

1-1-1930

Adjusting agricultural production and distribution in the Wheeling area to meet home market demands

W. W. Armentrout

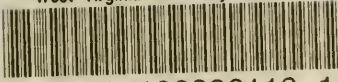
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West Virginia Agricultural and Forestry Experiment Station Bulletins. 228.
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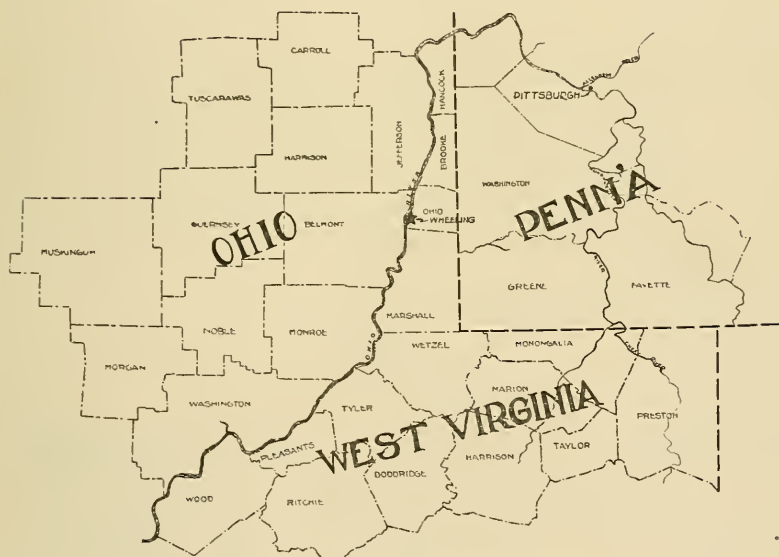
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Adjusting Agricultural Production and Distribution in the Wheeling Area to Meet Home Market Demands

by W. W. ARMENTROUT



Extent of the Wheeling Area

**AGRICULTURAL EXPERIMENT STATION
 COLLEGE OF AGRICULTURE, WEST VIRGINIA UNIVERSITY
 F. D. FROMME, Director
 MORGANTOWN**



1



2



3



4



5

1. Waiting for the milk truck. Good roads made this possible.
2. Freight boats, plying the Ohio River, serve Wheeling.
3. Fine-wool sheep abound in this section.
4. A greenhouse adds value to small truck farms producing vegetables for the Wheeling market.
5. There are several commercial poultry flocks in the Wheeling area.

*Adjusting Agricultural Production and Distribution to Meet Home Market Demands in the Wheeling Area**

by W. W. ARMENTROUT

THIS report is the fourth of a series of studies of consumption of farm products in the larger cities of West Virginia and of production in the agricultural sections surrounding them.¹

It is the report of a study of receipts of food commodities in Wheeling for a twelve-months' period beginning June 1, 1925, and ending May 31, 1926. Because of the geographical location of Wheeling, with very little of its agricultural section lying within the borders of West Virginia, no detailed study was made of nearby farm production. While Ohio County, in which Wheeling is situated, contributes considerably to the food supply of the city, it is apparent to any one familiar with the section that a large part of the locally produced commodities which reach the market come from the neighboring states of Ohio and Pennsylvania.²

The study was limited to obtaining (1) a record of the quantity of certain food commodities which passed through the Wheeling market, exclusive of locally produced goods transported over highways; (2) the section of the country from which the commodities came; and (3) the transportation charges.

*Submitted for publication August, 1927.

¹Studies of the Charleston, Clarksburg, and Beckley areas are reported in W. Va. Agr. Exp. Sta. Bulletins 188, 212, and 226, respectively.

²No satisfactory plans were formulated with Ohio and Pennsylvania for a co-operative study. It seemed probable that data on local production such as could be obtained in the limited Wheeling area confined to West Virginia might prove misleading.

The quantity of various commodities coming on the market indicated a demand which was not satisfied by local production. A record of the section of country from which the commodities came will enable local producers to locate their competitors and provide a basis for studying their production costs. The transportation charges show the advantage which nearness to market affords local producers over their competitors.

This study is limited in character. While a knowledge of market demand in terms of quantity is one important guide to production, the producer should also know the market demand in terms of variety and quality of product, as well as his own cost of production in comparison with that of his competitors. There is, therefore, need that this study be continued to cover the market demands in terms of variety, quality, grade and pack, and production costs.

PURPOSE OF THE STUDY

The purpose of this and similar studies has been stated in Bulletins 188 and 212. Shifts in population and changes in production in competing sections are among the factors which make adjustments in farm production desirable from time to time if the greatest returns are to be obtained. While industry faces the need for continual changes, the size of the unit makes changes easier than in agriculture. The chief aim of the present report is to present information not readily obtainable by the individual farmer which may help farmers in West Virginia to adjust their production to meet changing conditions.

SOURCES OF DATA

The data on freight receipts were taken from the station records of the Wheeling stations of the Baltimore and Ohio Railroad, the Pennsylvania Railroad, and the Wheeling and Lake Erie Railway. Records of express receipts were obtained from the division accounting offices of the American Railway Express Company, located in Pittsburgh. Records of receipts by boat were obtained from freight records on the "Senator Cordill" and the "Helen E" freighters.³

The method used in this study and the source of the data make it possible to present accurately the section of country from which commodities came, the quantity of receipts, and the carrying charges.

³A complete record of receipts for all boats serving the Wheeling market was not available.

AGRICULTURE OF THE WHEELING AREA

Wheeling with its suburbs covers a large part of Ohio County. In recent years there has been extensive suburban development; people of means have built homes, some of them estates, out in the open country. This movement has resulted in increased land values. Consequently, under the present system of farming, values placed on the land are out of all proportion to its earning capacity as farm land. Some land has changed hands at these high prices, while much of the remaining farm land has assumed suburban values and is held and taxed accordingly. Under such conditions it is discouraging to attempt to show adequate earning powers for the land when used for agricultural purposes.



