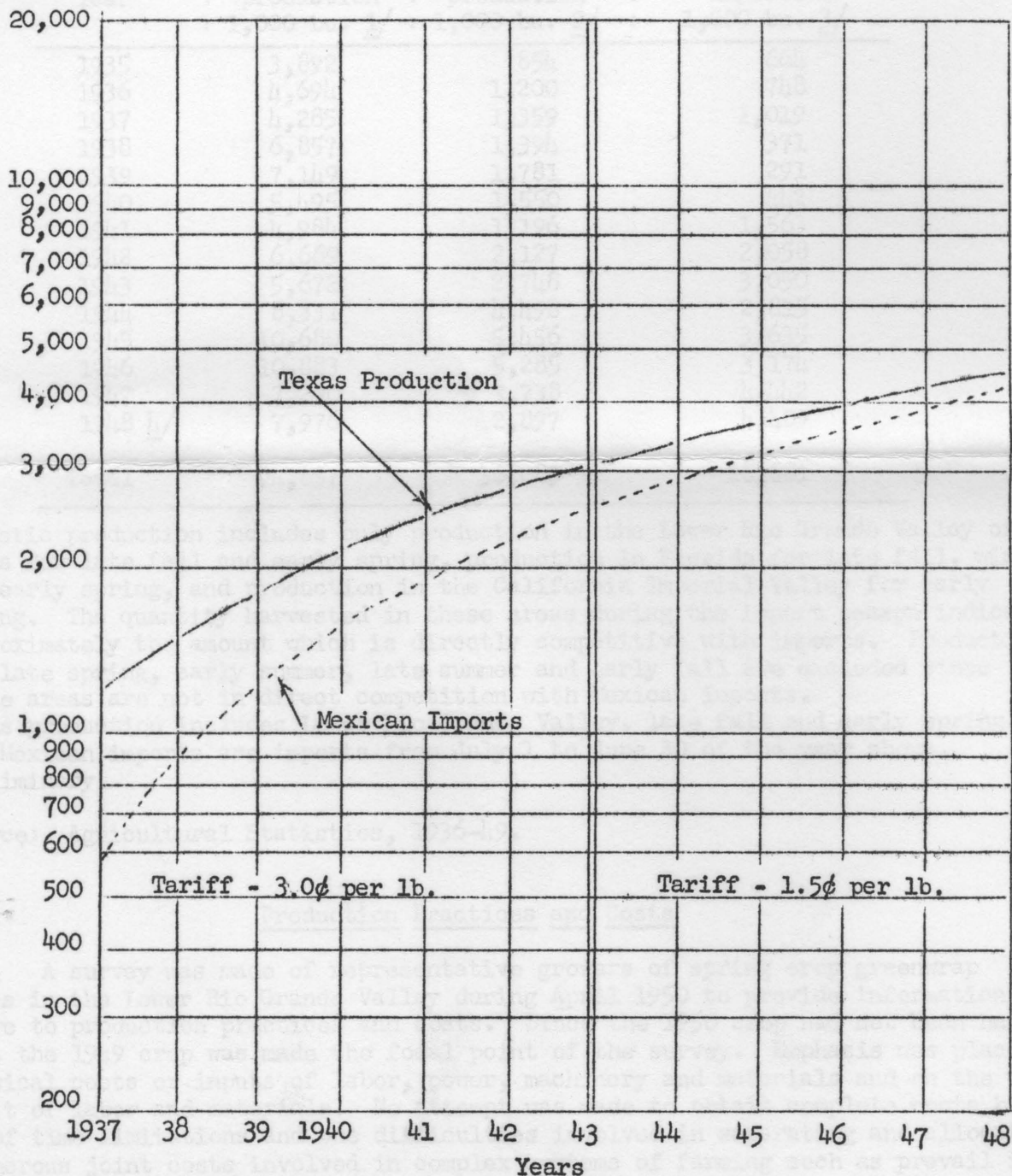
Thousands of bushels
20,000



Source: Agricultural Statistics 1938-1949

Fig. 3. Trends of Tomato Production for Texas during Mexican Import Season, and Mexican Imports, 1937-1948

Thousands of bushels



Source: Agricultural Statistics 1938-1949

The unprecedented demands for canned tomatoes and tomato juice during the war led to the establishment of canneries in the Valley. These canneries process incidental production of ripe tomatoes following the close of the market for greenwraps. However, this has not been an important source of income to growers. It remains to be seen whether Texas canners will be able to meet the competition of tomatoes that are grown primarily for canning purposes.

