DOCUMENT RESUME

ED 065 241 RC 006 315

TITLE	1971 Post Season Rural Manpower Report.
INSTITUTION	Michigan State Dept. of Labor, Detroit. Michigan Employment Security Commission.
PUB DATE	71
NOTE	39p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Administration; *Agricultural Laborers; Education; *Employment Statistics; *Field Crops; Human Relations; Industrial Technology; Manpower Development; Mechanical Equipment; Migrant Housing; *Migrant Workers; *Recruitment; Rural Areas; Tables (Data)
IDENTIFIERS	*Michigan

ABSTRACT

The Rural Manpower Service reports on the migrant seasonal labor in Michigan during 1971. Seasonal labor has been declining since it reached its peak of 97,700 in 1962. This report discusses migrant seasonal labor with regard to (1) the wages and earnings of the workers, (2) the recruitment of workers, (3) the agricultural-labor housing, (4) the employment statistics and operations, (5) the major crops which employed a large number of workers, and (6) the mechanical and technclogical developments in agricultural labor, Wages and earnings for 14,461 seasonal workers (22.6% of the total seasonal workers employed in cultivation and harvest activities during the 1971 season) are compared with those since 1965. Mechanical and technological developments have affected emplcyment of seasonal workers. Some of the developments discussed in this report are a new harvester used in apple harvesting, a new heating system used in grape cultivation, a new approach to peach pruning, a method of total tree harvest, zero tillage, research done with asparagras, sugar beets, and beans, and year-round bean export. This report includes a discussion on the administration of the Rural Manpower Service and the services it provides, such as job training, recruiting seasonal workers, and providing public and human relations. Some highlights of the 1971 season, such as further research being accomplished with tomato caging, finding suitable land for planting mustard seeds, the growth of the sugar beet industry, a new plant for growing and processing mushrooms, and the decline of the strawberry acreage, are also discussed. A related document is ED 048 968. (NQ)

1971 POST SEASON RURAL MANPOWER REPORT

STATE OF MICHIGAN
WILLIAM G. MILLIKEN, Governor
DEPARTMENT OF LABOR
MICHIGAN EMPLOYMENT SECURITY COMMISSION
S. MARTIN TAYLOR, Director
COMMISSIONERS
FRANK C. PADZIESKI, Chairman
WALTER A. CAMPBELL - ALEX FULLER
RAYMOND M. LYONS - BARRY BROWN

Prepared by

Rural Manpower Service Section

CENTRAL OFFICE MANPOWER DIVISION
7310 Woodward Avenue
Detroit, Michigan 48202

CONTENTS

CONTENTS (continued)

I. ADMINISTRATION

A. ORGANIZATION

Declining seasonal agricultural job openings resulting in a lessening need for agricultural workers combined with the thrust to provide equitable manpower services to rural counties have effected many changes in the organizational structure.

Seasonal locations at Alma, Croswell, Elk Rapids, Jackson and Owendale were closed. Other closings were year-round service points at Berrien Springs, Detroit, Fennville, Holland, Imlay City, Ionia and Monroe. Personnel assigned the aforementioned locations were re-assigned to counties which previously received minimal or no manpower services. In the thrust to assure equitable manpower services to rural areas, new service points were established at Allegan (Allegan County), Albion (Calhoun County), Baldwin (Lake County), Big Rapids (Mecosta County), Charlotte (Eaton County), East Tawas (Iosco County), Gaylord (Otsego County), Gladwin (Gladwin County), Grayling (Crawford County), Harrison (Clare County), Hastings (Barry County), Howell (Livingston County), Lapeer (Lapeer County), Mason (Ingham County), Mount Pleasant (Isabella County), Reed City (Osceola County), Sandusky (Sanilac County), St. Johns (Clinton County), Standish (Arenac County), Three Rivers (St. Joseph County), and White Cloud (Newaygo County). With the exception of Calhoun, Ingham, and St. Joseph, none of the aforementioned counties were previously afforded manpower services on a continuing basis. In the three counties, service locations were established because the branch office serving the county was not centrally located, leaving large areas needing service which the branch offices were unable to provide on a timely basis because of the distance from the jobs and/or applicants and lack of transportation facilities.

B. SPECIAL PROJECTS

During 1971 the Rural Manpower Service has been involved in a number of special projects.

1. OPERATION HITCHHIKE

Operation Hitchhike is an attempt to better serve the rural areas by combining the efforts of the Cooperative Extension Service and the Michigan Employment Security Commission. The Michigan Employment Security Commission is the prime contractor on this project and Michigan State University is the sub-contractor. The University will work through the Center for Rural Manpower and Public Affairs. Allegan and Sanilac Counties were selected as pilot counties in this project. An Extension Manpower Agent has been hired for each county. This agent works under the direction of the County Extension Director for developing ways of serving rural people in cooperation with the Rural Manpower Service. At the university campus, technicians are available to assist both the manpower agents and RAMPS personnel in developing information and cooperating with other agencies. Particular efforts have been made to involve the schools, especially school counselors, in manpower programs.

2. MOBILITY FACILITATOR UNIT

The Michigan Employment Security Commission acting as the prime contractor with the USDL has sub-contracted with United Migrants for Opportunity Inc. to aid a minimum of thirty migrant families in settling out of the migrant stream. The project duration is for 64 weeks. Manpower services to be provided, under the supervision of UMOI, are Basic Adult Education, Vocational Education, Counseling Guidance, Job Development and Placement, relocation assistance and follow-up.

Administrative costs are tentatively estimated at $127,643.00.

3. 21 COUNTY PROJECT

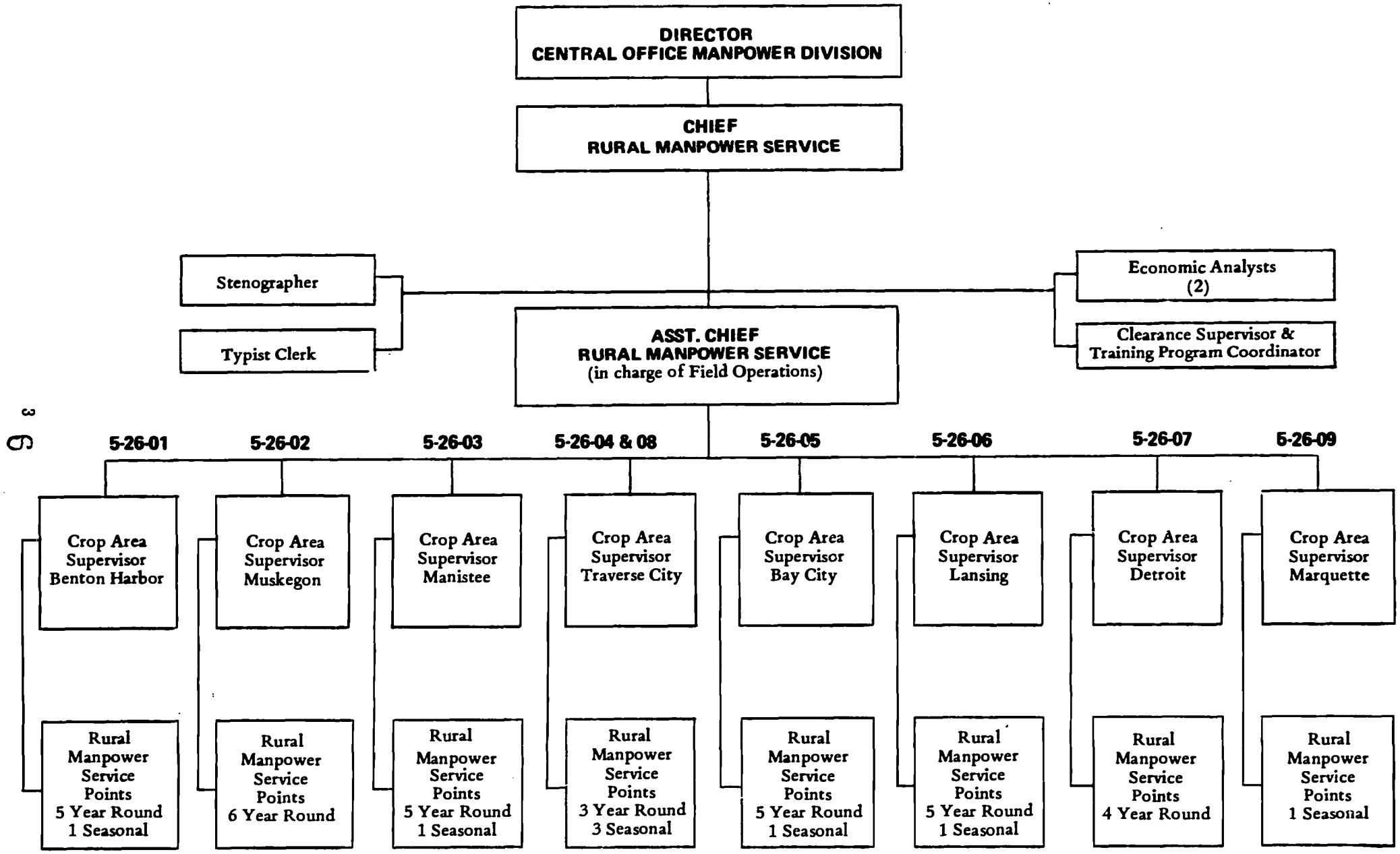
In co-operation with the Department of Social Services the Michigan Employment Security Commission has agreed to provide intensified referral and placement service to job-ready applicants referred from the County Department of Social Services. The Rural Manpower Service points involved are located in Allegan and Mescosta Counties.

C. TRAINING

To assure that Rural Manpower personnel are well informed on the many existing manpower programs, we sought to involve them in as many training programs as possible. During the past year the Rural Manpower staff have been involved in special training programs for the following: ESARS, Job Bank, Jobs Optional, Food Stamps, The Emergency Employment Act, veterans' separation, special programs with the Department of Social Service, and Extension Service organization and services. All newly hired personnel are scheduled for two weeks basic employment service training in addition to the above.

Field training in new methods, procedures and programs continue to be an on-going process involving the State Office staff and Crop Area Supervisors.