Most of the farm land in Ohio County is rolling or hilly.

There is a considerable acreage of fertile land in Ohio County well adapted for agricultural purposes. If the owner has not paid suburban prices for it and is willing to discount its paper value to the level of agricultural land value, he should be able to realize at least average returns from it.

The greater part of the land in Ohio County is hilly to rolling, but much of it has a good deep soil. Three or four sections of creek bottom in the county are well adapted to truck farming. Good farming sections are also found to the north in Brooke County and to the south in Marshall and Wetzel Counties, West Virginia. Across the Ohio River in Ohio lies a splendid farming section with a network of hard-surfaced highways which make the Wheeling market readily accessible.

Dairy farming ranks first in importance in Ohio County. In recent years it has shown rapid development in neighboring West Virginia counties as well as across the Ohio River. There is considerable truck farming in the region but indications are that such farming has lost rather than gained in favor, probably because much of the good truck land near Wheeling has been taken over for factory sites and for summer camps.

There are several specialized poultry farms, and the farm flock is an important source of income to a majority of the farmers. There are a number of commercial orchards in Brooke County and also across the river in Ohio. Sheep grazing holds considerable importance in the area, but it contributes little to the food supply, since the fine-wool breeds predominate.

RAILWAYS, HIGHWAYS, AND POPULATION

Wheeling is served by three railroads—the Baltimore and Ohio Railroad, the Pennsylvania Railroad, and the Wheeling and Lake Erie Railway. Boats ply the Ohio and Kanawha Rivers from Pittsburgh to Charleston, West Virginia, and the Ohio River to Cincinnati, and two or three small freight boats make shorter runs down the Ohio River from Wheeling.

The city is served by a highway system which reaches far out into the agricultural sections and makes it possible for producers, though miles away, easily to market their products by truck.

The population of Wheeling is about 56,000. Its wholesale groceries serve a population of approximately 360,000.⁴

RECEIPTS OF FOOD COMMODITIES IN WHEELING

The commodities included in this study are potatoes, cabbage, onions, lettuce, tomatoes, beans, corn, melons, miscellaneous vegetables, apples, peaches, grapes, poultry, eggs, milk (condensed), butter, cheese, hay, grain and mill feeds, cattle, and hogs.

Each of these commodities was being produced in some quantity in the agricultural area surrounding Wheeling, the area being more or less suited to such production in so far as physical adaptations are concerned.

These data do not show the full market demands, since the locally produced commodities which reached the market were not considered.

⁴*Atlas of Wholesale Grocery Territories*, U. S. Department of Commerce, 1927.

On the other hand, not all the commodities shown as received in Wheeling were consumed there, but were consumed within Wheeling's trade area. This circumstance, however, does not affect the significance of these data as a measure of the market demand.

Potatoes

Table 1 shows the receipts of potatoes in Wheeling by freight and by boat for the twelve-months' period beginning June 1, 1925, and ending May 31, 1926.

The receipts totalled 18,962,991 pounds or 316,046 bushels. Of this quantity 266,688 pounds, or 4,445 bushels came from points in West Virginia. This is about 1.4 percent of the total.

West Virginia supplied 8 percent of the potatoes received in Clarksburg during the preceding twelve-months' period.⁵ There was no noticeable shortage in yield of potatoes during the later period.

During the four-months' period, August, September, October and November, over which most of the West Virginia potatoes are marketed, Wheeling received 7,135,861 pounds, 3.7 percent of which was shipped from points in West Virginia. During this same period of the previous year West Virginia supplied approximately 20 percent of the potatoes received in Clarksburg.⁶

Carrying charges on potatoes amounted to \$94,615.45, or an average of 50c per cwt. The average carrying charges on potatoes received from West Virginia were 28c per cwt. This gives West Virginia producers a margin of 22c in transportation costs over their competitors, or practically the same advantage found for West Virginia producers on the Clarksburg market.⁷

No new data on cost of production or prices of potatoes have been collected by this Station since the publication of the Clarksburg study. The data on cost of production and prices as presented in West Virginia Agricultural Experiment Station Bulletin 212, pages 17-26, are applicable to the Wheeling area.

West Virginia producers have scarcely touched the potato market of Wheeling. From previous studies as well as several known cases of profitable potato production, there appears to be ample justification for promoting potato production in sections of the state where physical conditions are adapted to their culture.

⁵W. Va. Agr. Exp. Sta. Bul. 212, p. 11.

⁶W. Va. Agr. Exp. Sta. Bul. 212, p. 15.

⁷W. Va. Agr. Exp. Sta. Bul. 212, p. 17.

TABLE 1.—Receipts of Potatoes in Wheeling by Freight and Boat: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Method of Transportation, and Origin of Shipment by Freight	1925											
	Total		June		July		August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	18962991	\$9461E.45	2442276	\$11725.58	1723408	\$7306.81	1696484	\$7704.40	1371310	\$6605.36	2727680	\$12310.40
FREIGHT:												
Virginia	2934045	12184.23	1056040	4437.79	1526380	6260.32	259555	1051.20	62040	294.78	30030	139.64
Massachusetts	165000	1282.40	132000	1062.95	33000	219.45	94500	504.00				
North Carolina	251185	1375.65	156685	871.65					137410	831.31	120635	718.82
Maine	665795	4109.62	31550	556.26	107250	619.17	30000	102.00	150000	526.50	584500	2161.68
Michigan	1882470	6935.93	89600	343.58								
Georgia	30000	211.50	30000	211.50								
Alabama	174440	1255.97	24400	175.68								
South Carolina	591915	3363.49	594945	3363.49								
New York	875626	2588.63	209156	575.18			64700	192.64	120150	884.46	18896	42.36
West Virginia	266683	758.50	57900	127.50			932400	4567.05	744100	3972.74	1056840	6059.69
Minnesota	6407390	36906.44			30000	144.00					182828	598.65
Pittsburgh*	562221	1433.03			2718	10.74					30000	186.00
Chicago*	168000	942.40					30000	178.80				
New Jersey	133364	422.24					61004	228.24			466	1.71
Maryland	183391	621.08					180165	607.27				
Mississippi	30000	153.00					30000	153.00				
Iowa	30900	172.50							30000	172.50		
Indiana	239100	1426.82									73050	362.64
Pennsylvania	223100	658.22									114740	322.30
Ohio	307372	752.24									205855	530.29
North Dakota	804040	5477.36									72000	456.80
Wisconsin	1635920	7954.58									30000	133.50
Idaho	30280	100.97										
Texas	128474	1949.32										
Florida	146365	1191.57										
BOAT	42180	87.71			24660	52.62	14160	25.20	3360	6.38		