Table 4. Trend in production of tomatoes from areas in the United States in direct competition with imports

Year	: Domestic : production : 1,000 bu. <u>1/</u>	: Texas : production : 1,000 bu. <u>2/</u>	: Mexican : imports : 1,000 bu. <u>3/</u>
1935	3,892	854	664
1936	4,694	1,200	748
1937	4,285	1,359	1,019
1938	6,857	1,394	371
1939	7,149	1,781	291
1940	5,495	1,550	442
1941	4,984	1,196	1,563
1942	6,669	2,127	2,058
1943	5,672	2,748	3,050
1944	8,331	4,498	2,815
1945	10,680	5,456	3,635
1946	10,883	5,285	3,174
1947	7,290	3,738	4,442
1948 <u>4/</u>	7,976	2,897	4,409
Total	94,857	36,083	28,681

1/ Domestic production includes only production in the Lower Rio Grande Valley of Texas for late fall and early spring, production in Florida for late fall, winter and early spring, and production in the California Imperial Valley for early spring. The quantity harvested in these areas during the import season indicates approximately the amount which is directly competitive with imports. Production for late spring, early summer, late summer and early fall are excluded since these areas are not in direct competition with Mexican imports.

2/ Texas production includes Lower Rio Grande Valley, late fall and early spring.

3/ The Mexican imports are imports from July 1 to June 30 of the year shown.

4/ Preliminary.

Source: Agricultural Statistics, 1936-49.

Production Practices and Costs

A survey was made of representative growers of spring crop greenwrap tomatoes in the Lower Rio Grande Valley during April 1950 to provide information relative to production practices and costs. Since the 1950 crop had not been harvested, the 1949 crop was made the focal point of the survey. Emphasis was placed on physical costs or inputs of labor, power, machinery and materials and on the cost per unit of labor and materials. No attempt was made to obtain complete costs because of time limitations and the difficulties involved in separating and allocating the numerous joint costs involved in complex systems of farming such as prevail in the Valley. The seasonal abnormalities caused by the freeze in January 1949, were adjusted by obtaining the usual times over for each field operation rather than the actual in 1949.

Data were obtained from 138 growers well distributed over the tomato producing sections of the Valley. These growers harvested 4,734 acres of tomatoes in 1949, or an average of 34 acres per farm. The range was from 1 to 250 acres. Only 4 had less than 5 acres while 15 had 100 or more acres. Sixty-one percent fell between 10 and 40 acres, but represented only 35 percent of the total acreage as compared with 42.5 percent on the 15 farms having 100 or more acres.

Almost two-thirds of the land on which tomatoes were grown in 1949 was rented. The usual system was to share rent. About 80 percent of those renting land reported their rentals to be one-fourth of the crop. Only 4 growers reported the payment of cash rent. A great deal of the land on which tomatoes are grown is in small tracts. This is partly due to the ownership pattern (numerous small tracts controlled by absentee owners). Operators commonly rent from several landowners to obtain control of an economic-size unit. Small tomato fields also may result from the selection of favorably located portions of larger tracts.

Production and Production Requirements

Yields of spring Valley tomatoes were abnormally high in 1949. It was not possible to obtain longtime or normal yields from growers. Yields reported by the Bureau of Agricultural Economics could not be used since they represent both dryland and irrigated tomatoes whereas this report deals with irrigated tomatoes only. During the peak years of production in the middle forties, a substantial acreage of tomatoes was grown without irrigation.

In the absence of a usable normal yield, the average yield for 1949 obtained from the growers contacted was adjusted downward by the same percentage that the Bureau of Agricultural Economics 1949 yield was of the previous 10-year average. This gave an adjusted normal yield of 4,900 pounds of greenwrap tomatoes and 1,900 pounds of ripe or canning tomatoes. These yields are used in subsequent estimates of harvesting costs, land rent and unit costs of production.

Seed

The average amount of seed required per acre for one planting was .95 pound. Eighty-six of the 138 growers used 1 pound, 39 used less than a pound and 13 more than a pound. Allowing for a normal replanting of one-fourth of the acreage, the total seed requirement would average 1.2 pounds per acre.