ORGANIZATION CHART



RURAL AREA MANPOWER PROGRAM REPORTING AREAS

AGRICULTURAL REPORTING AREAS

- • Location of Crop Area Offices (Year-Round
- # Location of Other Year-Round Farm Placement Representatives
- O Location of Seasonal Farm Placement Representatives
- ■ Location of Branch Offices of Michigan Employment Security Commission

NOTE: Figures in parenthesis indicate Agricultural Reporting Areas. Crop Area 4 is composed of two Agricultural Reporting Areas (5-26-04) and (5-26-08)

MICHIGAN EMPLOYMENT SECURITY COMMISSION

S. MARTIN TAYLOR, DIRECTOR

1971 LISTING OF RURAL MANPOWER SERVICE POINTS IN MICHIGAN

CROP AREA SUPERVISOR OFFICES

St. Joseph, 4140 Scottdale Rd., 49085
Lansing, 3215 S. Pennsylvania Ave., 48910
Manistee, 312 River Street, 49660
Marquette, 104 Coles Drive, 49855
Muskegon, 2492 S. Henry St., 49441
Bay City, 228 S. Washington, 48706
Traverse City, 126 Boardman, 49684
Detroit, 7310 Woodward Ave., 48202

YEAR-ROUND RURAL MANPOWER SERVICE POINTS

Allegan, 344 Water St., 49010
Albion, 112 W. Cass Street, 49224
Baldwin, 1090 Michigan Avenue, 49304
Berrien Springs, RFD No. 2, 49103
Big Rapids, 400 Elm Street, 49307
Charlotte, 528 W. Beech, 48813
East Tawas, Community Bldg., City Park, 48730
Gaylord, Otsego County Court House, 49735
Gladwin, Gladwin County Court House, 48624
Grayling, Crawford Co. Court House, 49738
Harrison, Clare County Court House, 48625
Hastings, 110 W. Center St., 49058
Howell, 326 E. Grand River, 48843
Lapeer, 128 N. Saginaw St., 48446
Ludington Trailer, Rath at Loomis, 49431
Mason, 117 E. Oak Street, 48854
Mt. Pleasant, 113 Chippewa St., 48858
Pontiac, 242 Oakland, 48058
Reed City, Osceola Co. Court House, 48677
Sandusky, 34 E. Sanilac, 48471
Shelby Trailer, Rt. No. 2, Box 38, 49455
Sparta, 8221 Fruit Ridge N. W., 49345
South Haven, 505 Quaker Street, 49090
St. Johns, 1002 E. State Street, 48879
Standish, Arenac Co. Court House, 48658
Three Rivers, 333 W. Michigan, 49093
White Cloud, 311 Williams St., 49349

SEASONAL RURAL MANPOWER SERVICE POINTS

Bear Lake Trailer, Star Route, 49614
Elk Rapids (Trailer), 49629
Hancock, 435 Hancock, 49930
Keeler, Route No. 2, Hartford, 49057
Spratt, Route No. 2, Lachine, 49753
Suttons Bay, Route No. 2, 49682

II. HIGHLIGHTS OF THE 1971 SEASON

A. A NEW CROP IN THE UPPER PENINSULA

Farmers in the Soo area of the Upper Peninsula had very poor grain crops in 1969 and 1970. Thus, doubts arose as to the future of farming in this area.

An official of a Montana Mustard Seed Company suggested to a grain elevator operator that a mustard seed crop might be a "life saver" for the area. That by simply plowing and disking the land once and planting eight pounds of seed per acre, a 1,200-2,000 pound yield per acre could be achieved. Mustard seed has basically been a regional crop in the Northwestern U.S., but fears have arisen that demand will exceed their production. This prompted the search for additional suitable land.

The planting suggestions were followed with objection being raised by some horticultural experts. The farmers planted 2,340 acres in the manner prescribed by the company whereas horticulturists more conservatively felt only around 1,000 acres should be planted the first year, utilizing different tillage methods and varied amounts of seed per acre.

The first crop was considered poor. Of the 2,340 acres planted, only 1,840 were harvested. 200 acres were flooded out. On 250-300 acres, the plants were so thin it didn't pay to combine them. In clay soil only 2/3 of the plants grew, reaching only 14-26 inches in height, whereas they reach 36 inches in Montana. The yield in clay soil was 200-600 pounds per acre, but in sandy loam soil results were more promising, reaching 26-30 inches in height and yielding 1,000-1,300 pounds. The harvest was in late September, the rainy season, so the seed had to be dried before shipment with only one grower owning a grain dryer. Many problems were incurred, resulting in some losses, as often happens in new ventures. But the Extension Service feels that mustard seed will be grown again in the area in 1972, especially by farmers with sandy loam soils. They expect to increase planting to fifteen pounds per acre.

The crop requires little or no labor outside that supplied by the farm operator and his family.

B. TOMATO CAGING

Two years ago this publication reported on the apparent success of a Michigan grower's introduction of caging to tomato horticulture. He reports continued success at getting a high yield of number one fruit and now has almost all of this tomato acreage in wire cages. Meanwhile, many other growers have adopted this innovation.

Research conducted at the Sodus Horticultural Institute tentatively verified that the yield of number one tomatoes is greatest when they are grown in these "cages", eighteen inches in diameter, on plastic mulch and on open soil.

Three varieties were tested (Ace, Heinz 1350 and Campbell 1327) and all "performed relatively better than on mulch or bare soil when given evaporative cooling treatments."

"Caging may be a profitable practice, in spite of the higher labor requirement but further study is needed to verify the results, and to locate other varieties that respond to caging."

C. SUGAR BEET INDUSTRY CONTINUES TO GROW

Michigan is the nation's fourth largest sugar beet growing state, and boasts two major

beet sugar processors. Growers, still of the family variety, have continued to operate profitably year in and year out while other areas of agriculture have been having difficult times.

Sugar beet production is strictly controlled by the U.S. Department of Agriculture in accordance with the Sugar Act of 1948. The Department first estimates how much sugar will be consumed throughout the year. Once this is done, quotas are figured out for the domestic industries, Puerto Rico and the Virgin Islands. Then import quotas are set for such widely separated countries as Ireland, Bolivia and Fiji Islands. In the case of the beet sugar industry, the U.S. total is then divided into geographical areas such as California northwest or Ohio-Michigan and they are given quotas. The breakdown continues to districts, counties and ultimately the assignment of acreage to farmers.

The system has worked unusually well and many non-beet farmers would like to participate. But agriculture is particularly sensitive to over supply, and the quotas are strictly limited in order to control this. Also, sugar companies issue contracts in advance for no more beets than their plants can handle during the winter. Naturally the company tries to satisfy its need through experienced growers rather than with new farmers.

Beet growers wasted no time when technology facilitated increased production and lower production costs through mechanization. The harvest has been totally mechanized for 20-25 years and when space planting and chemical weed control methods recently appeared on the scene, they made an incredibly rapid transition to the utilization of these methods in lieu of cultivation by hand labor. Michigan's record 1,826,760 ton harvest in 1970 was largely attributed to these methods and coincidental, favorable weather.

Our two sugar companies have not been lacking in contributing to the success of the industry. Factory improvements have been consistent in both, not only in improving and enlarging production of their products but in the attempt to abate pollution emitted from plants built before this became an issue.

All this has resulted in continued profit for both processor and grower. Unfortunately, as in the evolution of many other industries in many areas of the economy, the role of the hand laborer continues to decline, progressively reducing his sharing in its growth.

D. NEW PLANT TO GROW AND PROCESS MUSHROOMS

A large processing enterprise confirmed plans to build a new plant in Fennville, employing 140 persons. The plant is to grow and process mushrooms for the major food manufacturer and is being built on a 280 acre site in Ganges Township within the Fennville School District. Fennville citizens are quite happy about the development which will ease unemployment created by the closing of another major plant early in the year. A township official remarked that, "It certainly will be a big boom for the community."

E. STRAWBERRY ACREAGE CONTINUES DECLINE

Strawberry acreage is declining nationwide with Michigan being no exception. The U.S. had 53,150 acres harvested in 1970 as compared to 50,580 this year. Michigan's drop was roughly the same proportionally, 6,200 to 5,600, about 9½ percent. In 1972, however, our acreage has been estimated by the USDA at 4,400, a very sharp 21 percent decrease. If that figure proves to be correct, the state will have had a 40 percent loss in acreage in six years.

Several reasons are offered as collectively contributing to this decline:

– –persistent, increasing competition from lower priced Mexican grown berries, both frozen and fresh;

– –the crop's persistent resistance to mechanization. The most up-to-date mechanical pickers being developed comb and strip the vines only after the foliage has been clipped off, a once over operation which significantly lowers the yield;

– –in-season competition in the midwest from California. Their production has been so high that, where they previously sold their berries here before and after the local season, efforts are now being made to hold these customers through June and July.

Efforts to circumvent the squeeze seem, at best, long term. Industry horticulturalists plan a plant breeding program designed to develop plants that will ripen more of the fruit at one time, thus making it more receptive to mechanized harvesting. They also intend to develop strong pedicels that will keep the fruit up off the ground producing berries that are firmer and can take more handling.

No breakthrough is anticipated in the slow process of plant breeding, and the upward trend of Mexican grown berries is expected to continue. Much acreage is expected by some to be converted to raspberries, blackberries and boysenberries, even though raspberries have been troubled by diseases in this state. However, harvesting of the bramble fruit is much easier to mechanize and will not improve employment opportunities for seasonal farmworkers.

III. WAGES AND EARNINGS

In compliance with the regulations promulgated by the United States Secretary of Labor governing eligibility for assistance in interstate clearance recruitment of agricultural workers, wage surveys were conducted wherever it was administratively possible. Prevailing wage findings were made for crop activities in which a number of farmworkers were recruited outside of the state through the assistance of the Employment Service. Wage surveys were also conducted in crop activities with a history of wage fluctuations, and in those activities which preliminary research indicated that the wage structure had changed significantly since the previous survey was conducted. However, findings were not made when valid samples could not be obtained.

Rural Manpower Service personnel, during the 1971 season, conducted eighteen area wide wage surveys and one state-wide survey. The wage surveys encompassed seven pre-harvest and harvest activities in nine wage finding classes. Nineteen prevailing wage findings were determined in eight crop areas, and one state-wide finding was made in pickle harvest. Fruit crop activities accounted for sixteen of the wage findings, and the remaining were in vegetable crop activities.

In meeting sampling requirements, data were collected and recorded on 14,461 seasonal workers, 22.6 percent of the total number of seasonal workers employed in the activities surveyed during the 1971 season. Workers from instate sources comprised 21.8 percent (3,152 workers) of the total sample, while interstate sources accounted for 78.2 percent (11,309 workers). Vegetable harvest and cultivation employed 27.3 percent (3,946 workers) of those sampled, while fruit cultivation and harvest employed 72.7 percent (10,515 workers). The sample was drawn from a total population of 64,054 seasonal workers. The proportion from instate and interstate sources were the same as those in the sample (See Tables "A" and "B"). The samples covered 580 employers of which 455 grew fruit crops and 125 grew vegetable crops. They comprised 12.8 percent of the total number of employers hiring workers during the survey period in the activities surveyed.

TABLE A. A comparison of the universe of workers employed in the activities surveyed in 1970 and 1971:

Workers	1970	Percent	1971	Percent
Instate	18,167	29.5	13,985	21.8
Interstate	43,468	70.5	50,069	78.2
Total	61,635	100.0	64,054	100.0

TABLE B. A comparison of the sample of workers employed in the activities surveyed in 1970 and 1971:

Workers	1970	Percent	1971	Percent
Instate	6,569	33.0	3,152	21.8
Interstate	13,326	67.0	11,309	78.2
Total	19,895	100.0	14,461	100.0

TABLE C. A comparison of the 1965-1971 weighted average hourly earnings of piece and hourly rated workers is presented below:

Method of Payment	1965	1966	1967	1968	1969	1970	1971
Piece Rates	$1.082	$1.333	$1.441	$1.656	$1.680	$1.652	$1.956
Hourly Rates	1.183	1.297	1.301	1.422	1.351	1.489	1.605
Combined Piece & Hourly Rates	1.100	1.322	1.409	1.597	1.615	1.621	1.934

Due to the selectivity of the data used in the wage surveys, caution must be exercised in the interpretation of the statistics derived from the wage surveys, especially when these statistics are compared with those of previous years. Many factors are involved such as type of activities surveyed, crop wage areas surveyed, characteristics of the unit of payment used in the activities surveyed, and the influence of adverse weather effects on the rates. Furthermore, the increase in the Michigan minimum hourly rate, to $1.45 per hour, became effective midway through the harvest season (July 1, 1970) for hourly rated workers, while comparable piecework rates did not become effective until September 21, 1970, by which time most seasonal crop activities were completed. The second increase to $1.60 per hour and comparable piece rates became effective July 1, 1971. This resulted in raising the wage rate floor for hourly rated workers approximately two months before that for piece work rated workers, thereby limiting comparisons or analysis of the total wage survey data. Meaningful comparison of the average hourly earnings of hourly and piece rated workers should utilize 1969 as a base year rather than 1970, to reflect the true effects of the new minimum wage law for the two methods of payment.