*Wholesale market.

Method of Transportation	November		December		January		February		March		April		May	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	1340387	\$5873.07	1061282	\$5401.21	1313110	\$6744.04	1077070	\$6090.39	1926095	\$10928.21	829694	\$5022.75	1454195	\$8298.23
FRT.:														
Va.														
Mass.														
N. Car.														
Me.	2250	252.75					90600	493.81	40000	336.50	36000	301.00		
Mich.	391650	1501.24	273000	945.75	117000	388.95	80100	267.15			99120	418.20	67500	281.78
Ga.														
Ala.														
S. Car.														
N. Y.	44800	132.20	72860	259.05	216720	608.64							150040	1030.29
W. Va.	5042	11.54												
Minn.	360060	2157.90	252000	1544.00	540000	3337.00	543000	3465.45	1142000	6864.00	176800	1317.72	630250	3576.89
Pgh.*	264740	641.90												
Chgo.*	36000	244.50			36000	241.40			36000	91.40			43800	28.47
N. J.			72350	193.00										
Md.	3360	12.10												
Miss.														
Ia.														
Ind.	36000	157.10			73050	325.93							36900	282.60
Penn.			72180	223.76			36180	112.16						
Ohio	40395	139.80	122	.30			25000	68.75					36000	13.10
N. D.			180480	1278.98	109560	763.48	78600	552.90	76000	514.00	252000	1682.00	36000	223.20
Wis.	116050	626.74	108000	549.40	220780	1073.54	223590	1126.67	616000	3081.00	72000	356.40	239500	1007.33
Ia.			30280	400.97										
Tex.														
Fla.														
BOAT:							600	3.50						

*Wholesale market.

TABLE 2.—Receipts of Onions in Wheeling by Freight: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Origin of Shipment	1925											
	Total		June		July		August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	2166811	\$10125.01	141368	\$1382.98	184180	\$ 617.35	206425	\$ 645.01	260150	\$ 734.17	210487	\$ 658.50
Pittsburgh*	484187	1242.15	46950	119.59	99575	253.98	57600	146.88	68600	174.93	30181	77.00
New York	280585	990.00	2890	12.11	11505	49.07	74760	301.10	71560	235.35	---	---
Ohio	445071	1209.95	---	---	---	---	49125	105.78	68390	167.05	25706	74.53
Massachusetts	86488	932.78	61488	841.53	---	---	25000	91.25	---	---	---	---
California	60489	366.37	30240	409.75	---	---	---	---	---	---	---	---
Illinois	73109	314.30	---	---	73100	314.30	---	---	51600	156.84	154600	503.97
Indiana	419300	1360.17	---	---	---	---	---	---	---	---	---	---
Michigan	77909	268.06	---	---	---	---	---	---	---	---	---	---
Wisconsin	25000	107.50	---	---	---	---	---	---	---	---	---	---
Texas	214700	2833.73	---	---	---	---	---	---	---	---	---	---

Origin of Shipment	1926													
	November		December		January		February		March		April		May	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	423150	\$1324.84	43643	\$ 128.91	106058	\$ 315.50	210560	\$ 628.97	133850	\$ 393.33	63316	\$ 833.53	183624	\$2461.92
Pgh.*	34250	87.21	18578	48.70	55393	142.79	58510	157.87	11950	28.10	2000	5.10	---	---
N. Y.	22500	51.60	25065	80.21	29065	80.21	22500	31.60	25000	68.75	---	---	---	---
Ohio	172400	512.11	---	---	---	---	104550	282.00	24900	63.48	---	---	---	---
Mass.	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cal.	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ill.	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ind.	140100	458.66	---	---	25000	92.50	---	---	48000	145.20	---	---	---	---
Mich.	53900	185.26	---	---	---	---	---	---	24000	82.80	---	---	---	---
Wis.	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tex.	---	---	---	---	---	---	25000	107.50	---	---	61316	828.43	153984	2005.30

*Wholesale market.

Onions

Table 2 shows the receipts of onions on the Wheeling market, amounting to 2,166,811 pounds, with carrying charges of \$10,125.01. West Virginia did not supply any of this quantity. Ohio supplied more onions than any other state. Indiana ranked second.

Cabbage

Table 3 shows the receipts of 2,876,676 pounds of cabbage, with carrying charges amounting to \$16,903.00. New York ranks first in quantity of shipments. Ohio supplied a small quantity (77,000 pounds), while no shipments came from West Virginia. Shipments of cabbage were received every month of the year,—abundant evidence of opportunity to increase local production at any period when climatic conditions permit.

Tomatoes

Table 4 shows the receipts of tomatoes on the Wheeling market. A total of 864,333 pounds, with carrying charges amounting to \$7,322.74, were received. Texas contributed more than any other state, while only a few came from West Virginia and Ohio. At the time home grown tomatoes were in season, however, very few were received from producing areas other than Ohio and West Virginia. Some tomatoes were received from the wholesale markets of Pittsburgh during each month of the year. Most of the tomatoes shown as express receipts came from Pittsburgh and points in Ohio. The boat shipments for the most part came from the Marietta, Ohio, section, with very few from the West Virginia side.

