

**MARKETING POTATOES**  
**in**  
**DEFICIT**  
**vs.**  
**Surplus Producing Areas**

*A Comparison of*  
**RED RIVER VALLEY AND OHIO**

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## FOREWORD

The potato industry is in a continual search of the "ideal" place to grow and the ideal way to market potatoes. This does not mean that there is one best place to grow and one best way to market potatoes or that all areas should market the same package or variety or even the same grades. To assume this is to ignore the fact that the advantages and disadvantages in potato production and marketing are often peculiar to each area and are not general to producers or marketers in all areas. Potatoes in one area may successfully compete for productive resources because of returns that are due largely to the effects of high quality, high yields or efficient production. In another area, potatoes may be able to compete for resources largely because of excellent nearby markets.

The relative advantages of the different potato producing areas are constantly changing. Potato production has generally been shifting towards the areas with efficient production and away from areas near the market. The advantage of location relative to the market has apparently become of less importance than other factors in recent years. However, a sizable production of potatoes still exists near to the market because of the advantage in marketing that location gives these nearby producers. In addition to the demand for the "better" grades of the nearby growers there is also a demand for the cheaper "off grade" potatoes. Thus, a higher percentage of the crop can be marketed. The prices paid for these "off grade" potatoes would not pay for their shipment from distant areas through regular market channels but they can be marketed at a profit at the packinghouse door.

Any program that prevents either the nearby or the distant production area from taking full advantage of its favorable factors will handicap that area in competition. This study will show empirical evidence of the marketing differences in two "representative" areas of potato production and will raise some questions as to the significance of these differences.

# MARKETING POTATOES IN DEFICIT VS. SURPLUS PRODUCING AREAS:

## A Comparison of Red River Valley and Ohio

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### INTRODUCTION

Ohio potato producers harvested 3.0 million cwt. in 1956 compared with 12.8 million cwt. in North Dakota and 10.4 million cwt. in Minnesota. This report is a brief comparison of potato marketing in the Red River Valley, which is the major production area in both North Dakota, Minnesota, and Ohio.

Ohio is an area of deficit potato production with practically unlimited markets within 100 miles of any producer while the Red River Valley is an area of surplus production with the nearest major markets over 200 miles away and with many potatoes moving 1000 miles or more to market. The local nature of the Ohio market is illustrated in Table 1. Under these different conditions, it was expected that the grades marketed, the grade-price differentials, and the method of marketing and utilization of the crop would vary between the two areas.

Due to the wide differences in distance from market and other conditions in the two areas, the following differences in marketing were expected:

1. A larger proportion of the potato crop would be marketed for food in Ohio than in the Red River Valley. This would mean that of two cull potatoes with identical grade characteristics,

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Special acknowledgment should be made to Perry V. Hemphill, North Dakota Agricultural College, who supervised the collection of the data in the Red River Valley and to J. E. Jeffries, formerly of the Ohio Agricultural Experiment Station, who assisted in the analysis. This is a phase of a contributing project under NCM-15.

**TABLE 1.—First Destination of Potatoes Sold by Growers in Each Area of Ohio, 1956**

Destination	Ohio Production Area				Total
	Northeast	Northwest	Southeast	Southwest	
	(percent)				
Northeast Ohio	52.9	6.6	60.9	----	40.1
Northwest Ohio	4.0	19.0	----	5.7	5.6
Southeast Ohio	3.3	0.2	12.2	*	3.8
Southwest Ohio	8.7	39.9	11.0	81.4	24.0
Outside Ohio	19.3	29.9	3.8	4.3	16.0
Consumer at Farm	6.4	3.8	10.1	5.0	6.5
Destination Unknown	5.4	0.6	2.0	3.6	4.0
Total Sales	100.0	100.0	100.0	100.0	100.0

\*Less than .05 of one percent.

the Ohio potato could be profitably marketed in the fresh market for food uses while the potato from the Red River Valley would not be marketable because of the higher costs of marketing it.

2. The usual grades marketed would be different in the two areas.

#### LIMITATIONS OF DATA

Several factors prevented a clearcut comparison and testing of the marketing differences observed. Among these were the fact that the study in the Red River Valley included only one crop year indication of the "usual" percentage of "off grade" potatoes. The second major problem was the fact that the questions used to determine the proportions of "pickouts" in the two areas were slightly different. In the Red River Valley area, "pickouts" were defined as including only the unsalable potatoes. In Ohio, "pickouts" included all potatoes picked out at the grading table. Some of these potatoes were later sold as unclassified grade potatoes.