Comparison of the 1970 and 1971 wage surveys and findings disclosed the following:

Twenty prevailing wage findings in nine wage finding classes were resurveyed in 1971. Ten of the findings remained unchanged, while nine others (45 percent) showed an increase, compared with twelve percent in 1970. No conclusions were made regarding the possible changes in wage rates and earnings in pickling cucumber harvest since an hourly unit of payment prevailed in 1970 while a piece work unit payment was common in 1971. The increase in the wage rates can be attributed largely to the higher

minimum wage rates. Those findings which did not show an increase over the previous year had a prevailing wage finding, in 1970, greater than or equal to the new minimum wage rates.

A major effect of the new minimum wage rates was a raise in the wage rate floor of all crop activities. At the same time, the tight economy kept the wage rate ceiling at approximately the same level, thereby reducing the range between the lowest and highest rate in each crop activity. The average hourly earnings of hourly rated workers in the 1971 surveys showed a 7.8 percent per hour increase over that of 1970, while that of piece-work rated workers increased 18.4 percent over that of 1970. The combined average hourly earnings of piecework and hourly rated workers in 1971 was 19.3 percent higher than that of 1970. The discrepancy in the percentage increase for the hourly and piece work rated workers is attributable to the different dates, in 1970, on which the new minimum rates became applicable. When 1969 is used for comparison, the average hourly earnings for hourly rated workers in 1971, shows an increase of 18.8 percent, compared to an increase of 16.4 percent for piece work rated workers.

Analysis of data in Tables "A" and "B" indicated that there was an increase in the percentage of interstate workers sampled and a corresponding decrease in the percentage of instate workers. These trends should not be generalized to the entire labor force, since they apply only to crop activities where growers used the Employment Service to recruit interstate workers and to crop areas in which these surveys were conducted. A fuller discussion of the seasonal farm labor force will be found in the Employment and Operations section of the report.

MICHIGAN STATE MINIMUM PIECEWORK RATES

Minimum piece rates were established by the Wage Deviation Board of the Michigan Department of Labor for vegetable and fruit harvest in compliance with Section 14 of Act 154 of the Public Acts of 1964. A list of these rates follows. Any known instance where an employer is offering less or different basic rate than the rate established by the Wage Deviation Board is being reported to the Wage and Hour Division, Bureau of Safety and Regulation, Michigan Department of Labor, for investigation and determination. However, the established rate may be reduced in some cases up to a maximum of 16 percent for housing being provided to the workers, if such facilities are licensed under Act 289 of the Public Acts of 1965.

Vegetable Crop Harvest	Unit	Rate Effective July 1, 1971
Asparagus	Pound	5.0¢
Beans (Snap)	Bushel	$1.42
Cucumber (Pickles)	Pound	2.0¢
Greens	25 Pound Crate	29.5¢
Lettuce, Head	24 Head Crate	8.7¢
Onions, Dry (Yellow)	5 Peck Crate	12.0¢
Onions, Dry (White)	5 Peck Crate	21.0¢
Onions, Green	Bunch (8-9 Onions per bunch)	3.2¢
Peppers, "Cherry"	Bushel	$1.029
Peppers, "Long Green"	Bushel	27.8¢
Potatoes	Bushel	9.4¢
Radishes	Dozen bunches (18-20 radishes per bunch)	26.5¢

Vegetable Crop Harvest	Unit	Rate Effective July 1, 1971
Tomatoes, Fresh	5/8 Bu. Hamper	23.4¢
Tomatoes, Process	5/8 Bu. Hamper	16.9¢

Fruit Crop Harvest	Unit	Rate Effective July 1, 1971
Apples	Bushel (Stripping Rate)	18.5¢
Apples, Crab	Bushel (Stripping Rate)	64.0¢
Blackberries	Quart	18.0¢
Blueberries, Hand Picked	Pound	9.5¢
Blueberries, Hand Vibrator Assisted	Pound	2.5¢
Cherries, Tart	27 Pound Lug	89.0¢
Cherries, Sweet	24 Pound Lug	98.0¢
Grapes, Concord & Niagara	Pound	0.98¢
Grapes, Delaware	Pound	1.25¢
Peaches, Process	Bushel	20.8¢
Pears	Bushel	28.6¢
Plums (Blue Damson, etc.)	Bushel	$1.28
Prunes (Italian, Stanley, etc.)	Bushel	50.3¢
Raspberries, Black	Quart	18.0¢
Raspberries, Red	Quart	25.0¢
Strawberries, Fresh	Quart	9.5¢
Strawberries, Process	Pound	6.8¢

Strawberry Plants Harvest	Unit	Rate Effective July 1, 1971
Strawberry, Plants (Machine Assisted)	Thousand	$3.15
Strawberry, Plants (Non-Mechanically Assisted Operation)	Thousand	$4.20

TABLE OF PREVAILING WAGE RATES PUBLISHED IN 1971

Area, Activity and Wage Finding Class	1971 Prevailing Wage Rate		Weighted Average Hourly Earnings in 1971
STATEWIDE			
Pickle Harvest	50¢	per 25-lb.	$2.26
BENTON HARBOR CROP AREA (05-26-01)			
Apple Harvest (Regular Pick)	30¢	per bushel	$2.27
Cherry Harvest, Tart (Hand Pick)	90¢	per 27-lb. lug	$1.53
Strawberry Harvest (Pick for Fresh Market)	75¢	per 8-qt. carrier	$1.69
Tomato Harvest (Hand Pick for Process with Stems)	17¢	per 5/8 bushel hamper	$2.04
MUSKEGON CROP AREA (05-26-02)			
Apple Harvest (Regular Pick)	30¢	per bushel	$2.57
Blueberry Harvest (Hand Pick)	9½¢	per pound	$1.19

MUSKEGON CROP AREA (continued)		
Cherry Harvest, Tart (Hand Pick)	$1.00 per 27-lb. lug	97¢
MANISTEE CROP AREA (05-26-03)		
Apple Harvest (Regular Pick)	25¢ per bushel	$2.53
Cherry Harvest, Sweet (Hand Pick)	$1.00 per 24-lb. lug	$1.80
Cherry Harvest, Tart (Hand Pick)	$1.00 per 27-lb. lug	$1.35
Strawberry Harvest (Hand Pick for Fresh Market)	$1.44 per 16-qt. case	$2.26
Strawberry Harvest (Hand Pick for Processing)	6.5¢ per pound	$1.82
TRAVERSE CITY CROP AREA (05-26-04)		
Apple Harvest (Regular Pick)	30¢ per bushel	$2.46
Cherry Harvest, Sweet (Hand Pick)	$1.00 per 24-lb. lug	$1.72
Cherry Harvest, Tart (Hand Pick)	$1.00 per 27-lb. lug	$1.93
BAY CITY CROP AREA (05-26-05)		
Row Crop, Cultivation	$1.60 per hour	-
LANSING CROP AREA (05-26-06)		
Apple Harvest (Regular Pick)	30¢ per bushel	$2.93
YPSILANTI CROP AREA (05-26-07)		
Tomato Harvest (Hand Pick for Process, with Stems)	17¢ per 5/8 bushel hamper	$1.92
ALPENA CROP AREA (05-26-08)		
Strawberry Harvest (Pick for Fresh Market)	76¢ per 8-qt. carrier	$1.94

IV. RURAL MANPOWER SERVICE

Continuing in its efforts to provide manpower service to as many rural counties as is feasible and in keeping with the adopted policy to establish Rural Manpower Service Points in those counties not at present actively served by a local office or a concentrated employment program, nineteen additional service points have been established. To date, the Service is operating in twenty-three counties which previously received minimal or no manpower services.

Since the acceptance of the program is dependent to a great extent upon community support, including the organizations within the community, it is to the credit of Rural Manpower Service personnel that they have been able to command the respect and cooperation of community leaders and agencies in establishing service points in rural counties. It is also complimentary of those same community representatives that they recognize the need for these service centers and are willing to work in improving the situation. To them we owe a sense of gratitude for their cooperation and assistance.

The Rural Manpower Service continued to serve agricultural employers and applicants

seeking employment in agriculture, operating a total of thirty-eight service points during the year. Of these, six are seasonal operations concerned primarily with seasonal agricultural activities. Six others are year-round locations mainly concerned with agriculture, performing a limited amount of activities in other areas. The balance of twenty-six are locations concerned with all manpower activities in rural counties, both agricultural and non-agricultural, but rural non-agricultural activities exceed the agricultural needs.

Activities are summarized as follows: 8,172 visits were made to employers, 5,309 agricultural and 2,863 non-agricultural. Other contacts not involving personal contacts totaled 8,558. Altogether, agricultural employers were contacted 14,246 times while other were solicited 6,362 times. Rural Manpower personnel provided industrial services to forty-nine agricultural establishments and 305 non-agricultural.

From these contacts 5,587 job orders resulted, 3,667 of which were agricultural and 1,920 were in non-agricultural work. Job openings received through these orders totaled 42,343 of which 38,986 were in agricultural and 3,356 in non-agricultural jobs.

36,293 placements were made, 2,143 with non-agricultural employers and 34,150 in agricultural work. 2,477 youth were placed one or more times. 814 referrals were made to supportive service agencies including 210 to health agencies and 604 to educational services. These referrals to educational services included Basic Adult Education, Vocational, Manpower Development and Training, Jobs Optional (OJT) and General Education Development.

399 were referred to branch offices for testing and 510 for counseling. Referrals to other governmental services, involving requests for emergency food and clothing, housing, legal aid and financial assistance, social security, rehabilitation, transportation, civil rights, wage disputes, and veterans' assistance totaled 10,605.

A. JOBS OPTIONAL

With the great strides being made in mechanization, some producers encountered difficulty finding men to handle the new types of equipment. With funds from the Jobs Optional Program, the timber industry in the Upper Peninsula is having success training unskilled men to operate new timber processing equipment such as skidders and slashers. With the OJT program, costs are sharply reduced for the producer as he is reimbursed from 25 percent to 50 percent of training costs. Even if he loses the man after training, the cost has not been excessive and the industry has gained a trained man. Below are four of the success stories resulting from this program:

– – Ed is a forty-nine year old WW II veteran. A piece maker for years, he lost his job and for a year had only a $2,300 income. MESC referred him to a logging employer who hired him, granting a $100 advance until pay day. An OJT contract was drawn up and he was trained as a skidder operator at a starting wage of $3.00 per hour. Upon successful completion of training this was up to $3.50 per hour and Ed was on his way. His employer commented that: "Ed never seems to work fast, but when I add up the total amount of pulp or logs skidded in a week, he always has hauled more than any other operator I have."

– – David, a twenty-one year Vietnam veteran, is from a near poverty family. Before the service he earned $1.60 per hour as a lumber piler. After discharge he could not find any job and did not want to leave this area. He was referred to a logging contractor and was hired at $2.75 per hour. After ten weeks of OJT he was earning $3.00. He is now a skilled skidder operator and is helping his family financially. The training program has given him a start and averted the necessity of emigrating from the

beloved Upper Peninsula to a city ghetto to seek work.