Most growers use certified seed, principally of the Rutgers variety. Seventy-three percent, or 101 of the 138 growers planted Rutgers only, while 17 percent, or 23 growers, reported using Rutgers in combination with some other variety. Valiant was the only other variety mentioned by more than 5 growers.

Fertilizers

All except 12 of the 138 growers used some form of fertilizer. The kinds and amounts used differed greatly from farm to farm. One fairly common practice was the use of superphosphate before planting and a sidedressing of ammonium nitrate or its equivalent during cultivation. Another important group used a high nitrogen, high phosphate fertilizer such as 16-20-0 which might be put down before planting or used later as a sidedressing, or both. Still another group preferred a complete fertilizer, the most common being 5-10-5. Some fertilizer was applied in the irrigation water. Because of the wide variety in the kinds and forms of the fertilizers, no determination was made of the average amount used per acre. However, it approached the equivalent of 250 pounds of 16-20-0.

Insecticides and Fungicides

All except 2 of the 138 growers attempted the control of insects. Insect control practices were almost as varied as were the fertilizer practices. To further complicate the matter, fungicides were often applied with the insecticides. Although some spraying was done, most insecticides and fungicides were applied in dust form. A combination of sulphur and 5 percent DDT was the most common insecticide used.

The rate of application usually ranged from 10 to 30 pounds per acre; the most common rate was 20 pounds. The average amount applied each time was slightly higher than 20 pounds when planes were used and somewhat lower when ground machines or hand dusters were used. The larger growers depended more on planes while the smaller growers made more frequent use of ground machines and hand dusters.

Water

Although a few growers owned their own irrigation systems and pumped their water directly from the river, the great majority were served by irrigation districts. The cost of developing and maintaining the water facilities is borne by the land owner and in this study is considered to be included in the land rent or charge.

The operating costs are borne by the grower at a flat rate per acre for each irrigation. The amount of water applied per irrigation is left to the judgment of the grower. The rates range from 75 cents to \$2.50 per acre with an average of \$1.50 per acre per irrigation.

Power and Labor Requirements

The operations performed and the average amounts of labor and power required to produce an acre of tomatoes are shown in Table 5. The usual number of times each operation was performed and the total man and machine hours are presented for each operation. Although most of the operations listed were common on a majority of the farms, there was a wide range in the number of times each operation was performed from farm to farm. For example, disking, which was one of the more common operations, was not done on a small number of the farms while on other farms, as many as 5 diskings were reported. The total acreage in tomatoes on the 138 farms in the study was disked an equivalent of 2.5 times. Similarly, the average number of times shown for the other operations are expressed in terms of one-time-over equivalents for the total acreage in tomatoes. Fertilizing is an exception, since those instances in which the fertilizer was distributed by attachments and incidental to other operations, such as bedding and cultivating, are not included as a separate operation. The hours of man and machine time shown are weighted averages for the 138 farms.

The usual preplanting operations consisted of disking, chiseling, floating and bedding twice, and fertilizing and irrigating. The common practice was to disk, chisel and float one time each way. About 72 percent of the farmers distributed a fertilizer prior to planting. A majority of these farmers broadcast this fertilizer, disking or bedding it into the soil. Other farmers distributed fertilizer with an attachment at the first bedding operation, while a small number of farmers distributed fertilizer by hand. One preplanting irrigation was a common practice.

The usual operations from planting time to harvest were plant 1 time; dust 4 times, hoe and thin 2 times; cultivate 4 times; fertilize 1 time, usually with an attachment at the first or second cultivation; irrigate 3 times; and ditch maintenance 4 times.

Table 5. Operations performed and requirements per acre in tomato production, Lower Rio Grande Valley

Operation	Average	Requirements	
	times over ^{1/}	Man	Tractor
	Number	Hours	Hours
Preplanting:			
Flatbreak	.2	.28	.28
Disk	2.5	1.20	1.20
Chisel	1.4	1.10	1.10
Float	1.2	.60	.55
Bed	1.4	.87	.86
Harrow	.1	.03	.02
Fertilize	.6	.42	.24
Irrigate	1.0	3.01	-
Planting to harvesting:			
Plant	1.3	.95	.84
Roll	.2	.11	.11
Harrow	.4	.13	.13
Dust	1.4	.69	.33
Dust, by plane	2.2	-	-
Cultivate	4.3	3.19	3.17
Hoe and thin	1.1	12.64	-
Irrigate	3.7	11.53	-
Fertilize	.3	.64	.10
Hoe	1.5	12.43	-
All other	.2	.13	.13
Ditch maintenance	3.8	1.14	.51
Total	-	51.09	9.57

^{1/} One time over acre equivalent for the 4,734 acres of tomatoes in the sample.