#### METHOD

The data in Ohio were obtained from a random sample of 75 growers and grower shippers representing 0.8 million cwt. while that in the Red River Valley was obtained from a sample of 23 grower-shippers and five shippers representing 8.2 million cwt. The survey method was used in obtaining the data.

## FINDINGS

The differences in the scale of operations in the Red River Valley and Ohio were tremendous. Ohio shippers averaged 11,220 cwt. each, compared with 294,394 cwt. for those in the Valley (Table 2). The majority of the Valley shippers had volumes of over 100,000 cwt. while the largest Ohio shippers had less than 75,000 cwt. volume. Ohio growers stored an average of 55 percent of their production while those in the valley stored over 75 percent of the crop and stored for a longer period.

Ohio shippers sold a large portion of their production through the Ohio Potato Growers Association "Buckeye Brand" while in the Valley each shipper sold for himself under a private Brand and under the provisions of a Marketing Order. The marketing order was a compulsory arrangement which was voted in by a two-thirds majority of the growers in the valley; under it all growers in the area are allowed to market only the grades agreed on by the Committee administering the marketing order. The Ohio Potato Growers Association is a voluntary association of growers who agree to market cooperatively under the brand name and subject to the rules of the association. These differences in the marketing structure in the two areas are, in themselves, a reflection of the different production and marketing conditions that exist in the two areas.

## UTILIZATION

The utilization of the 1956 potato crop was quite different in the Red River Valley than in Ohio. Sales for table stock were the prin-

**TABLE 2.—Distribution of Potato Shippers by Volume Shipped,  
Ohio and Red River Valley, 1956 Crop**

Volume Shipped	Production Area	
	Red River Valley	Ohio
(cwt.)	(Number of Shippers)	
Under 25,000	--	63
25,000-49,999	2	11
50,000-74,999	2	1
75,000-99,000	1	--
100,000 and over	23	--
Total	28	75
Total cwt. Shipped	8,243,039	841,423

cial outlet in both areas but in Ohio these accounted for only 55 percent of the total compared with 64 percent in the Valley (Table 3). For Ohio, potatoes for chipping were the next most important outlet, while seed potatoes ranked next for the Valley. It is possible that some of the "Table Stock" potatoes shipped out of the Valley were later used for chipping. However, a check on procurement practices of chippers indicates that it is unlikely that many were so used.

From the data available, it appeared that the percentage of the crop that was fed was higher in the Valley than in Ohio.

The high percentage classed as "dumped" in Ohio was due largely to the practices of a few larger growers on muck land who felt that small and off-grade potatoes should not be sold on the table stock market and who had no feeding outlets.

**TABLE 3.—Utilization of 1956 Potato Crop, Red River Valley and Ohio**

Use	Production Area	
	Red River Valley	Ohio
	(percent)	
<b>Sold</b>		
Table Stock	63.5	55.2
Chipping	9.7	34.6
Other Processing		
Flour	0.7	----
Canning	0.1	----
Other	4.8	----
Total Process	5.6	
Seed	12.5	*
Cattle Feed	0.3	----
Unknown	0.2	1.0
Total Sold	91.8	90.8
<b>Not Sold</b>		
Seed	----	1.0
Feed	----	2.7
Dumped	----	5.5
Unknown	8.2†	----
	8.2	9.2
Total	100.0	100.0

\*Less than .05 of one percent.

†Mostly feed with some seed use.

### MAJOR DEFECTS IN UNSOLD POTATOES

The cause of unsalability of potatoes differed for the two production areas. In Ohio, the major cause in 1956 was late blight and consequent decay in storage which accounted for 59 percent of unsold potatoes (Table 4). In the Valley, mechanical injury was the major

**TABLE 4.—Potatoes: Unsold Pickouts as a Percentage of Total Production, Red River Valley and Ohio, 1956**

Defect	Defect as a Percentage of Total Pickout		Pickout as a Percentage of Total Production	
	Red River Valley	Ohio	Red River Valley	Ohio
				(percent)
Scab	23.1	1.5	1.7	0.1
Cuts and Mechanical Injury	36.9	9.0	2.7	0.5
Hollow Heart	7.5	2.4	0.5	0.1
Rot	4.1	4.8	0.3	0.3
Cracks	9.3	----	0.7	----
Wireworm	2.0	5.0	0.1	0.3
Green	13.1	17.3	1.0	1.0
Blight	----	58.8	----	3.4
Other	3.2	1.2	0.2	0.1
Total	100.0	100.0	7.3	5.8

cause of defects accounting for 37 percent of all unsold potatoes compared with 19 percent in Ohio. Greening caused similar percentages of unsalable potatoes in the two areas. Scab accounted for 23 percent of the unsalable potatoes in the Valley and only 1.5 percent in Ohio. Cracking was another defect causing unsalability where the Valley growers had higher percentage unsalability than did Ohio growers.