– – George was a thirty-nine year old disadvantaged applicant with an eighth grade education and six dependents. He had worked the last 4½ years in an underground mine that was closed permanently in January 1971. Referred to a logging employer, he was hired at $2.60 per hour and given an OJT contract. After twenty weeks of training his wage will be $3.00 per hour. The employer stated: "When you phoned and said you had a needy person who wanted a job, I didn't expect such a good worker as George. I could take more like him."

– – Daryl was a disadvantaged minor who had earned $1,720 in the last year. He had not been able to express himself well to prospective employers and thus was never hired for the work he wanted. After an interview in his home, he was referred to a logging employer and was hired under an OJT contract as a slasher operator. His starting wage was $2.50 per hour. He is performing well and after six months of training will be earning $3.75 per hour.

B. FARM EQUIPMENT MECHANIC COURSE

Funded under the Manpower Development and Training Act (MDTA), a Farm Equipment Mechanic course was established in 1965. The Bay City Board of Education Department of Vocational Education is responsible for the training, which runs forty hours a week for forty-two weeks.

The students work on equipment provided by authorized dealers, who are responsible for all costs incurred in the repair of the equipment plus a $10 charge for each tractor for miscellaneous items. Training involves maintenance and repair of farm equipment with a strong emphasis on tearing down and rebuilding machinery including small air cooled engines to restore it to functional usefulness. Carburetors, fuel pumps, water pumps, alternators, hydraulic systems and even complete tractors are totally rebuilt in many instances. Welding broken parts, rather than purchasing them new, is also emphasized. Besides this laboratory work, mechanical theory is included in the curriculum.

Most participants have been young men in their twenties or early thirties from various counties throughout lower Michigan. Since the course began, 228 have enrolled with 131 graduating (58%). Of these graduates, 113 are known to have jobs with 85 in positions related to their training. The location of the remaining 17 graduates is unknown at present.

C. DAIRY FARM HAND COURSE

In October of 1967 a Dairy Farm Hand course was funded under the Manpower Development and Training Act (MDTA) and established at Andrews University in Berrien Springs. Its purpose is to provide trainees with a basic knowledge of milk production, sanitation, disease control and feeding practices. Students are also given the opportunity to develop skills in the operation of modern milking systems and automated feeding systems. For twenty weeks the trainees spend one half of each day in the classroom and the remaining training on-the-job. Classroom work is devoted to the physiology of milk secretion, physiology of reproduction, dairy cattle nutrition and herd health. On-the-job training is devoted to supervised experiences in milking and sanitation procedures and field techniques for milk testing and artificial insemination.

The first two classes graduated twenty students after which class size was reduced to

fifteen to give the instructor more time for individual instruction. To date, six classes have been conducted, from which about eighty students have graduated. The seventh class is now in progress.

The demand for trainees has exceeded the number available for employment. It has received publicity in several dairy industry publications. Enrollment applications have been received from such states as Kansas, Ohio, Indiana and Wisconsin. Graduates have been pleased with what they've learned.

One student from Wisconsin who proved to be ineligible for subsistence payments completed the training at his own expense. Another, after completing the course, enrolled in a four year agricultural program at the university. Three others have enrolled in agricultural programs in other colleges. Several went to work with the Dairy Herd Improvement Association while others went into related industries, such as the Michigan Animal Breeders Association, as artificial inseminators.

All those concerned have been pleased with the results of this training program.

V. RECRUITMENT

Active recruitment of seasonal agricultural workers through the Rural Manpower Service has, in previous years, been a vital operation and generally began about the first of the year, and in some cases about six months before the labor was actually needed. In 1971, with an enormous surplus of migratory labor in the offing, an opposite approach was in order in that interstate workers were, to a considerable extent, actually discouraged from seeking work in Michigan. It was felt that if the movement of workers into the state was limited to those who had bonafide job commitments, less suffering would result.

Several steps were taken to control the movement:

– – the only recruitment done through interstate clearance was to help workers, who had previously been employed by specific farmers, to validate work offers from those employers;

– – Employment Services in southern states were asked to refer to Michigan only those migrant workers who had bonafide job orders or commitments;

– – All growers who had hired migrants in the past, but who did not need them this year, were asked to write to their former crew leaders and family heads that the old job was no longer available;

– – farmers were alerted to the prosecution risks of interstate recruitment contracts that are violated;

– – sugar beet and pickle processors did not advance travel money to those who were to cultivate and/or harvest crops of their contract growers;

– – through the Archdiocese of Detroit, free-wheeling migration was discouraged by Catholic padres in migrant communities in the South;

– – the Farm Bureau utilized its interstate facilities to discourage migration by those who did not definitely have jobs awaiting them;

– – throughout the season the weekly Central States and Eastern Seaboard Bulletins

carried notices to the effect that migrant agricultural workers should avoid Michigan unless they had definite job commitments.

The effort was considered successful, especially when considering the difficulty of keeping any form of control of such a mobile population. Most migrant workers who came to the state found work, observation indicated that the surplus of free-wheelers appeared to be minimal. Few transportation problems were encountered. In the few isolated instances when a shortage developed, local help was solicited via TV, radio or newspaper commercials.

Twenty interstate clearance orders were extended out-of-state for 1,104 workers. Seventeen of these orders went to Texas. Eighteen orders were filled with 977 workers. Eighteen orders were received from other states, thirteen of these from the Mid-west. These were canceled before referral could be completed.

The Rural Manpower Service received 461 interstate requests for assistance in finding or obtaining verification of job orders, 269 of which came from family heads and 155 from crew leaders. These queries sought jobs for 838 families having 6,051 workers with a total of 7,122 people. These groups had 674 unattached males and 165 unattached females. Only fifteen intrastate individuals applying for seasonal farm work were registered.

VI. MAJOR CROPS

Employment of seasonal agricultural workers has been declining since it peaked at 97,700 in 1962. Since that date mechanization and other technology brought about a drastic decline in the need for farm labor throughout the state. It is anticipated that this labor force will stabilize at around 15,000 to 20,000 in the next few years. Following is a breakdown of seasonal employment by date and sources of workers (local, intrastate, interstate) for 1971, in those crop activities in which a relatively large number of workers were employed. The crops related to these activities are not necessarily Michigan's most productive or largest revenue producing crops.

A. **APPLES (FALL):** Growers produced another bumper crop of 720 million pounds of apples. This was ten million pounds more than last year and equal to 1969. Michigan ranked third among the major producing states.

The hot, dry summer reduced average size but ideal harvest conditions offset this, resulting in a respectable yield. Nationwide bumper crops have depressed market prices the past three years. In some areas of the state, growers either established "pick-you-own" activities or abandoned a portion of their crop.

A 21 page report entitled, "Economics of Apple Production in Southwestern Michigan," was released by the Berrien County Extension Service, MSU Department of Agricultural Economics. In this report it was stated that average costs of $1.14 to $2.47 was entailed, depending on yield per acre, to grow and harvest a bushel of apples in Michigan's southwest. With a yield of two hundred bushels, cost average $2.47 per bushel. These costs decrease to $1.14 per bushel as the yield increases to seven hundred bushels per acre.

Following is a production table of seven major varieties which account for 75 percent of the state's output. Of these, 83 percent were Jonathan, Delicious and McIntosh. The Delicious crop was up 52 percent from last year. This was the off

year in the "every-other-year cycle" of Northern Spys so data on this variety was not tabulated. It was noted, however, that growers in the Traverse City area who applied "Amid-Thin" to thwart this cycle had a marketable crop.

1971 MICHIGAN APPLE PRODUCTION

VARIETY	U.S. RANKING	MILLION POUNDS	1000 BUSHELS
Jonathan	1st	185	4,405
Delicious	3rd	145	3,452
McIntosh	3rd	120	2,857
Golden Delicious	8th	32	762
Rome Beauty	5th	30	714
Stayman	5th	20	476
Cortland	3rd	10	238
All Other	-	178	4,239
Total	3rd	720	17,143

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
September 15	3,165	1,250	150	1,765
September 30	9,220	3,235	125	5,860
October 15	11,765	4,745	175	6,845
October 31	9,030	3,625	100	5,305
November 15	1,120	575	-	545

Some 11,765 workers were employed at the peak of the apple harvest (October 1-15). This period of maximum employment occurred two weeks later than last year and an additional 515 workers were involved. Roughly $3,000,000 were paid in wages.

B. **ASPARAGUS**: Asparagus was mostly hand-snapped this year. Sleds could not be used because of adverse and cold weather which delayed growth and of course retarded the harvest cycle. A few stands were abandoned.

Acreage increased four percent to 15,600 while total production fell off to 9,350 tons, a drop of about three percent. This resulted in yield declines, both for fresh market and processed asparagus, of 21 percent and eight percent respectively. 8,900 tons went to processors, the same as last year, while about 9,000 hundredweight were sold on the fresh market, 21 percent less than in 1970. The crop had an estimated value of $4,516,000.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
May 15	4,367	1,998	7	2,362
May 31	4,523	2,068	15	2,440
June 15	3,422	1,460	32	1,930

Peak employment in harvesting asparagus totaled 4,523 workers, an increase of 2,163 or 92 percent. This was no doubt due to the harvest problems mentioned above in which growers encountered difficulty in using sleds, thus de-emphasizing the normal impact of mechanized meth·ds of harvesting a crop. About $600,000 were paid in wages to seasonal workers e ged in asparagus harvest activities.

C. **BLUEBERRIES:** After falling off seven million pounds last year, blueberry production returned to the 1969 level of almost 31,000,000 pounds.

9,786,260 pounds were delivered to fresh markets while a total of 21,186,095 pounds went to processing plants. Processors froze 16,997,534 pounds and the remaining 4,188,561 pounds were canned.

This year's production was about 4.4 million pounds greater than the six year average from 1965-70, about 3.6 million pounds less than the high (1967) for that period, and over 10 million pounds greater than the production realized in the low year (1965).

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
July 15	300	175	-	125
July 31	3,775	1,800	50	1,925
August 15	4,905	2,355	-	2,550
August 31	3,055	1,860	-	1,195
September 15	615	455	-	170

An estimated 4,905 persons were employed at the height of the blueberry harvest which occurred between August 1 and August 15. This represented a decline of 240 workers from last year. About $500,000 were paid in wages to seasonal employees.

D. **CHERRIES:** Early in the season, frost and dry weather in the central west and cold, wet weather in the northwest retarded cherry bud development. Hot weather and high winds later reduced the quality and quantity of the crop, and necessitated extensive sorting near the end of the harvest season. Quality was significantly low in the southwest with some orchards being abandoned.

The market ranged from 10 cents to 11.5 cents per pound for tart cherries sold to processors. Grower organizations became quite upset in some areas. Some growers set up a "gate watch" at one of the large processor's receiving stations in July to ask other growers not to deliver their cherries to the company. The processor offered ten cents a pound for 92 grade tarts while the growers felt 11.5 cents would be more fair. Some vandalism was reported at one receiving station. The processor said their price scale appeared to be in line with that of others, and that prices offered by packers were 3-3½ cents above those of last year.

Sweet cherry production of 21,000 tons equaled 1970, down 2½ percent from two years ago. Tart production came to 80,000 tons, up a fraction from last year but still down 25 percent from the 106,000 tons in 1969.

Mechanization increased dramatically, especially with trunk shakers. Seventy-five percent of the tart crop was reportedly harvested by machine and a new chemical, Ethrel, promises to solve the problem of mechanically harvesting sweets with stems intact.