The Wheeling market presents conditions parallel with those of the Clarksburg and Charleston markets in the matter of tomato supply. Local production practically takes care of demand during the local producing season. Any material increase should occur in "out-of-season" production, but sufficient data are not at hand to judge the profitability of such an undertaking.

Lettuce

In Table 5 the receipts of lettuce on the Wheeling market are presented. The receipts by express and freight amounted to 1,122,098 pounds, with carrying charges of \$12,210.37. Some lettuce was received during each month of the year. Express shipments came princi-

TABLE 3.—Receipts of Cabbage in Wheeling by Freight: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Origin of Shipment	1925											
	Total		June		July		August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	2876675	\$16903.00	173325	\$1061.63	25850	\$ 122.55	24700	\$ 117.32	169525	\$ 701.44	601560	\$ 1850.53
Pittsburgh*	1039626	4525.91	195725	502.19	25850	122.55	24700	117.32	92585	439.85	220425	737.76
Virginia	22109	162.20	22100	162.20					49620	136.46	301575	829.33
New York	1050795	2883.15							27320	125.13	26000	85.40
Ohio	77320	260.93	24000	50.40							25700	89.96
Michigan	25700	89.96										
Texas	352425	5560.54										
Alabama	50485	597.28										
South Carolina	101320	1133.66										
Kentucky	21735	246.05										
Mississippi	107310	1335.24	22000	346.84								
Wisconsin	27860	108.03									27860	108.08

Origin of Shipment	1926													
	November		December		January		February		March		April		May	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	238190	\$ 741.86	285930	\$ 883.87	334902	\$1035.43	136458	\$ 558.93	267251	\$ 2723.86	279740	\$3622.53	338745	\$3483.05
Pgh.*	25500	121.12	56500	268.37	153872	628.25	60008	284.99	114736	544.82	56500	268.37	103225	490.32
Va.			229439	615.50	181030	407.18	76450	273.94						
N. Y.	212690	620.74												
Ohio														
Mich.														
Tex.														
Ala.														
S. Car.														
Ky.														
Miss.														
Wis.														

*Wholesale market.

TABLE 4.—Receipts of Tomatoes in Wheeling by Freight, Boat, and Express: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Method of Transportation, and Origin of Shipment by Freight	1925											
	Total		June		July		August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	804333	\$7322.74	465224	\$5447.93	211211	\$ 952.94	65322	\$ 361.37	2856	\$ 12.17	5130	\$ 27.15
FREIGHT:												
Pittsburgh*	244985	1084.61	81170	329.27	39915	189.52	45003	21.37			4360	23.27
Mississippi	105540	1006.61	83000	782.34	22540	224.27						
Texas	280904	4172.02	280904	4172.02								
Tennessee	41160	335.45	20130	154.30	21000	171.15						
Indiana	42000	212.00	42000	212.00								
BOAT	71580	127.10			40140	66.70	28920	52.90	2520	7.50		
EXPRESS	78164	384.95			45616	89.30	31942	287.10	336	4.67	270	3.88

Method of Transportation	1926													
	November		December		January		February		March		April		May	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	13850	65.80	7725	\$ 36.56	4175	\$ 19.95	10100	\$ 47.97	24390	\$ 115.90	30300	\$ 125.00	24000	\$110.00
FR.T.:														
Pgh.*	13850	65.80	7725	36.56	4175	19.95	10100	47.97	24390	115.90	30300	125.00	24000	110.00
Miss.														
Tex.														
Tenn.														
Ind.														
BOAT														
EXP.														

*Wholesale market.

TABLE 5.—Receipts of Lettuce in Wheeling by Freight and Express: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Method of Transportation, and Origin of Shipment by Freight	1925											
	Total		June		July		August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	1122098	\$12210.37	24260	\$ 115.17	20100	\$ 95.47	32955	\$ 156.27	39595	\$ 188.57	51415	\$ 244.15
FREIGHT:												
Pittsburgh*	446640	2121.53	24260	115.17	20100	95.47	32955	156.27	39595	188.57	51415	244.15
California	347200	6559.63										
Ohio	92974	297.68										
Arizona	88800	1639.16										
EXPRESS	146484	1532.37										

Method of Trans- portation	1926											
	December		January		February		March		April		May	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	120540	\$1549.60	131898	\$1718.03	128166	\$1684.02	258361	\$2768.35	139110	\$1663.20	102693	\$1418.85
FRT.:												
Pgh.*	44600	212.32	27300	129.67	40010	190.00	37140	176.22	37140	176.22	40000	190.00
Cal.	66640	1264.58	40160	719.63	80960	1452.04	89920	1703.93	24320	491.19	24320	566.99
Ohio	9300	72.70	24278	149.00	7196	41.98	52200	34.00				
Ariz.			40160	719.68					24320	456.74	24320	522.74
EXP.							79101	854.20	53330	539.05	14053	139.12

* Wholesale market.

pally from Ohio. Freight shipments came from Ohio, California, and Arizona, with many small shipments from Pittsburgh which in all probability were California and Arizona lettuce. The average carrying charge for the total receipts was \$1.09 per cwt., while the average carrying charge for the California shipments was \$1.88 per cwt. This high carrying charge gives local producers a considerable margin over their competitors in California and Arizona. Some leaf lettuce is grown locally, but no great success in growing head lettuce has been experienced. Consumers seem to prefer head lettuce to the leaf lettuce varieties, and for this reason local producers may not be able to meet competition from California and Arizona.