### USUAL GRADES MARKETED

Another difference between Ohio and Red River Valley in potato marketing is in the usual grades marketed. In Ohio the most frequently mentioned grade was the "Unclassified" grade which in reality means no official grade (Table 5). A wide variation in quality existed within the unclassified grade. Some of the packs were up to U. S. No. 2 standards, while others could have been classified only as culls.

**TABLE 5.—Grade Names Given by Growers for Potato Sales,  
Ohio, 1956 Crop**

Grades Given	At Harvest	Out of Storage
	Number of Growers*	
Official U. S. Grades		
U. S. No. 1 Size A	4	9
U. S. No. 1	25	24
U. S. Commercial	11	16
U. S. No. 2	1	2
Unofficial Grades		
Field or Bin Run	1	1
Field Run Less Pickout	8	12
Unclassified	60	59
U. S. No. 1 Size B	3	4
No Stated Grade		
Cannery Grade	--	1
Feed	1	--
Seed	--	6

\*Most growers who sold potatoes gave two grades.

Mostly, the "unclassified" grade potatoes were the salable portion of the pickouts or defective potatoes, plus some but not all of the small potatoes. At harvest, 60 of the Ohio growers reported selling Unclassified potatoes while only 29 reported selling U. S. No. 1 or U. S. No. 1 A grade potatoes and 11 reported sales of U. S. Commercial potatoes. Sales from Ohio storages were similar with 59 reporting sales of Unclassified potatoes, 33 sales of U. S. No. 1 or No. 1 A potatoes and 16 reporting sales of U. S. Commercial grade. Sales of "Field Run" potatoes were mentioned by 8 at harvest and 12 from storage while U. S. No. 2 potato sales were mentioned by only one grower at harvest and two from storage.

While completely comparable data are not available for the Valley, the principal grade sold for table stock was as for Ohio, the U. S. No. 1 grade. The principal differences were in the other grades. Much greater use was made of the U. S. Commercial grade, the U. S. No. 2 grade in the Valley. None of the Valley potatoes were sold as "Unclassified" grade. The latter is due, in part at least, to the marketing order in effect in this area which forbids the sale of potatoes below the U. S. No. 2 grade.



In Ohio 59 percent of the table stock sales were graded U. S. No. 1 compared with the 54 percent reported for the Valley (Table 6). In Ohio, the "other" grade category accounted for 34 percent of table stock sales while this amounted to less than 0.1 of 1 percent in the Valley sales. Most of these were below a U. S. No. 2 grade and were labelled as unclassified.

**TABLE 6.—Comparison of Grades Marketed for Different Uses, Ohio vs. Red River Valley, 1956 Crop**

Dealer Grade Designation	Production Area	
	Red River Valley	Ohio
	(percent)	
<b>Table Stock Sales</b>		
U. S. No. 1	54.1	59.0
U. S. Commercial	19.8	6.5
U. S. No. 2	26.1	*
Other	*	34.5
Total	100.0	100.0
<b>Chipping Sales</b>		
U. S. No. 1	47.5	22.0
U. S. Commercial	50.9	32.2
Other	1.6	45.8†
Total	100.0	100.0
<b>Other Processing Sales</b>		
U. S. No. 1	0.2	3.4
U. S. Commercial	8.5	13.7
U. S. No. 2	85.1	—
Other	6.2	82.9
Total	100.0	100.0

\*Less than .05 of 1 percent.

†Mostly field run less pickouts.

Valley potatoes for chipping were about equally divided between the U. S. No. 1 and the U. S. Commercial grades. In Ohio, the major grade for chipping potatoes was the "other" or unofficial grade. These were usually designated as "Field Run" or "Field Run with pickouts out" rather than as an official grade. For other processing sale the U. S. No. 2 grade was the one most commonly used in the Valley while an unofficial grade was used in Ohio.

## PICKOUT AS A PERCENTAGE OF SALES

There was no great difference between Ohio and Red River Valley shippers in the percentages of unsold pickout reported for 1956-crop potatoes sold mainly for table stock use. There was a tendency for more Ohio than Red River Valley shippers to have extremely high pickout percentages (Over 23 percent of production).

This high pickout percentage for 23.9 percent of the Ohio growers was due mainly to an infestation of late blight in some areas and the consequent high percentage of decay. In a similar study for the 1955 crop in Ohio, less than half as many shippers fell in the pickout group of over 23 percent. (Table 7). The difference was not statistically significant.