Early spring tomatoes are subject to frost and other weather hazards. Some years it is necessary for the entire crop to be replanted, while in other years none of the crop has to be replanted. It was estimated that an average of 25 percent of the crop was replanted over a period of years.

Dusting with an insecticide was usually done 2 times while the plant was small. After the plant nears maturity it is difficult to dust with a ground machine. Therefore, the usual practice was to dust 2 additional times by plane as the plants approach maturity. Dusting by hand was practiced on 16 percent of the farms; dusting was exclusively by hand on 12 percent and hand dusting was in combination with plane or tractor-drawn dusting machines on the remaining 4 percent.

The usual practice was to hoe and thin once and hoe once. However, allowing for possible damage from cutworms and other hazards, a small number of the growers did not complete thinning until the second hoeing operation.

A nitrogen fertilizer was applied as a sidedressing on 65 percent of the farms. The common practice was to sidedress with an attachment in connection with one or more of the 4 cultivations. As was the case prior to planting, some of the farmers fertilized by hand.

A wide range in amounts of man and machine hours were reported for ditch maintenance on individual farms. Small amounts of machine work were required on some farms; however, a tractor and ditching machine were the common types of equipment used with a usual of 4 times over reported for this operation.

A total of 51 hours of labor and 9 1/2 hours of tractor and machine work was required per acre of tomatoes produced excluding the harvesting operation. The most common custom rate for harvesting and delivering greenwrap tomatoes to the sheds was 80 cents per 100 pounds.

Production Costs per Acre

The estimated costs of producing an acre of tomatoes are presented in Table 6. These estimates are based on usual power, labor and seed requirements, the amounts of fertilizer, insecticides and fungicides used in 1949, and 1949 prices for all cost items including harvesting and delivering to the packing sheds. The hourly rates used in estimating power and machinery costs were computed from data obtained in other areas. These costs do not include supervision and some other items of overhead costs. The limiting factors which prevented a complete cost study were explained on page 7.

Table 6. Estimated tomato production costs per acre, Lower Rio Grande Valley

	<u>Dollars</u>
Seed and materials:	
Seed	5.57
Fertilizer	9.83
Insecticide ^{1/}	8.43
Water	6.90
Labor (other than harvest labor)	13.80
Power and machinery	11.00
Harvest and haul:	
Greenwrap	39.20
Canning (ripe tomatoes)	9.50
Land rent ^{2/}	50.50
Total	154.66
Less value of ripe tomatoes	21.85
Net costs for greenwrap	132.81
Cost per pound of greenwrap	.027

^{1/} Includes costs of application by plane for 2.2 times over.

^{2/} As treated in this analysis, this item would vary from year to year with yields and prices.

Of the estimated production costs shown in Table 6, seed and materials represent 20 percent, labor (other than harvest) 9 percent, power and machinery 7 percent, harvesting 31 percent and land rent 33 percent.

Wages paid to labor varied depending upon the operation performed. Tractor drivers received the highest wages with an average of 36 cents per hour; other labor averaged 25 cents per hour. The average wage for all labor on the farm, excluding harvest, was 27 cents per hour. Harvesting costs were calculated on the basis of the customary contract wage of 80 cents per 100 pounds for greenwrap and 50 cents per hundred pounds for ripe tomatoes.

Because of double cropping and the complexity of other factors in land costs and their joint relationships, value of the landlord's share of the crop on leased land was used as the measure of average land costs (Table 6). Normal yields (as calculated above), average price received by farmers in 1949 and the common share rent of one-fourth were used in determining land rent.

Ripe tomatoes were treated as a by-product of the greenwrap crop. Before computing the net cost per pound of producing greenwrap tomatoes, the value of 1,900 pounds of ripe tomatoes was subtracted from the total costs. The estimated net cost per pound of greenwrap tomatoes was 2.7 cents.

Possible Effect of United States-Mexico Wage Agreement

Concern has been expressed in many quarters as to the effect of the United States-Mexico wage agreement on costs of producing fruits and vegetables in the Lower Rio Grande Valley. The possible effects may be measured, in part at least, by using the above cost information as a basis.