Miscellaneous Vegetables

Table 6 shows the receipts of miscellaneous vegetables on the Wheeling market. Included are such vegetables as peppers, cucumbers, celery, green beans, and green corn. The larger part of these shipments came from the wholesale markets of Pittsburgh and Columbus.

Poultry and Eggs

Table 7 shows the express receipts of poultry on the Wheeling market. Some poultry was brought to Wheeling by boat, but the records were not sufficient to permit of even a reliable estimate. No shipments came by freight. The 225,331 pounds of poultry came from points in Ohio and West Virginia, no shipments being noted from other states.

Table 8 shows that 20,866 cases of eggs were received on the Wheeling market by freight, boat, and express. The shipments by boat and express came from points in Ohio and West Virginia. The record would indicate that local demands are reasonably well met by local production, yet with some opportunity for expansion of the industry.

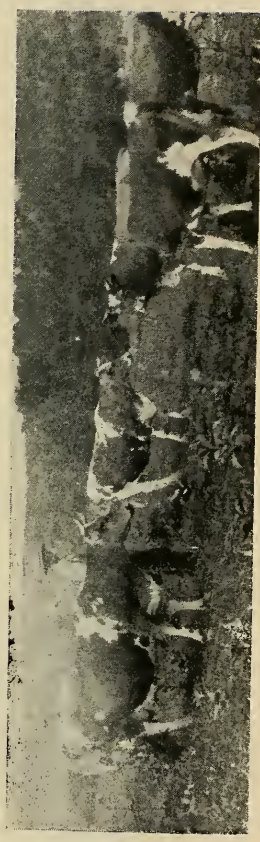
Dairy Products

Dairy farming in the Wheeling area in the past two years has met with reverses, and much dissatisfaction and controversy has developed on the part of the dairy farmers. A few years ago there was considerable expansion in the production of market milk in Ohio County. There is nothing to indicate that this was not a healthy expansion, prompted by the demand for fluid milk. Within the last few

TABLE 6.—Receipts of Miscellaneous Vegetables† in Wheeling by Freight and Express: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Total		Origin of Shipment by Freight						Express	
	Pounds	Carrying Charges	Pittsburgh*		California		Virginia		Pounds	Carrying Charges
			Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges		
Total	2694139	14831.84	2110993	\$8443.44	22160	\$ 463.37	45140	340.00	515936	\$5580.03
1925										
June	337869	\$1753.85	280135	1120.80	---	---	---	---	57734	633.05
July	259033	1506.43	186600	746.40	---	---	---	---	72433	760.03
August	76371	599.73	41365	165.44	---	---	---	---	35005	434.29
September	113099	654.41	89075	356.40	---	---	---	---	24024	293.01
October	169839	1315.60	111985	447.60	---	---	---	---	57854	868.00
November	187689	873.55	104450	418.00	---	---	---	---	83237	455.56
December	290127	2120.18	159060	636.00	22160	463.37	45140	340.00	63767	675.81
1926										
January	202299	1154.32	166800	667.20	---	---	---	---	35499	487.12
February	206448	876.25	189503	758.00	---	---	---	---	16945	171.75
March	207575	929.75	200930	803.50	---	---	---	---	6645	72.65
April	338515	1550.50	310000	1240.00	---	---	---	---	28515	310.50
May	305275	1487.26	271000	1084.00	---	---	---	---	34975	413.26

†Peppers, Cucumbers, Beans, Corn and Celery. *Wholesale market.



Dairy farming holds the place of first importance in the Wheeling area.

TABLE 7.—Receipts of Poultry in Wheeling by Express: Quantity and Carrying Charges, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	225331	\$2581.56
1925		
June -----	13862	185.28
July -----	12996	161.00
August -----	11343	131.22
September -----	12938	145.41
October -----	21852	211.24
November -----	26307	244.34
December -----	23511	218.40
1926		
January -----	11353	108.81
February -----	15748	152.00
March -----	26936	377.61
April -----	27735	373.91
May -----	19750	272.34

years, however, there has been a surplus of fluid milk on the market. This has come about because of an extension of the highway system which has made it possible for many farmers to bring milk to Wheeling from points in Ohio and West Virginia as much as fifty miles away. The fluid-milk producing area has been widely extended. Land values are not nearly so high outside of the suburban area of Wheeling and across the Ohio River on the Ohio side. Dairy farmers in Ohio County are finding it almost impossible to compete with those on cheaper land. The surplus milk must go into manufactured products, or find a market elsewhere. It is questionable if Ohio County dairymen can compete with cheap land areas in producing milk for manufactured products.

Cost of Producing Milk

Data were collected from ten dairy farmers in Ohio County in May, 1926, showing their estimated cost of producing dairy products. The survey method was used in collecting the data. All the costs of producing milk were included, such as costs of feed, labor, depreciation on cows and buildings, taxes, equipment, repairs, and service fees. The value of manure, calves produced, and service fees was deducted from these costs.

The herds numbered from twelve to twenty-two cows and the dairymen were considerably better than the average dairymen of the county.

Costs of milk production ranged from 20.1c to 42.5c per gallon, with an average of 29.8c for the ten producers. At this time these

TABLE 8.—Receipts of Eggs in Wheeling by Freight, Express, and Boat: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Origin of Shipment by Freight					
	Total		Chicago*		Iowa	
	Cases	Carrying Charges	Cases	Carrying Charges	Cases	Carrying Charges
Total -----	20866	\$7546.80	6021	\$2089.85	2000	\$ 725.02
1925						
June -----	2171	712.51	254	113.30	-----	-----
July -----	1162	499.87	655	267.58	-----	-----
August -----	1807	751.87	1205	479.08	-----	-----
September -----	844	312.36	-----	-----	400	125.08
October -----	2186	715.62	1232	372.17	400	122.96
November -----	3355	1106.90	1645	434.43	800	365.68
December -----	1242	552.44	565	216.71	-----	-----
1926						
January -----	1814	676.53	215	94.58	400	111.30
February -----	1993	351.39	250	112.00	-----	-----
March -----	2276	914.17	-----	-----	-----	-----
April -----	1170	506.75	-----	-----	-----	-----
May -----	841	446.39	-----	-----	-----	-----