As usual, Michigan ranked first in the nation in tart production, accounting for roughly three-fifths of the market in the ten tart cherry producing states, but slipped to fourth in the production of sweets.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
July 15	13,710	2,550	1,670	9,490
July 31	9,725	1,440	610	7,675
August 15	240	125	-	115

At the peak of the harvest, July 1-15, 13,710 workers were utilized by growers and processors. This was 9,530 less (41%) than were employed during the maximum period in the year previous. Obviously, mechanization continues to dramatically reduce the industry's need for seasonal workers. Some $2,000,000 were earned by those finding jobs harvesting cherries.

E. **CHRISTMAS TREES:** According to legend, in the eighth century a cult developed which worshiped the oak tree. St. Boniface, in opposition, declared a young forest fir sacred. Some 700 years later Martin Luther is credited with introducing the tree indoors to celebrate the birth of Christ. In another two centuries or so, Hessian Mercenaries in the British Army are said to have brought the custom to America during the revolution. More recently, Michigan has relished a multi-million dollar business selling a variety of pines at the end of the year.

Last Yuletime a Wyoming, Michigan housewife discovered little bugs invading her living room. Experts investigating her tree soon determined that the unwelcome guests were cereal leaf beetles which had taken to hybernating under the rough bark of Scotch pines, our principle export tree. This posed a serious interstate threat to grain crops since trees are exported nationally east, south and west.

After months of anxiety for this $20 million industry, it was concluded that a chemical, lindane, when sprayed on stacks of trees, would solve the bug problem. But this entails higher costs of 10-15 cents per tree and some growers, when told they could not add this cost to established contracts, reportedly were reluctant to absorb them. Off hand reports are that, in some areas, up to 40 percent of the crop may not be harvested for this reason. Very roughly, 3½ to 5½ million trees went to market.

Growers expected a wholesale price of $3.00 per tree, with production costs, processing and shipping totaling $2.65 on the average.

Although artificial trees have made inroads into the business in recent year, an increased demand for "balled" Christmas trees that can later be planted is offsetting that problem somewhat.

Michigan again expects to be tops in the country in this crop.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
June 30	1,715	1,270	5	440
July 15	1,580	1,095	25	460
July 31	700	590	30	80
August 15	240	230	-	10
August 31	120	120	-	-
September 15	220	205	-	15
September 30	395	345	5	45
October 15	755	550	-	205
October 31	1,215	930	15	270
November 15	1,255	990	15	250

Peak employment (1,715 workers) in Christmas tree pruning, trimming and spraying was reached in the second half of June. This was a slight increase of 105 or about 6.5 percent. At the height of the harvest, November 1-15, 1,215 workers were needed. As usual, most labor in this activity came from local sources although interstate workers utilized in cultivation increased from 200 to 460. An estimated $800,000 was paid throughout the year.

F. **NURSERY AND SOD:** 14,182 acres were utilized for the nursery industry which includes nurserymen, plant growers, dealers in nursery stock, native tree dealers licensed, raspberry, strawberry, blueberry, dewberry, blackberry, naricssus, tomato, dahlias, and gladiolus growers certified and licensed by the Director of Agriculture. Approximately 4,800 licenses were issued during the 1970-71 season.

This acreage represents a nine percent reduction from the 1969-70 season. There was increased acreage in perennials and non-raspberry bramble plants. Raspberry was equal to the previous season while all others decreased. The most significant decline was in native trees and plants from 5,534 to 4,580 acres (17 percent).

An estimated 170 sod growers harvested 30,000 acres of sod, a sharp increase of 6,000 acres (25 percent) over last year. The demand for sod is dependent on the construction industry which was depressed last year, resulting in a halt of the steady increase in production this industry had realized since 1965.

Prices ranged from 30-33 cents a square yard for first grade sod. Interstate shipments were made to Ohio and Western Pennsylvania. A trend seems to be developing in the use of bluegrass mixtures which adapt better to changing weather conditions, even though they are higher priced.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
April 30	1,965	1,560	-	405
May 15	2,497	1,987	-	510
May 31	2,626	2,081	-	545
June 15	2,504	1,949	-	555
June 30	2,380	1,735	-	645
July 15	2,587	1,957	-	630
July 31	2,534	1,819	-	715
August 15	2,502	1,867	10	625
August 31	2,485	1,735	-	750
September 15	2,380	1,575	-	805
September 30	2,345	1,595	-	750
October 15	1,911	1,371	-	540
October 31	1,658	1,213	-	445
November 15	1,275	995	-	280

This industry utilized from 1,900-2,600 persons from April 30 to October 15, and employed its greatest number of seasonal workers, 2,626, the last two weeks of May. However, 265 fewer persons were employed in that period than in the highest period in 1970. Nearly $1,900,000 were paid in wages to seasonal nursery and sod employees.

G. **PEACHES:** After a 23 percent drop in output last year, production of peaches returned to exceed 1969 by three percent with 100 million pounds being sent to market.

Prices were generally fair with some fruit being abandoned for lack of a market.

Michigan ranked sixth among the 34 major peach growing states.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
August 15	1,565	482	10	1,073
August 31	2,185	790	95	1,300
September 15	2,119	819	100	1,200
September 30	325	212	-	113

Peak harvest activities provided employment for 2,185 persons this year, a slight increase of 140 over the peak in 1970. Roughly $400,000 were paid in seasonal wages.

H. **PEARS**: The pear crop rallied a sharp 50 percent to 24,000 tons, compared with 16,000 tons produced last year. The crop of two years ago yielded 23,000 tons after the record low of 11,000 tons in 1968.

The market was reportedly very poor to fair, depending on the area, with some growers realizing crop losses.

Bartlett is the major type produced in the state, roughly ninety percent of the trees being of this variety.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
August 31	1,155	370	25	760
September 15	878	293	40	545
September 30	375	216	-	159

Peak employment increased 115 in 1971 to 1,155 workers in the August 15-31 period. Wages paid to pick pears amounted to about $90,000.

I. **PICKLING CUCUMBERS (PICKLES)**: For the first time in years, a 25 percent yield loss from 4.48 to 3.38 tons per acre relegated the processed pickle crop second to North Carolina, where the yield increased 22 percent from 2.50 to 3.05. Despite a five percent increase in acreage, the low yield resulted in a twenty percent production decline to 82,700 tons.

The crop was considered poor because of hot, drought conditions in all pickle growing areas.

Mechanical harvesting increased substantially, particularly where "broadcast" type planting was done by machine. Growers have, since the planting method was introduced, been attempting to hand pick these crops several times before the machine pick. The trend now is to eliminate pre-machine hand pickings. Small pickles are lost, however, in that they fall through the harvester. For the time being, gherkins and the like must still be hand picked to make this easier.

The processed pickle crop was valued at about $7,604,000.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
CULTIVATION				
June 30	760	100	-	660
July 15	977	240	-	737
July 31	200	100	-	100
August 15	-	-	-	-
August 31	200	25	-	175

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
HARVEST				
July 15	950	185	-	765
July 31	7,462	1,140	20	6,302
August 15	8,860	1,060	30	7,770
August 31	3,785	625	5	3,155
September 15	400	90	10	300

A substantial drop (31 percent) in the number of pickle cultivation workers resulted from the increase in "broadcast" mechanical planting. 977 workers were necessary in the peak period (July 1 - July 15) as compared to 1,425 in 1970. Also, 360 fewer workers were employed at the peak of the harvest. An estimated $100,000 were paid to cultivating personnel while about $1,700,000 was received by those employed in the harvest.

J. **PLUMS:** As is so often the case, after steadily decreasing from 15,000 tons in 1967 to 10,000 in 1970, an exceptional seventy percent rally of the plum and prune crop to 17,000 tons burdened the market in some areas, resulting in low prices. Many were left on the ground. fresh market and "pick-your-won" by the bushel prices represented in-season bargains for the local consumer.

Michigan is the third leading plum and prune producing state in the country.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
August 31	505	200	25	280
September 15	1,318	473	20	825
September 30	365	222	5	138

Plum and prune harvest activities provided jobs for an estimated 1,318 people in the September 1-15 period, an increase of fifteen percent over the peak period a year previous. The harvest workers earned about $75,000 for their work in the plum orchards.

K. **POTATOES (SUMMER AND FALL):** Production of 8,345,000 hundredweight of Irish potatoes represented a fifteen percent decline from 1970 and was lower to a lesser degree (five percent) from that of two years ago. The reduction was roughly equal in quantity between the late summer crop, which was down 708,000 cwt (31 percent) and the fall crop, which was off 781,000 cwt (ten percent).

As noted in other crops, hot, drought conditions took a greater toll in late summer where the yield was down 29 percent as compared to a twelve percent yield loss in the fall. Late summer acreage was down slightly whereas fall acreage increased a fraction.

The Upper Peninsula fall harvest was slowed by wet fields after a seven day rain but

their crop was good.

The market was reportedly fair to good in most areas.

The state's potato production was eleventh among the forty-four major spud producing states.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
August 15	405	250	-	155
August 31	539	334	-	205
September 15	704	534	-	170
September 30	1,434	1,274	-	160
October 15	1,063	913	-	150
October 31	248	168	-	80

The peak employment of 1,434 workers was 416 less than last year (22 percent) and occurred two weeks earlier. About a third of the hand labor needed for the potato harvest is employed in the Upper Peninsula where soil conditions hamper the use of mechanical harvesters. Approximately $350,000 were paid in seasonal wages.

L. **RASPBERRIES**: Five years ago Michigan produced 4,207,000 pounds of raspberries. After a very sharp decline to 1.2 million pounds in 1968, production rallied to 3,570,000 pounds the next year. Since then production of the disease ridden crop has collapsed to 991,150 pounds.

Red respberry production declined 32 percent to 107,509 pounds of which 7,381 pounds were frozen and 100,128 pounds went to fresh market. Only 883,641 pounds of black respberries were produced, a drop of 44 percent. 710,360 pounds were frozen, 103,537 pounds were canned and 69,744 pounds went to fresh markets.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
July 15	1,235	270	80	885
July 31	150	130	-	20

Harvest workers declined to 1,235 at the peak. Last year it was 1,925, with 3,050 in 1969 and 3,440 the year before that. Wages paid to employees in this crop activity totaled nearly $70,000.

M. **STRAWBERRIES**: The dry spring and summer was most pronounced in the major strawberry growing area, the southwest, affecting most of their agriculture, the strawberry crop being no exception. Cool dryness slowed bud development and hot dryness hastened ripening.

At the Benton Harbor Fruit Market, volume was the lowest since 1954. The southwestern market was reportedly fair to poor. Growers averaged $5.08 per sixteen quart crate, four percent less than in 1970. Costs to produce a crate have reportedly been averaging $5.64, an indication as to cause of the continuing decline in strawberry production.

In the North, $5.50-$6.00 per sixteen quart case was obtained in the fresh market and 16-16½ cents per pound from processors. Upper Peninsula berries, which enjoyed nearly ideal weather conditions, were very good and brought top prices. In the central west and northwest, fields were extensively irrigated, resulting in good

berries and a profitable season in a dry year.

Between the fresh market and processing operations, a 4,400 pound per acre yield resulted in 24,600,000 pounds being produced on 5,600 acres. 15,000,000 of this went to fresh market, the same as last year and 3,400,000 less than two years ago, while 9,600,000 pounds were processed, down 800,000 pounds from 1970 and 5,400,000 pounds below production for processing two years ago.

The yield was up seven percent from 4,100 pounds per acre last year but still down seventeen percent from 1969's 5,300 pounds per acre.