A major part of the labor used in the production of tomatoes in the Lower Rio Grande Valley has been performed at the common rate of 25 cents an hour. Assuming that the wage agreement between the United States and Mexico becomes effective to such an extent that farm wages are stabilized at 40 cents per hour, as provided for in this agreement, labor costs (excluding harvest) would increase from \$13.80 to \$20.44 per acre.

Approximately half of the custom rate of 80 cents per hundred for harvesting was paid to labor at 25 cents per hour. An increase to 40 cents per hour for labor would add approximately 20 cents per 100 pounds. This would be an increase from \$39.20 to \$49.00 per acre for harvesting greenwrap tomatoes. The costs for harvesting ripe tomatoes would increase from \$9.50 to \$12.20 per acre.

Assuming the above increases in labor costs and 1949 prices for all other cost items, the unit cost of producing greenwrap tomatoes would increase from 2.7 cents to 3.1 cents per pound. This would represent an increase of 15 percent in production costs per acre.

In addition to the increased costs of labor due to the 40 cents per hour agreement, growers contracting Mexican labor would have other expenses which are necessary to meet the specifications of the agreement between the United States and Mexico. These costs consist of bonds, insurance, transportation of workers and the like, which should be allocated to the farm as a unit. Also, no increases above 40 cents per hour were assumed for skilled workers such as tractor drivers. These additional costs and subsequent allocations to the tomato enterprise would be difficult to determine. The Federal minimum wage of 75 cents per hour would not affect production costs directly since the law does not apply to labor on the farm. However, if the demand for labor between the packing sheds and the farm became competitive, labor rates on the farm might be forced above 40 cents. The controlling factor would be the available supply of labor.

Cost of Packing Spring Greenwrap Tomatoes

The costs of packing tomatoes in the Lower Rio Grande Valley were obtained in 1947 and reported in detail in TAES Progress Report 1127. These costs were brought up to date and the results are shown in this report. Data were obtained from a random sample of 25 shippers in the Lower Rio Grande Valley for the spring tomato crop. This sample represented 45 percent of the shippers and 50 percent of the rail and truck movement for the spring tomato crop of 1949.

In general, packing costs have remained stable through the 1947, 1948 and 1949 seasons (Table 7). The term, packing cost, in this report includes costs of handling tomatoes from the time they enter the shed until after they are loaded on cars. Material cost increased slightly while labor cost decreased somewhat during this 3-year period. In 1949 the weighted average shed costs per lug were 87 cents, with a range from 75 cents to \$1.05, depending upon volume and type of operation. Costs of packing tomatoes have increased considerably for the 1950 season, as compared with the 3 earlier years. This increase is due to a marked rise in labor costs under the new Federal minimum wage law.

The labor cost per 30-pound lug in 1949 was 28 cents, representing 33 percent of the total cost of packing. Labor cost per lug increased to 36 cents in 1950, representing 38 percent of the total cost. The total labor costs of packing tomatoes were 25 percent higher in 1950 than in 1949 (Table 7). This increase, while drastic, is not as large as might be anticipated on first thought. Cratemaking labor and packing labor are usually paid on a piece-rate basis. These items represent about half of the direct labor costs. Although these workers are subject to the 75 cents per hour minimum, the prevailing piece rate was adequate to insure the workers 75 cents per hour or above. Unless the labor supply becomes much smaller than at present, it should not become necessary to increase the rate for the piece work operations. The percentage increase in labor cost which has been shown is based on total shed labor. The hourly wage rate for various types of labor operations varied from 40

Table 7. Average cost of packing greenwrap tomatoes in the Lower Rio Grande Valley for spring seasons, 1947-50, for 25 firms

	1947	1948	1949	1950
	Cents per 30-pound lug			
Materials:				
Lugs	27.0	29.6	29.5	28.6
Wraps	6.0	6.4	6.6	6.6
Labels	1.5	1.5	1.5	1.5
No-Kuts	.3	.4	.4	.4
Car bracing	5.6	3.0	3.0	3.0
Total material	40.4	40.9	41.0	40.1
Labor:				
Cratemaking	3.5	3.5	2.5	2.5
Wrap and pack	10.0	8.0	10.4	10.4
General shed	16.6	16.0	15.0	22.0
Comp. insurance	.5	.5	.5	.7
Total labor	30.6	28.0	28.4	35.6
Other variable expense	4.6	5.0	5.0	5.0
Fixed expense	4.0	3.5	3.5	3.5
Administrative expense	10.4	9.0	9.0	9.0
Total packing charges	90.0	86.4	86.9	93.2

cents to \$1.00 per hour. The increase, due to the new minimum, in theory would have been 87.5 percent based on an increase from the old minimum of 40 cents to the new minimum of 75. However, data from the representative sample of shippers show that the prevailing wage rate in 1949 was 53 cents per hour when the various wage rates of the firms are weighted by the number of men working at each rate (Table 8).