Month	Origin of Shipment by Freight				Express		Boat	
	Ohio		Miscellaneous		Cases	Carrying Charges	Cases	Carrying Charges
	Cases	Carrying Charges	Cases	Carrying Charges				
Total ----	3130	\$ 728.26	105	\$ 25.82	9346	\$3967.15	264	\$ 70.70
1925								
June ----	1390	335.89	9	2.43	518	260.89	-----	-----
July ----	85	21.63	-----	-----	422	210.66	-----	-----
August ----	58	14.75	-----	-----	534	255.84	10	2.20
September ----	86	23.15	-----	-----	349	162.15	9	1.98
October ----	240	56.55	-----	-----	333	161.24	11	2.70
November ----	475	82.72	-----	-----	426	219.57	9	4.50
December ----	40	11.45	-----	-----	624	317.78	13	6.50
1926								
January --	400	75.47	25	8.00	774	387.18	-----	-----
February --	-----	-----	50	10.94	1692	227.13	3	1.32
March ----	234	63.25	-----	-----	1862	805.92	180	45.00
April ----	152	43.40	12	3 16	980	453.69	26	6.50
May ----	-----	-----	9	1.29	832	445.10	-----	-----

*Wholesale market.

producers were selling whole milk at from 25c to 60c per gallon. Other producers were selling whole milk at as low as 20c per gallon wholesale. None of the ten producers interviewed was losing money on his milk; some were making but small margins of profit; others were making fairly satisfactory profits. With the volume of business involved, the margin of profit on milk was not sufficient for the most economical producers to make more than fairly good wages.

Table 9 shows the receipts of condensed milk on the Wheeling market.

Table 10 shows the receipts of cheese on the Wheeling market.

Table 11 shows the receipts of oleomargarine on the Wheeling market.

TABLE 9.—Receipts of Condensed Milk in Wheeling by Freight: Quantity and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	1759227	\$5945.71
1925		
June -----	189522	751.38
July -----	443668	1367.83
August -----	70196	165.27
September -----	113629	332.24
October -----	98773	377.22
November -----	86456	337.61
December -----	123226	345.31
1926		
January -----	210230	662.20
February -----	165742	597.74
March -----	81479	280.31
April -----	91346	382.69
May -----	79910	345.91

TABLE 10.—Receipts of Cheese in Wheeling by Freight and Express: Quantity and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	1903649	\$15912.60
1925		
June -----	148112	1341.38
July -----	203810	1935.00
August -----	213266	1035.47
September -----	146205	1442.81
October -----	239171	2070.67
November -----	127057	1116.08
December -----	147119	1351.48
1926		
January -----	131510	1189.30
February -----	172734	1191.50
March -----	170868	1516.55
April -----	102842	946.27
May -----	100655	726.09

TABLE 11.—Receipts of Oleomargarine in Wheeling by Freight and Express: Quantity and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	976508	\$7537.03
1925		
June -----	55775	507.15
July -----	73650	572.42
August -----	102473	820.70
September -----	76614	657.85
October -----	77262	527.80
November -----	92161	532.11
December -----	86226	571.13
1926		
January -----	103658	845.15
February -----	88398	625.29
March -----	57357	502.81
April -----	82263	694.39
May -----	77641	630.23

Fruits

Peaches

Table 12 shows the receipts of peaches on the Wheeling market.

Apples

Table 13 shows the receipts of approximately 125,000 bushels of apples on the Wheeling market. New York ranks first in terms of quantity shipped, with Ohio second and West Virginia third. The average carrying charges were 37c per cwt. for New York apples, 22c per cwt. for Ohio, and 19c per cwt. for West Virginia, while for Washington apples charges averaged \$1.66 per cwt.



Packing apples for the local market.

TABLE 12.—Receipts of Peaches in Wheeling by Freight: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive*

Origin of Shipment	Total		1925			
	Pounds	Carrying Charges	June		July	
			Pounds	Carrying Charges	Pounds	Carrying Charges
Total -----	2181587	228080.54	180000	\$2624.36	700090	\$10332.40
Georgia -----	920006	13595.56	180000	2624.36	700000	10332.40
North Carolina -----	80000	1152.50	-----	-----	-----	-----
Delaware -----	27800	485.29	-----	-----	-----	-----
California -----	104109	2545.08	-----	-----	-----	-----
New Jersey -----	181839	1717.91	-----	-----	-----	-----
Arkansas -----	20571	350.61	-----	-----	-----	-----
Tennessee -----	180000	1962.95	-----	-----	-----	-----
New York -----	354992	3296.24	-----	-----	-----	-----
Ohio -----	312276	2974.40	-----	-----	-----	-----

Origin of Shipment	1925					
	August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total -----	529619	\$7443.03	652009	\$6471.34	119959	\$1209.41
Georgia -----	40000	638.80	-----	-----	-----	-----
North Carolina -----	80000	1152.50	-----	-----	-----	-----
Delaware -----	27800	485.29	-----	-----	-----	-----
California -----	78073	1787.07	26036	758.01	-----	-----
New Jersey -----	103175	1065.81	78664	652.10	-----	-----
Arkansas -----	20571	350.61	-----	-----	-----	-----
Tennessee -----	180000	1962.95	-----	-----	-----	-----
New York -----	-----	-----	333508	3980.98	21334	215.26
Ohio -----	-----	-----	213701	1980.25	98575	994.15

*No receipts in months of November, 1925, to May, 1926.

Grapes

Table 14 shows the receipts of 3,747,822 pounds of grapes, with carrying charges amounting to \$69,294.44. The larger part of these shipments came from California.