**TABLE 7.—Distribution of Table Stock Potato Shippers by Percentage of Unsold Pickouts, Red River Valley, 1956, and Ohio\*, 1955 and 1956**

Percentage of Unsold Pickouts	Number of Shippers			Percent of Shippers		
	Red River Valley	Ohio		Red River Valley	Ohio	
	1956	1956	1955	1956	1956	1955
Under 3	5	17	29	31.3	37.0	34.1
3- 7	1	7	24	6.2	15.3	28.2
8-12	2	6	13	12.5	13.0	15.3
13-17	2	3	6	12.5	6.5	7.1
18-22	4	2	5	25.0	4.3	5.9
23 and over	2	11	8	12.5	23.9	9.4
Totals	16	46	85	100.0	100.0	100.0

\*Includes only shippers selling 75 percent or more for table stock.

In both Ohio and the Red River Valley the dealers selling for table stock uses had a greater percentage pickout than did those selling for chipping uses. For the Valley, the average pickouts for those dealing mostly in table stock potatoes was 9.5 percent compared with 5.1 percent for those with more than 25 percent chip and other non-table stock use (Table 8). In Ohio, those shippers selling over 75 percent table stock had over 20 percent pickouts while those selling over 75 percent for chipping use had only 8.2 percent pickout. The same relationships were found between pickout percentage and use of potatoes for the 1955

**TABLE 8.—Defect as Percent of Total Production by Use for which Potatoes Were Purchased, Red River Valley and Ohio, 1956**

Defect	75 Percent or More Table Stock		Mixed Use		75 Percent or more Chipping
	Red River Valley	Ohio	Red River Valley	Ohio	Ohio
			(percent)		
Scab	3.0	0.7	0.4	0.1	1.0
Cuts and Mechanical Injury	2.7	3.6	2.6	2.1	1.8
Hollow Heart	0.4	2.2	0.7	4.4	—
Rot	0.4	0.1	0.2	—	0.9
Cracks	1.1	—	0.2	—	—
Wireworm	0.1	1.7	0.2	—	—
Green	1.2	7.0	0.7	4.3	2.4
Second Growth	0.1	0.5	0.1	*	*
Blight	—	3.6	—	6.2	1.4
Other	0.5	1.1	—	0.3	0.7
Total	9.5	20.5	5.1	17.4	8.2
Total cwt.	3,948,015	421,720	3,900,218	197,521	222,132

as for the 1956 crop in Ohio. Various explanations for these grading differences have been suggested. One is that the better growers are more likely to sell to chippers. Another is the fact that the chipper is more interested in the chipping quality and less interested in the grade quality of the potato. Hence, if he can get the chipping quality he wishes he is willing to take some potatoes that would not grade up to table stock standards.

#### PERCENTAGE OF PICKOUTS SOLD

Over 60 percent of the defective potatoes picked out by Ohio producers in the grading process were eventually sold for table use (Table 9). None of the potatoes classed as grading "pickouts" in the Red River Valley were sold for table use. The difference in practices between Ohio and the Valley were due primarily to the differing avail-

**TABLE 9.—Percentage of Pickout and Small Size Potatoes Sold,  
Ohio, 1955 and 1956**

Defects	Average Percentage Sold	
	1955	1956
	(percent)	
Hollow Heart	27.0	93.5
Scab	53.5	86.4
Mechanical Injury	82.5	80.9
Green	67.9	80.1
Wireworm	67.8	66.7
Blight	71.7	3.8
Second Growth	63.3	100.0
Rot	4.9	----
Others	74.8	91.4
Average Defective Sold	69.2	63.9
Small Size Sold	57.0	46.0

ability of local market outlets for these defective potatoes in the two areas. Ohio growers had a ready table stock market for them while Valley growers did not.

#### TYPE OF BUYERS FOR DIFFERENT GRADES

In Ohio, consumer and trucker purchases at the farm accounted for 42 percent of the sales of these "off grade" potatoes whereas these outlets took less than 6 percent of the U. S. No. 1 grades (Table 10). Some of the better quality "Unclassified" grade potatoes went through regular wholesale and retail channels, particularly at harvest time. The sale price for the low grade or cull lots of these potatoes would not have been enough to pay the cost of packaging, transportation, wholesaling and retailing necessary for them to move through the normal potato marketing channels even in Ohio. However, these potatoes did have a value to the local consumer or to the trucker and to the farmer at his packinghouse door.

The principal outlet for each grade was the wholesale dealer although the combined retail and chain store purchases of U. S. No. 1 grades were greater. Both the chipper and the chip potato supplier purchased heavily on a commercial grade and of "field run" grade basis in Ohio.