The weighted wage rate for 1950 operations was 77 cents per hour instead of the anticipated 75 cents minimum. Thus, the effective hourly wage rate increased by 45 percent on all shed labor except the piece rate operations. Wrapping, packing and cratemaking are the most common piece rate operations. All other labor is considered to be on an hourly basis. Under the new minimum wage scale, marketing charges at the shipping point are increased from 87 cents to 93 cents per 30-pound lug, or 7 percent from 1949 to 1950, excluding harvesting costs. Overhead costs are assumed to be the same in 1950 as in 1949. This increase in costs will become greater in the long run unless productivity per worker is maintained or increased.

Some operators made proportional wage rate increases to their best workers in 1950 while other operators replaced their higher paid hourly workers with new personnel at the minimum wage. The full effect of the new minimum on cost of packing depends to a large degree upon the aggressiveness of the management. It appears doubtful, however, that tomato packing costs can be reduced by further mechanization. Present operations have already reached a high degree of mechanization. Also, there is a high degree of specialization of labor which lessens the opportunity for higher labor efficiency. Some shed managers, however, may be able to reduce their costs through closer control and supervision, greater use of the piece-rate system and the adoption of containers requiring less labor in packing. The tomato industry is facing rising costs on one hand and declining prices on the other. The resultant squeeze in the long run, will bring about a decline in the economic status of shippers and growers.

Table 8. Average wage rates and number of workers involved in each phase of the packing operation, 1949-50

Phases of operation	No. of firms reporting	Average no. of workers per firm	Wage rate per hour in cents	
			1949	1950
Receiving and dumping	15	7	50	76
Cull men	14	2	49	75
Bin runners	14	3	59	78
Manifest and stamp	10	3	58	80
General floor workers	12	5	48	75
Graders	15	17	53	77
Truck, check and load	9	5	67	84
Total number hourly workers		42	-	-
Average hourly wage rate		-	53	77

Summary

The greenwrap tomato is the most important vegetable crop in Texas, representing approximately 20 percent of the total carlot movement of vegetables for the State. In the Lower Rio Grande Valley, the tomato crop is relatively more important and accounts for 25 percent of all vegetable shipments from the Valley. The farm value of early spring tomatoes in the Valley averaged about 5 million dollars annually for the 10-year period, 1939-48, and reached a peak of 10 millions dollars in 1945. The acreage devoted to the production of early spring tomatoes in the Lower Rio Grande Valley increased rapidly during the war years, reaching a peak of 65,000 acres in 1945. Since then the acreage has sharply declined and was 27,000 acres in 1949.

Many of the same factors which influenced the increase of tomato production in the Valley during the war years, resulted also in an increase of imports. Mexico is the primary source of tomato imports into the United States. These imports have fluctuated greatly in the last several years; however, the trend has been generally upward. Imports of tomatoes from Mexico into the United States averaged over two and one-half million bushels from 1939-48 and were over four million bushels in 1948. These imports normally enter the United States from November through April. The quantity of Mexican shipments during these months for the period 1944-48 was approximately equal to the tomato shipments from areas within the United States during the same months. More competition is expected at the peak of the shipments from the Lower Valley in May as the new areas develop directly across the Rio Grande in Mexico.

Based on the assumptions previously outlined in this report, a possible effect of the United States-Mexico wage agreement would be an increase of 50 percent in labor costs or \$38.15 to \$57.29 per acre of tomatoes. Labor represented 25 percent of the gross cost per acre on the 138 farms.

Based on the difference in the labor cost of packing tomatoes in 1949 as compared with 1950, the effect of the increase in the Federal minimum wage rate from 40 to 75 cents per hour would be an increase from 28.4 to 35.6 cents per 30-pound lug. This would be an increase of 25 percent. Labor represented 33 percent of the cost of packing tomatoes in 1949 for the 25 firms in this study.