Strawberry acreage was down from 6,200 in 1970, 6,300 two years ago, 6,500 in 1968, 6,800 in 1967, and an average of 7,300 from 1964-66. Reportedly only around 4,400 acres are planned for 1972, 21 percent less than this year.

Michigan is still the nation's third leading strawberry producing state, with this year's crop being valued at about $4,968,000.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
June 15	14,571	1,187	335	13,049
June 30	13,036	2,611	456	9,969
July 15	1,687	1,462	25	200

The number of persons working during the peak employment period of the strawberry harvest was 3,534 less (twenty percent) than during the similar peak period in 1970. As recently as five years ago, 29,000 workers were employed in this activity which ironically has not yet been significantly harvested by machine. An estimated $900,000 were paid to those picking the fruit.

N. **SUGAR BEETS:** Another bumper beet crop was expected this year but the hot, dry summer lowered the yield 25 percent. 1,317,000 tons were harvested as compared to 1970's record 1,913,000 tons, a drop of 31 percent. Acreage was down seven percent from 89,900. All this resulting in considerably less production than anticipated. The heat also delayed harvesting in that beets could not be piled for fear of rotting.

Prices were up $1.50 a ton to $11.00. The crop was valued at about forty million dollars. Of this growers were expected to realize $21 million while processors anticipated about $19 million.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
May 31	800	210	-	590
June 15	1,390	335	20	1,035
June 30	1,155	295	20	840
July 15	765	240	15	510

All seasonal workers reported here are employed in cultivation work, as harvesting is totally mechanized. Also, the use of herbicides, mechanical blocking machines and precision space planting eliminated the need for most hand labor. The peak employment period in 1971 found 555 fewer workers employed (29 percent), as growers continue to find ways to reduce their dependence on hand labor. Those who found jobs in sugar beets earned an estimated total of about $375,000.

O. **TOMATOES:** Processors purchased 6,505,000 tons of tomatoes from Michigan growers this year, an increased yield of 990,000 tons over 1970. Yield was down ten percent from last year's 16.71 tons per acre but was 27 percent higher than 1969. Acreage was up thirty percent or 4,300.

Fresh market production was 473,000 hundredweight for the third consecutive year. Acreage remained fairly stable at 4,300, while yield was up a slight five percent to 110 tons per acre.

This could have been an enormous year had not drought reduced fruit size and caused part of the crop to rot on the vine. The value of the combined fresh market and processing crops was estimated at $7,582,000.

Of the seventeen northern states growing tomatoes for fresh market, Michigan ranked second in production. Five states exceeded our production for processing.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
August 15	1,350	75	-	1,275
August 31	2,705	560	25	2,120
September 15	3,572	777	10	2,785
September 30	990	325	-	665

Workers employed in the tomato harvest increased a little less than eleven percent and these slots were filled by interstate workers, the quantity of whom utilized in this activity increased nineteen percent. Tomato growers paid seasonal workers nearly $590,000 in wages.

P. **VEGETABLE CROPS:** Fresh market; snap beans, cabbage, cantaloups, carrots, cauliflower, celery, sweet corn, cucumbers, green peppers, lettuce, and onions comprise the other major crops in the state and are discussed here as a vegetable group.

Production was somewhat below expectations. The prolonged dry spell resulted in poor soil conditions through most of the growth period resulting in lower yields for all these crops except lettuce and celery.

Lettuce realized an increase of eighteen percent in yield and 27 percent in production, while celery on a slight climb in yield (one percent) jumped twelve percent in production. Lettuce is grown in mucky soil which has a higher water table, a possible explanation for the better success in this crop. Carrot output also was up 6.5 percent on a slightly lower yield.

Fresh market vegetables were in particularly short supply in the metropolitan Detroit area. The rains came in August in the southwest but had little effect on diminished crop growth. Lesser amounts of rain came elsewhere, once again being of little help.

More acreage was harvested in cantaloups, carrots, celery and lettuce and less in snap beans, cauliflower, sweet corn, and onions. Overall, a 1,150 reduction in acreage (three percent) coupled with a four percent loss in yield reduced production seven percent to 6,613,000 hundredweight. Onion production accounted for 26 percent of total vegetable production by weight with carrots at 23 percent and cabbage fourteen percent. Celery at 410 cwt per acre, onions at 270, and carrots at 240 had the highest yields. Greatest loss in yield was in sweet corn and onions, both at thirteen percent. The onion crop was down 23 percent in production followed by sweet corn (-19%) and snap beans (-14%).

The only crop on which statistics were available on the vegetables grown for processing is snap beans. 12,400 acres were harvested, an increase of 2,300 or 23 percent. Yield remained the same at two tons, resulting in 25,050 tons being produced (+20%).

The crops discussed above were valued at approximately $36,783,000, with the carrot crop being worth $10,458,000. This represented an eighteen percent increase over 1970's $30,259,000.

Month & Date	Total Workers Employed	Local	Intrastate	Interstate
May 15	1,183	796	-	387
May 31	1,261	816	10	435
June 15	1,699	999	55	645
June 30	2,035	1,055	67	913
July 15	2,533	1,553	60	920
July 31	2,100	1,210	-	890
August 15	2,750	1,581	-	1,169
August 31	3,645	1,915	-	1,730
September 15	3,335	1,755	-	1,580
September 30	2,830	1,595	-	1,235
October 15	2,165	1,180	-	985
October 31	1,115	640	-	475

During the season, labor needs in vegetable crop planting, cultivating and harvest activities reached their maximum of 3,645 in the second half of August. $1,600,000 were received in wages by persons working in these crops.

VII. AGRICULTURAL LABOR HOUSING

The housing and facility standards promulgated by the Michigan Department of Public Health in accordance with the provisions of Act 289 of the Public Acts of 1965 became identical, on January 1, 1971, with those promulgated by the U.S. Department of Labor. Thus inspection and evaluation of housing for migrant workers engaged in agricultural and related activities was performed largely by representatives of the Michigan Department of Public Health. Rural Manpower representatives only inspected facilities of growers desiring aid in interstate recruitment to assure that any and all deficiencies noted on the last inspection report had been corrected before the order was extended into interstate clearance.

In spite of Act 197 of the Public Acts of 1970, which provided for matching funds of up to fifty percent or $5,000, whichever was the lesser, to growers for improving housing facilities for migrant workers, the number of licensed camps and facilities, in Michigan, continued to decline. In 1968 there were about 2,500 camps with a total capacity of about 90,000 occupants. In 1971 this was reduced to 1,330 licensed camps for a total capacity of 37,541 occupants or a reduction of about 58 percent in total capacity.

The Health department had made 1,397 initial inspections and 2,258 reinspections. 3,504 rule violations were noted on the initial inspections for an average of 2.63 rule violations per camp. This was a decline from 1970 which revealed an average of 3.56 rule violations per camp inspection, and shows continued improvement in the camps. Rural Manpower representatives made about 105 inspections to verify correction of deficiencies noted on the latest inspection report.

Denials of licenses after inspection totaled 207. Inspection reports from these camps revealed 6.1 violations per camp. Injunctions against operators of unlicensed camps were sought against 22 camp operators.

The minimum housing standards promulgated by the U.S. Department of Labor in 1971 in compliance with the provisions of the Williams-Steiger occupational Safety and Health Act are already creating difficulties as to opinionated interpretation for compliance. Of the 103 standards contained in 20 CFR 620 and the rules and regulations of the Michigan Department of Public Health, 27 are not included in the new OSHA standards, and it appears that fifty of the OSHA standards are more stringent than the 20 CFR 620 standards. Yet, both sets of minimum standards were promulgated by the U.S. Department of Labor. Further, the Michigan rules and regulations cover camps for five or more workers and the Federal regulations cover facilities for one or more workers. Many concerned persons feel that these apparent conflicts are bound to have a decided adverse effect towards camp improvements registered during the past several years unless some form of uniformity is again established and can be interpreted uniformly.

VIII. EMPLOYMENT & OPERATIONS

The increasing use of mechanical and technological innovations was the most significant single factor affecting the employment of seasonal farm workers this year. Strawberries and apples constitute the only major crops in Michigan that are yet to be mechanized. Decreases in the number of workers in cherries, sugar beets, pickling cucumbers, grapes, and potatoes can be definitely attributed to mechanization.

This year, as in the past, adverse weather conditions contributed to the fluctuation in the labor market. Cold weather, prior to and during the harvest, drastically affected the use of sleds in asparagus and resulted in an approximate 90 percent increase in the labor employed in that crop. An increase in tomato acreage also resulted in an eleven percent increase in the number of workers needed to harvest that crop.

Several crops employed more workers during 1971 compared to 1970, albeit, they comprise only a small percentage of the total labor force and did not drastically affect the peak or the overall labor force. Ideal weather for plums and the resulting bumper crop required fifteen percent more workers for harvest, although the depressed market price resulted in abandonment of a large quantity of the fruit.

Decrease in the number of workers due to adverse weather and/or mechanization ranged from five percent to 41 percent. A 41 percent drop in the number of seasonal workers in cherries was directly related to the increase in mechanization to its present level of 75 percent. The use of technological innovations and mechanization in sugar beet cultivation and in the grape harvest resulted in a 29 percent and 46 percent decrease in the labor needed for those crops. Hot, drought conditions combined with increased use of mechanical and technological expertise reduced the labor needed to cultivate pickle fields by approximately 31 percent. Competition from California and Mexico in

addition to increasing labor difficulties and low market prices were responsible for the reduction in strawberry acreage and harvest employment.

Labor, housing, and weather were not as disorganized or problematical during 1971 as they were last year, although some problems were encountered in each of these areas. Significant labor surplus did not develop during 1971. Some under-employment and unemployment did occur prior to harvest time in some crops, but of lesser magnitude than in 1970. Michigan Department of Social Service, however, reported that 25,693 food stamp and commodities vouchers were issued to migrant households during 1971.

A discussion of seasonal farm labor, migrant labor, or farm employment in general must be integrated with a discussion of the agriculture industry as a whole from planting to consumption. Analysis of any one segment, separately, would lead to distortion of the conclusions as to causation and solutions.

Reports of high cost of operations, high interest, exhaustion of credit, unfavorable market structure, the persistent cost-price squeeze and the resulting reduction in farm net income have placed Michigan farmers in an acute situation. The majority of the farmers attempted to resolve the situation by increasing the efficiency of their farms by mechanizing their operations. This is evidenced by the dramatic increase in mechanization during the past few years. In order to reduce the cost of mechanization per unit of production, thus increasing the efficiency of farm operations and management, some farmers purchased additional land whenever possible. A large number of farmers formed family type corporations or partnerships, while others formed marketing and mechanical equipment (namely harvester) cooperatives. If the decline in the net income persists, these farmers will be forced to incorporate, on a much larger scale, all farming operations, This development will ultimately lead to an increase in the cost of agricultural products to the consumer.

Parallel developments are occurring in dairy farming. In the future, dairy farms will tend to be larger and fewer. The average herd size will double its's present size to 60-75 cows per herd. More farmers will form cooperatives to handle the distribution and processing of their farm products.

Since 1965, the number of farms in Michigan has decreased by 13.3 percent, from 98,000 to 85,000. During the same period the average size per farm has increased from 144 acres in 1965 to 153 acres in 1971, a 6.2 percent increase. Total acreage, however, decreased 7.2 percent from 14,100,000 acres to 13,000,000 acres. In 1971, the total land in farms was 100,000 less than in 1970, while the number of farms decreased by 1,000.