**TABLE 10.—Types of First Buyers for Ohio Potatoes by Grades, 1956 Crop**

Type of Buyer	U. S. No. 1	U. S. Com- mercial	Field Run*	Others†	All Sales
	(percent)				
<b>Table Stock</b>					
Consumer at farm	3.9	6.1	1.9	16.5	6.6
Trucker at farm	2.0	1.9	‡	26.0	6.8
Retail store	7.4	1.0	----	8.2	5.2
Chain store	32.6	1.7	1.8	2.9	15.6
Wholesaler	28.7	12.9	----	31.1	21.5
Farmers market	‡	‡	‡	‡	‡
Hotels, etc.	0.3	----	----	0.6	0.3
Other table stock	6.1	0.5	----	8.8	4.7
Total table stock	81.0	24.1	3.7	94.1	60.7
<b>Chip Sales</b>					
Chip supplier	0.4	33.9	44.8	1.0	14.0
Chipper	18.5	41.0	51.5	0.1	24.1
Total chip sales	18.9	74.9	96.3	1.1	38.1
Other sales	0.1	1.0	----	4.8	1.2
Total sales	100.0	100.0	100.0	100.0	100.0
Percentage of Total sales	44.2	16.4	17.8	21.6	100.0

\*Includes "field run less pickout" according to grade specification.

†Mostly unclassified (salable portion of pickouts).

‡Less than .05 of one percent.

#### WASHING AND BRUSHING

Only 16 percent of the Ohio potatoes were washed and another 16 percent were brushed in 1956 compared with 76 percent washed and none brushed in the Valley (Table 11). Because of the dry harvest season, these percentages were probably lower in 1956 than normal for Ohio. However, the percentage washed in the Red River Valley is much higher than this in all seasons. Perhaps, part of the difference can be explained by the type of soil, part by the soil conditions at harvest, part by varieties grown, and part by the proportion going into chips, but part is probably due to the distance from the market and the greater difficulty in selling from the distant than the nearby area.

**TABLE 11.—Proportion of Crop That Was Washed or Brushed,  
Ohio and Red River Valley**

Method Cleaned	Production Area			
	Ohio 1955	Ohio 1956	Red River 1955	Valley 1956
	(Percent of Crop)			
None	43	68	20	24
Brushed	38	16	0	0
Washed	19	16	80	76
Total	100	100	100	100

### SUMMARY AND CONCLUSIONS

The North Central States' potato industry is a heterogenous industry. Potato producers in the several states and areas are affected differently by marketing forces and by legislative acts. For instance, Ohio has a production equal to only about 40 pounds per person in the state while North Dakota has a potato production equal to approximately 1750 pounds per person residing in that state. Ohio producers market mostly within 100 miles of the producer while North Dakota producers market mostly over 400 miles away. Ohio growers produce in rather small units distributed over the state while Red River Valley producers are concentrated in the Red River Valley and grow mostly on large acreages. Ohio packer-shippers averaged 11,220 cwt. each compared with 294,394 cwt. each for those in the valley. Ohio producers raise mostly white potatoes varieties while those in the valley raise mostly red varieties. About one-third of Ohio potatoes are sold for chipping compared with one-tenth of those in the valley.

The Valley has well-developed plants for potato flour and starch production while Ohio has none. In short, there are wide differences in the potato industry in these two areas. Possibly even more variation would exist among other production areas that might be compared with the North Central states or among other states in the United States than was found here. In any case, the differences found here would seem to preclude the development of any simple national program for handling the potato "problem". No plan yet devised would be of equal help to

each production area and much less to each potato grower. In each production area there is, no doubt, a marketing program that will maximize returns to growers. However, with the differences in marketing considerations that exist, it would seem that the producer in a deficit production area should scrutinize a program suggested by the surplus producing area with considerable care before he lent his support. The reverse is also true—the surplus producer should not expect that a program sponsored by producers in a deficit producing area would also help him. The problems of these two potato producing areas are so unlike that almost any program that would materially help one area would not help the other area equally.

The continued shifting of potato production, mostly away from the nearby deficit areas to the distant surplus areas, is in itself an indication of the relative advantages of potato production in these two types of production areas. Marketing and support programs often tend to hide the true nature of the problem and to either hinder the needed adjustment or to cause an overadjustment. On the other hand, improved dissemination of information on production costs and relative returns from potatoes and competing enterprises should speed the necessary and perhaps inevitable adjustments if markets are allowed to operate and if production is to seek the most efficient area.

The grower in either the declining or the growing area of production must keep informed as to his own strengths and weaknesses as well as those of his competitor if he is to continue to succeed in producing and marketing potatoes.