Reports from local farmers indicate that grapes do quite well in this area, and if the preference for the California varieties is not too strong, there seems to be an opportunity for profitable grape culture in this section. California grapes compete with locally-grown and New York grapes during September and October.

Melons

From Table 15 it may be noted that local melon production does not meet the demand even in the height of the local season. In Sep-

TABLE 13.—Receipts of Apples in Wheeling by Freight, Boat, and Express: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Method of Transportation, and Origin of Shipment by Freight	1925											
	Total		June		July		August		September		October	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	7462639	35012.12	135835	\$ 542.80	147699	\$ 879.00	169172	\$ 754.32	490870	\$1868.08	1322024	\$8962.69
FREIGHT:												
Oregon	181422	1202.49	---	---	---	---	---	---	---	---	---	---
Pittsburgh*	1146424	3905.10	135835	542.80	28900	115.40	88200	\$201.30	85700	342.80	103165	412.80
Delaware	317440	1470.60	---	---	72000	471.90	24000	152.20	24000	97.20	51840	176.26
Illinois	74150	489.40	---	---	28500	175.40	45650	314.00	---	---	---	---
New York	3096187	9512.39	---	---	---	---	---	---	297870	998.40	494141	1585.39
Ohio	873385	1931.37	---	---	---	---	---	---	26400	166.72	104045	285.26
Maryland	176960	604.03	---	---	---	---	---	---	57120	209.23	24000	97.20
Washington	413513	6878.41	---	---	---	---	---	---	---	---	187110	3210.03
Michigan	78000	325.90	---	---	---	---	---	---	---	---	30000	130.30
West Virginia	517819	974.61	---	---	---	---	---	---	---	---	103520	172.52
Virginia	32160	130.25	---	---	---	---	---	---	---	---	32160	130.25
Idaho	456223	7024.00	---	---	---	---	---	---	---	---	181843	2732.68
Missouri	30815	222.82	---	---	---	---	---	---	---	---	---	---
EXPRESS	23781	216.05	---	---	10199	89.30	9222	79.42	4360	47.33	---	---
BOAT	44860	129.70	---	---	8100	27.00	2100	7.40	1920	6.40	10200	30.00

Method of Transportation	November		December		January		February		March		April		May	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total	1175518	\$4791.48	566721	\$2681.73	485477	\$2618.55	1008851	\$5208.21	846475	\$2905.78	610615	\$2220.39	497382	\$1779.09
FREIGHT:														
Oregon	---	---	---	---	---	---	144000	567.60	---	---	---	---	---	8320
Pittsburgh*	127650	368.20	212689	475.00	90065	360.00	153500	613.60	99960	390.90	---	---	20760	---
Delaware	25600	87.04	---	---	---	---	129000	486.00	---	---	---	---	---	---
Illinois	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New York	602727	1681.81	238787	654.19	46800	156.20	210720	735.68	465942	1416.71	348500	1531.50	391200	752.51
Ohio	59600	171.00	24000	74.40	154560	293.56	117260	232.94	206720	392.77	204800	389.12	---	---
Maryland	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Washington	38462	503.85	---	---	---	---	---	---	---	---	---	---	---	---
Michigan	48000	195.60	---	---	---	---	---	---	---	---	---	---	---	---
West Va.	169349	365.15	---	---	---	---	---	---	---	---	---	---	---	---
Virginia	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Idaho	92190	1335.33	---	---	---	---	---	---	---	---	---	---	---	---
Missouri	---	---	---	---	---	---	---	---	---	---	---	---	---	---
EXPRESS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BOAT	11940	33.50	---	---	---	---	---	---	10600	25.40	---	---	---	---

*Wholesale market.

TABLE 14.—Receipts of Grapes in Wheeling by Freight: Origin of Shipment, Quantity, and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive†

Month	Total		Origin of Shipment					
			Pittsburgh*		California		New York	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total ---	3747822	\$69294.44	160600	\$ 762.83	3099997	\$65046.87	487225	\$3484.74
1925								
July ----	40535	624.61	14075	66.85	26460	557.76	-----	-----
Aug. ----	201284	3562.67	42275	200.80	159009	3361.87	-----	-----
Sept. ----	817683	14861.98	95100	451.72	660768	13882.79	61820	527.47
Oct. ----	1532222	27436.61	9150	43.46	1209087	25182.40	313985	2210.75
Nov. ----	1043233	20331.12	-----	-----	931813	19584.60	111420	746.52
Dec. ----	112860	2477.45	-----	-----	112860	2477.45	-----	-----

*Wholesale market.

†No receipts in months of June, 1925, and January to May, 1926.

TABLE 15.—Melon Receipts in Wheeling by Freight: Origin of Shipment, Quantity and Carrying Charges by months, June, 1925, to May, 1926, Inclusive*

Origin of Shipment	Total		1925	
	Pounds	Carrying Charges	June	
			Pounds	Carrying Charges
Total -----	4084200	\$25748.30	363000	\$2498.89
Florida -----	391600	2827.04	82500	605.27
Georgia -----	2982400	18943.62	280500	1893.62
Alabama -----	56500	381.32	-----	-----
South Carolina -----	361500	2123.59	-----	-----
Indiana -----	208700	1098.81	-----	-----
Virginia -----	25200	157.20	-----	-----
West Virginia -----	25200	52.92	-----	-----
Delaware -----	33100	158.80	-----	-----

Origin of Shipment	1925					
	July		August		September	
	Pounds	Carrying Charges	Pounds	Carrying Charges	Pounds	Carrying Charges
Total -----	1974700	\$12924.17	1527400	\$9221.28	219100	\$1103.96
Florida -----	309100	2221.77	-----	-----	-----	-----
Georgia -----	1425400	9257.80	1215500	7431.40	61000	365.80
Alabama -----	56500	381.32	-----	-----	-----	-----
South Carolina -----	159700	938.43	201800	1185.11	-----	-----
Indiana -----	24000	124.80	84900	447.57	99800	526.44
Virginia -----	-----	-----	25200	157.20	-----	-----
West Virginia -----	-----	-----	-----	-----	25200	52.92
Delaware -----	-----	-----	-----	-----	33100	153.80

*No receipts in months of October, 1925, to May, 1926.

tember 219100 pounds of melons were shipped to the Wheeling market. Only about one eighth of these came from West Virginia, and none from Ohio.