The above developments have adversely affected the employment opportunities for seasonal agricultural workers who look to this type of employment for supplemental income. The use of mechanical harvesters and technological developments has greatly reduced the need for migratory seasonal labor, especially during the last three years. The employment of migratory workers at peak in 1971 was fifty percent of the 1969 peak.

The majority of migratory workers in Michigan are of Mexican-American descent. Recent developments in Michigan's agriculture have developed new problems for them. Lack of education and educational opportunities complicated by a lack of skill in the English language thwarts the efforts of those migrants who attempt to leave the migrant stream. Cultural mores and structure, and lack of non-agricultural skills provide further complications. Lack of funds to acquire proper housing, a depressed job market, and an unfavorable stero-type image among the general population are also some of the obstacles which the migrant must overcome to make his transition out of the migrant

stream successful.

The total number of workers estimated to have been seasonally employed at one or more times during 1970 in the cultivation and harvest of Michigan crops was 71,900 - down 28 percent from 1970. Approximately 30,400 workers were from local sources, a 29 percent decline, while intrastate sources supplied 6,900 workers, a fourteen percent drop. The number of workers from interstate sources declined 29 percent, from 48,800 in 1970 to 34,600 workers in 1971.

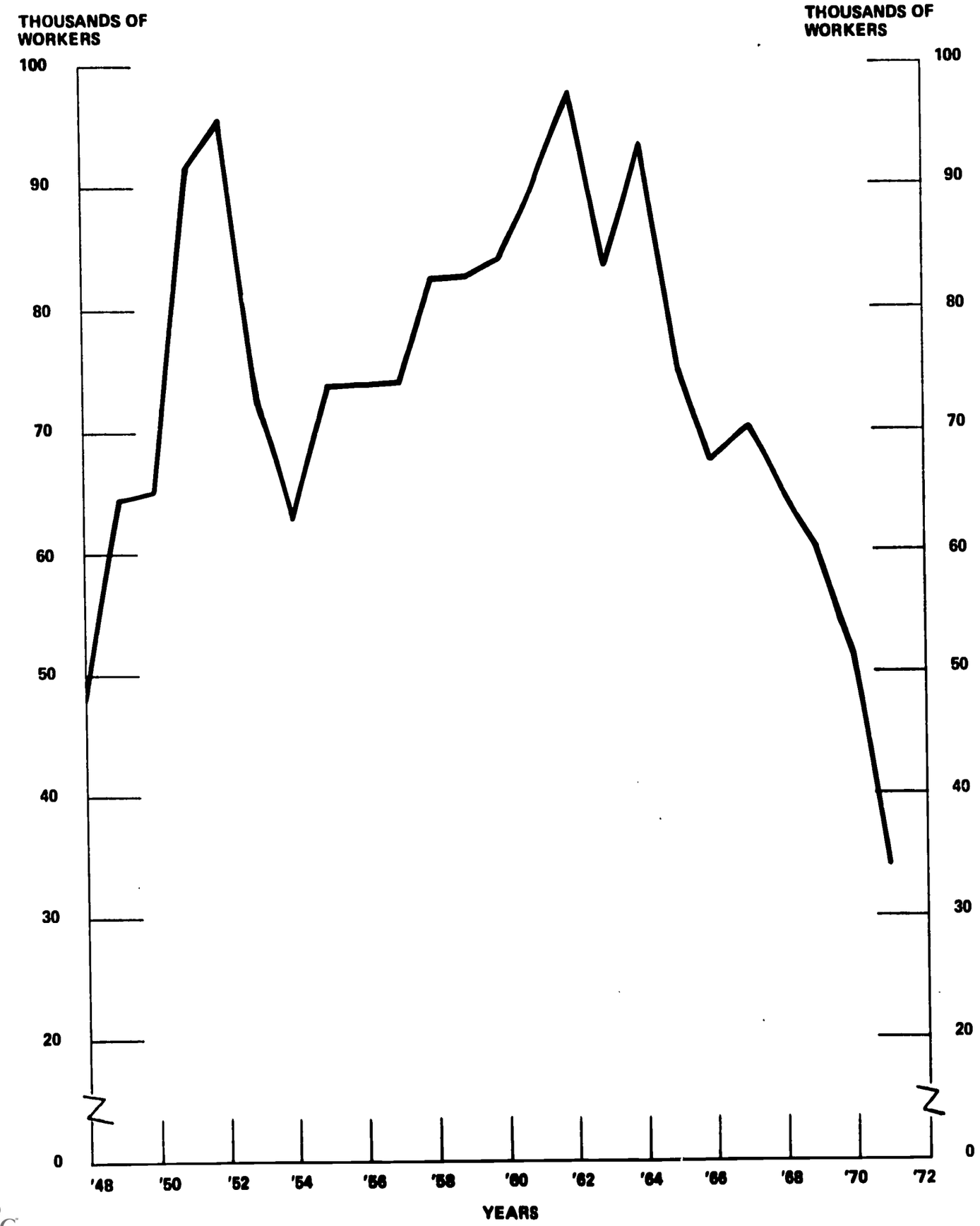
The employment of seasonal agricultural workers in Michigan during 1971 reached its peak towards the end of July with approximately 33,280 reported to have been employed. This represents a 35 percent drop from the 1970 peak, which occurred during the same period. The peak employment of local workers occurred during the middle of July with 14,272 workers employed, a decline of 20 percent from the previous year's peak. The period of greatest employment of intrastate workers occurred during the middle of July with 1,890 workers, fourteen percent less than the 1970 peak of 2,195 workers. The interstate workers peak of 33,280 workers showed the greatest decline with a forty percent drop. The employment of seasonal agricultural workers in Michigan is expected to continue to decline, although at a slightly lower rate than during the last three years.

SEASONAL AGRICULTURAL EMPLOYMENT DURING 1971 1/

Date	Total Workers	Local Workers	Intrastate Workers	Interstate Workers
April 15	3,410	3,055	25	330
April 30	8,070	7,080	27	963
May 15	13,682	9,901	47	3,734
May 31	14,508	9,953	35	4,520
June 15	28,596	10,205	457	17,934
June 30	26,947	11,765	608	14,574
July 15	31,619	14,272	1,890	15,457
July 31	33,280	12,880	725	19,675
August 15	27,417	11,603	65	15,749
August 31	25,654	12,409	260	12,985
September 15	21,981	10,986	345	10,650
September 30	21,594	11,769	155	9,670
October 15	21,739	12,044	175	9,520
October 31	16,676	9,506	115	7,055
November 15	6,174	4,589	15	1,570

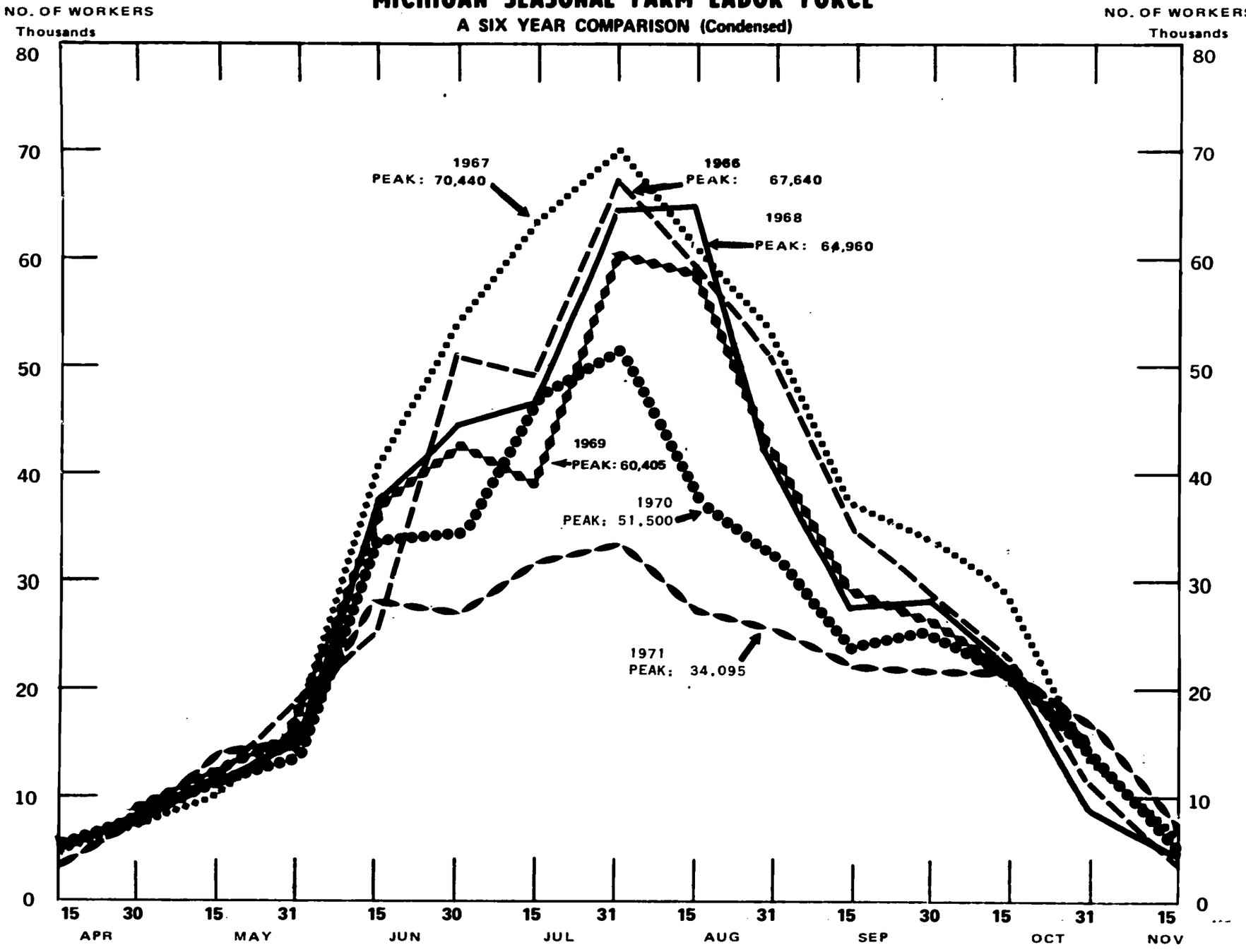
1/ Seasonal employment figures are estimated for the last normal work day preceding the reporting date. Estimates are calculated for the period of greatest seasonal employment only (April 15th to November 15th). Peak employment occurred near July 31, when approximately 33,280 workers (Age 10-up) were employed in seasonal activities.

MICHIGAN SEASONAL FARM LABOR FORCE AT PEAK



MICHIGAN SEASONAL FARM LABOR FORCE

A SIX YEAR COMPARISON (Condensed)



IX. MECHANICAL & TECHNOLOGICAL DEVELOPMENTS

A. APPLE HARVEST MECHANIZATION

Apples have staunchly resisted the wave of new machines that have invaded orchards and fields at harvest time the past few years. Easily bruised, picking them by hand has remained a necessity.

Progress is being made by the machines, however. A division of a major milk company has developed a new type of harvester that shakes the limbs with a vertical motion, thus removing the fruit with reduced bruising. The self propelled machine is operated by three men. The shaker driver on the left side operates a telescoping boom that can be raised, lowered, or swung from side to side and has a head which can be rotated. These operations are controlled by a single lever. Another lever telescopes the boom into the tree where the head is clamped to the limb at a right angle to the limb axis.

The apples first go into a spur and leaf eliminator and are then transported on an elevator to the bin filler. The catching frame has decelerator strips to prevent falling apples from colliding as they roll down the conveyor. Over this middle operation is a quality control man who also can advance, raise, and lower the bins. The third man operates the right half of the machine. During the past season, the harvester was tested at Biglerville, Pa. where, reportedly, twelve to fifteen trees were harvested per hour. In other developments, a Michigan grower utilized a gould boom attached to a tractor, a catching frame, and a conveyor-elevator to harvest approximately 15,000 bushels of Jonathans with the help of one man.

B. GRAPE MECHANIZATION

Each year spring frosts have taken a heavy toll of Michigan grapes. A Michigan firm is manufacturing and selling a permanent type, central gas (propane or natural) heaters for frost protection in grape orchards. The gas manifold is buried in the vineyard and the lines are buried along the rows with permanent heater risers. Each season only the burner and radiator shell are set up. Thus, little labor is required to set up and operate the system. The vineyards can be worked with the heaters in place under the trellis and there are no refueling problems. The same lines can be used for trickle irrigation and there is no open fire to burn the vines. The system is adaptable to orchards.

Four years ago the grape crop was picked entirely by hand. It is estimated that, in 1971, eighty percent of it was harvested by machines owned by processors, growers and partnerships. The process seems nearly complete, one grower commenting that, "although we'll continue to look for new innovations to cut costs and speed up the operation while maintaining quality, the entire operation is down pat after three years of working with the harvesters." One such innovation is a new and efficient way of moving mechanically harvested grapes from the vineyards to wineries and juice processors. As the harvester slaps off the grapes, a tote-lift is pulled by a tractor in the next row. Conveyor belts carry the grapes into a tote-lift tank, which is double the size of a standard cherry tank. When full, the tote-lift tank is pulled to a dump truck which holds eight to ten tons of grapes. When the truck, a regular flat bed with a huge cherry soaking tank on its bed, is full, it's off to the processor where the tank truck is hydraulically tilted, dumping the grapes into a receiving hopper. Processor officials said they have been emptying a truck in eight to ten minutes, thereby handling an average of 25 tons of grapes hourly.

Two Berrien county growers built their own harvester at one-tenth the cost of a commercial machine. The machine was built mostly from homemade and spare parts and works on a principle similar to two popular commercial machines. In addition to harvesting twenty acres of grapes the harvester was used, with excellent results, on fifteen acres of raspberries (blackcaps). The basic frame of the machine is a straddle carrier revamped with two tractor tires to provide better traction. The paddles were made of hickory and the "fish scales" which catch the grapes were made of steel. A series of conveyor belts and small buckets transport the grapes up and over the machine into tanks which are pulled along side in the next row by a tractor.

C. NEW METHOD OF PEACH PRUNING

Two peach growers in Baroda, Mi., continued a bold new approach in peach orchard pruning, by giving the trees a severe butch cut about seven to eight feet above the ground, approximately two to three weeks before harvest time. The primary purpose of the severe summer hedging was to eliminate the need to use picking ladders at harvest time, resulting in an accelerated picking pace and reduced cost. Removing the canopy of new growth also allowed more sunlight resulting in improved color and quality. They also found three problems associated with their method. Once a grower switches to this type of pruning, he must continue to do so every year, because of the dense growth of new shoots. Some peaches were lost when the new growth was cut. Also, the summer hedging does not appear to be practical for the older trees.

D. TOTAL TREE HARVEST

A new method (total tree harvest) has been developed for forests that contain a low volume per acre of quality timber. It entails the harvesting of every tree in a large area within a forest, and the utilization of the entire tree, including the branches, through a chipping process. From a forest product standpoint, this method leads to a substantial increase in the available wood supply, through the utilization of wood that normally would have gone unwanted by the industry. Professional foresters and wildlife biologists support this method, since it sets the stage for immediate forest regeneration and the new growth so necessary to the development of productive deer and grouse habitats. In one demonstration chipped trees were delivered to the mill at the rate of over forty tons per hour. The yield, from the total tree utilization was 84 tons per acre, more than twice the yield of forty tons per acre using the standard method. The process revolves around three mechanized operations. A huge Feller-Buncher machine grips several trees in huge iron claws, while big blades shear the trunks at ground level and pile them up. A Grapple-Skidder machine uses grapple hooks to deliver a bunch of the trees to the Chipper machine. There, the whole trees are ground up and blown into a waiting truck to be hauled to a wood products mill. The chips are then put through a shaker screen which eliminates most of the undesirable material.

E. ZERO TILLAGE

An agricultural expert predicted that herbicide combinations, a stale seedbed technique, and zero tillage will revolutionize horticultural crop control.

Mixing two or more herbicides together for simultaneous application controls a wide range of weeds at a lower herbicide rate than separate applications.

The stale seedbed technique can give 100 percent control of early weeds with only one application. This technique lets the field lie ten to fourteen days after seedbed preparation. At the end of the fallow period, a contact herbicide kills all the weeds.

Then the crop is planted.

Current tillage practices often injure the crop and allow weeds to compete. Zero tillage eliminates crop injury and often provides better weed control than present tillage practices.

The weed control techniques must be adopted to each crop and each individual weed problem.

F. ASPARAGUS RESEARCH PROJECTS

The recent acceptability of sled harvesting of asparagus has resulted in several problems related to the production and handling of asparagus. Several research projects have been initiated to develop solutions to these problems.

In one such project a machine with two electric eyes, one at the three inch level and the other at the at the ten inch level, was used to determine the right time to sled a particular field. Data on yield, grade, and size distribution was collected and used in comparing yields from hand-harvest and sled-harvest. Another study made detailed records of growth rates of individual spears and size distribution at harvest. Data on temperature, rainfall, soil moisture, humidity, and fiber content was also collected. Other projects evaluated: the use of herbicides in established fields as well as direct seeded asparagus; asparagus breeding, selection, direct seeding and close spacing; and post harvest quality as related to post harvest handling conditions on fiber content and processed quality. However, the results of these studies have not been determined as of this date.

G. BEET-BEAN RESEARCH

The Saginaw Valley Bean and Beet Research Farm, a long sought goal of bean and sugar beet producers and processors, became a reality this year. Research and variety testing of beans, sugar beets, and related cash crops will be conducted on its 120 acres. The new unified research program will enable research expenditures to go twice as far. Agronomic practices will be tested to find methods which will yield the highest production and quality per acre for growers of both crops. Approximately 3,300 sugar beet farmers and between 11,000 to 12,000 bean growers in the Saginaw Valley thumb area are expected to benefit directly from the new research farm. It is hoped that the new methods developed by the farm will offset their constantly rising expenses and keep production costs at a more competitive level.

H. YEAR-ROUND BEAN EXPORT

Michigan bean exportation has always halted in December when the St. Lawrence seaway closed for the winter. A year long shipping experiment was conducted in 1970 in which four shipments of beans left Saginaw for England in mid-winter under deliberately contrived difficult conditions. The beans were bagged in four hundred 100 lb. bags and shipped in a bunch by rail to the Atlantic coast. The experiment was successful and will be repeated this winter, except this time the beans will be shipped in bulk thus eliminating the cost of bagging and completely mechanizing the loading process. The Michigan Bean Shippers Association is so optimistic about the possibility for additional exports through the new shipping methods that a new International Trade Mission was set up to visit England, the Netherlands, Belgium and France. The trip is to explain the two years' experiment, to outline their research programs and acquaint canners and processors with American-made processed bean products, including oven beans, pork and beans, home

style beans, beans and franks, barbecue beans, vegetarian style beans, red kidney beans, beans with molasses, deep brown beans, bean dip, and other bean products.

X. PUBLIC AND HUMAN RELATIONS

A. MICHIGAN'S LAST WATER-POWERED GRIST MILL

While the operator talks the water drops into the turbine that starts the machinery in motion. The mill quivers as the wheels gain speed and settle down to their work, grinding grain.

A year older than the state, this mill is the last water-powered grist mill in Michigan. Visitors are always welcome at the 135 year-old heir-loom business where the 79 year-old operator turns out fresh wheat flour, graham flour, buckwheat flour and all types of animal and bird feed for local farmers and residents. He talks like a man half his age and has a host of mid-eighteenth century items to show. There is a story to go with each of the antiques on display. There is the tomahawk a soldier carried through the Mexican War, or the belt made especially to carry gold nuggets that survived the Alaskan gold rush, or the andirons that look like wood and are one of three sets ever produced.

The mill was bought in 1937. It was run-down, dirty, unkempt and impossible to operate. At that time there were two other mills operating in the area, both of which are gone today. The new owner seemed to have a fascination for mills. He had tried operating other ones on electricity in Mt. Clemens and Fenton but the electric bills were prohibitive, so he went to work to get the water power back, running this mill. By the time he got it in shape in the mid 40's he owed $46,000 and couldn't borrow any more. Increased business and low overhead permitted him to liquidate his debt in twenty years.

Father and son consider the mill a success since they don't owe anyone a cent, and have a market for their product. The father's main activities now are showing the mill to visitors while his son does a lot of the actual management and operation. Visitors come from every state in the union and around the world. They sign their names in a ledger like one might have seen a century ago. He's very happy to show and explain the tools that were in use when America was forming.

B. NEW VOCATIONAL CENTER

The Joseph G. Barr Vocational Center at Buena Vista High School in the Saginaw area was dedicated early in 1971. It features an automotive repair shop; and a machine shop, which has 9,028 square feet of space and a twnety-five student classroom. The building was equipped with the latest environmental control systems. A 480-volt machine power system was installed to accommodate the power requirements required by future machine designs. The auto shop can accommodate fourteen cars and feature two air operated hoists and a complete underground exhaust system. It should prove to be very useful in making vocational training available to rural residents in the surrounding area.

C. SUGAR FESTIVAL

The Seventh Annual Michigan Sugar Festival was held in Sebewaing from July 9-11. It featured a sidewalk sales and a flea market. A seventy unit parade, featuring Michigan Sugar Queen and her court, was followed by a chicken barbeque in the

village park. A free floor show, featuring the "Contemporaries", a singing group, was also presented. At various times during the three day festival, free performances were given by a precision drum and trumpet drill team, a magician, a juggler and a band.

D. SUMMER SCHOOL FOR MIGRANT CHILDREN

Federal funds were used to finance two educational centers for migrants in the Bay City area. The centers were staffed by fifty-nine professionals, including 13 teachers, 24 aides, 2 nurses, a diagnostician, a recruiter-counselor, and an arts-crafts-recreation supervisor. The health program included inoculations and flouride treatment as well as a night clinic at the General Hospital, one day a week. Between the hours of 8 A.M. and 6 P.M., the children received breakfast, lunch, dinner and snacks, which were prepared by two shifts of cooks. Films, tapes, and other audio-visual equipment were used to teach spelling, reading, honics, speaking, listening, science, social studies, and Mexican history. Recreation, arts, and crafts classes were also included in the curriculum.

E. YOUTH CONSERVATION CORPS

A program to employ youth, during the summer months, in national forests was approved by Congress for 1971. The program was designed to stimulate youth's interest in conservation and natural resources. According to the U.S. Forest Service, the new program's objectives are to provide environmental training and summer employment to youngsters of all social and economic backgrounds in addition to improving the quality of public lands and waterways. Thirty youths were assigned to the Ottawa National Forest area, They were housed at Camp Filibert Roth, a 210 acre site operated by the University of Michigan on Golden Lake. They earned $37.50 a week, helping U.S. forest rangers improve campgrounds and other outdoor recreation facilities. Camp Roth is one of two sites for the YCC program. The other YCC camp, Iroquois Lodge, is located in the Hiawatha National Forest in Chippewa County.