Meat

Table 16 shows the receipts of meat on the Wheeling market. The greater part came from Chicago, Columbus, and Pittsburgh. There is a fair-sized packing plant in Wheeling, as may be judged from receipts of cattle as shown in Table 17 and of hogs as shown in Table 18.

TABLE 16.—Receipts of Meats in Wheeling by Freight: Quantity and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	15047566	\$81818.59
1925		
June -----	1317856	6877.52
July -----	1376390	7663.99
August -----	1526064	7933.30
September -----	1131799	6221.75
October -----	1387281	7304.35
November -----	1187598	6105.31
December -----	1210118	6372.30
1926		
January -----	1348239	7476.93
February -----	1282689	7186.03
March -----	1419670	7588.62
April -----	841809	5231.21
May -----	1018053	5857.28

TABLE 17.—Receipts of Cattle in Wheeling by Freight and Express: Quantity and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	15396301	\$70990.36
1925		
June -----	603839	2928.07
July -----	974998	3705.61
August -----	977574	4363.43
September -----	1159863	4715.88
October -----	612116	6160.02
November -----	1089181	3468.89
December -----	1320712	5539.59
1926		8614.95
January -----	1764133	
February -----	1831322	8156.93
March -----	2216463	10540.77
April -----	1387379	6090.49
May -----	1458721	6705.73

Grain and Mill Feed

Table 19 shows the receipts of grain and mill feed received on the Wheeling market. The Wheeling area is not well adapted to grain production, topography and price of land considered. It is probably more economical for dairymen to buy the bulk of their feed than to attempt to raise it on high-priced land and with high-priced labor.

TABLE 18.—Receipts of Hogs in Wheeling by Freight: Quantity and Carrying and Feed Charges by Months, June 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	65635945	\$302630.99
1925		
June -----	7367970	57136.45
July -----	6103950	38793.97
August -----	5227081	19984.98
September -----	5971657	21755.83
October -----	5474900	19536.27
November -----	5413470	19430.68
December -----	5483951	19951.12
1926		
January -----	5846279	22196.36
February -----	4698662	18556.87
March -----	5238306	22428.77
April -----	4660760	22020.71
May -----	4148959	20838.98

TABLE 19.—Receipts of Grain and Mill Feed in Wheeling by Freight: Quantity and Carrying Charges by Months, June, 1925, to May, 1926, Inclusive

Month	Quantity in Pounds	Carrying Charges
Total -----	8777833	\$15658.11
1925		
June -----	600263	1130.73
July -----	594525	962.15
August -----	1331009	2616.51
September -----	849988	1498.45
October -----	178868	272.24
November -----	1097426	2042.65
December -----	974568	1520.24
1926		
January -----	881899	1471.00
February -----	497212	905.02
March -----	630315	1264.65
April -----	422055	662.83
May -----	719705	1311.64

SUMMARY

Records of freight, express, and boat receipts show that food commodities are coming to the Wheeling market in large quantities, from distant points and with high freight costs.

Approximately 316,000 bushels of potatoes were brought to the Wheeling market by boat, express, and freight. West Virginia farmers supplied only 1.4 percent of this total and only 3.7 percent of the potatoes received during the four-months' period, August, September, October, and November, which is the peak of the marketing season for locally grown potatoes. The average carrying charges on the potatoes received on the market amounted to 50c per cwt., while for those potatoes coming from West Virginia the carrying charges amounted to 28c per cwt. Prices are favorable for locally grown potatoes.

West Virginia potato growers have scarcely touched the Wheeling potato market. It would seem advisable that steps be taken to open this market for state-grown potatoes.

Large quantities of onions, cabbage, and lettuce came on the market. The market is available but not enough data were collected in this study to hazard advice on the profitableness of the culture of these vegetables locally.

The data show that local production of beans and tomatoes fairly well supplies the market demands for these vegetables during the local producing season.

Poultry production for the local market could stand some expansion before local demands are satisfied.

It would appear that the culture of grapes and small fruits might well take a place on some farms in the area.

While orcharding appears to be over-expanded in the country as a whole, there seems to be an opportunity for farmers in the northern panhandle section to produce apples at a fair profit for local markets.

DISCUSSION

Data on agricultural production costs in the Wheeling area together with comparative costs in the main competing areas are essential in guiding readjustments. A cooperative study by Ohio, Pennsylvania, and West Virginia would be necessary to obtain these data. The present study has gone no further than to point out some of the possibilities of readjustments. It should point the way to more detailed studies of the possibilities for producing locally the various crops for which the local market shows an unfilled demand.

Farmers in the Wheeling area have an advantage in transportation costs because of nearness to market. Yet further study might show that increased production costs would wipe out this advantage in the case of some or all of the commodities considered.

Truck farming appears to be losing in favor in the area, but no definite reason for this circumstance was ascertained.

Dairy farming for market milk production appears to be overdeveloped. If dairymen find that they cannot produce milk for sale at the price of manufactured milk, they may find it profitable to change to other sorts of production. The road system has opened up a large section of cheaper land than is to be found in Ohio County. Consequently more and more of the fluid milk is becoming surplus milk and has to go at manufactured-milk prices.

Dairy farmers in the Wheeling area are in need of a thorough study of milk production and marketing.



Much cabbage is grown for the local market.





