

AN ANALYSIS OF THE ISSUES INVOLVED IN
CHANGING THE GRAIN STANDARDS

by 45

LARRY LEE GEIL

B. S., Kansas State University, 1963

A MASTER'S REPORT

submitted in partial fulfillment of the

requirement for the degree

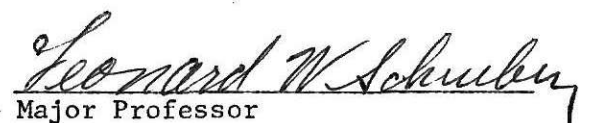
MASTER OF SCIENCE

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1969

Approved by:


Major Professor

LD
2668
R4
1969
G43

ACKNOWLEDGMENTS

The writer gratefully acknowledges the assistance of his major professor, Dr. Leonard Schruben, Professor of Agricultural Economics, Kansas State University for his guidance and encouragement in the preparation of this report.

My gratitude is also expressed to Mrs. June Carlson for her help in finding references and source material and to Mrs. Farrell Cowman for her cooperation in typing the preliminary copy.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
LIST OF TABLES	v
LIST OF ILLUSTRATIONS	vi
 Chapter	
I. INTRODUCTION	1
II. THE HISTORY AND PURPOSE OF OFFICIAL GRAIN STANDARDS.	5
III. ISSUES INVOLVING THE EFFECT GRAIN STANDARDS CHANGES WOULD HAVE ON UNITED STATES WHEAT EXPORTS.	19
The issue that changes in standards would affect the amount of U.S. Wheat Exports The issue of Canadian competition with U.S. wheat	
IV. ISSUES INVOLVING THE EFFECT GRAIN STANDARDS CHANGES WOULD HAVE ON THE PRODUCER	29
The issue that the farmer would receive an economic benefit or loss from 1964 revisions	
V. ISSUES INVOLVING THE EFFECT GRAIN STANDARDS CHANGES WOULD HAVE ON THE MARKETING TRADE INTEREST	38
The issue that the tolerance range for unsound grain or foreign material was too wide The issue as to the effect of the lower tolerance range on the exporters	
VI. UNRESOLVED ISSUES THAT MAY RESULT IN ADDITIONAL REVISIONS IN THE GRADES.	44

The issue that the present system is inadequate

The issue that standards should show milling
and baking quality

The issue of added cost resulting from the
addition of such tests as protein content
to standards

VII.	SUMMARY	58
	BIBLIOGRAPHY	64

LIST OF TABLES

Table		Page
1.	1918 Revisions in Hard Red Winter Wheat Standards	10
2.	1957 Revisions in Hard Red Winter Wheat Standards	13
3.	Monthly Average Wheat Futures Price for Specified Options for Old and New Contracts after 1957 Revisions	14
4.	Official Grain Standards of the United States for Hard Red Winter Wheat	26
5.	Maximum Limits of "Defects" Permitted in Each Grade of Wheat Under Old Standards and Under New 1964 Revised Standards	28
6.	1962 Survey of Farm Stored Wheat as Compared to U.S. Grain Standards	31
7.	Quality Factors for 1964 Wheat Samples Obtained from Farm Trucks	32
8.	Kansas Wheat Prices by Grades	35
9.	A Comparison Between Grades and Milling and Baking Properties of Carlot Receipts of Dark Hard Red Winter Wheat at Kansas City for the 1961 Crop Year	51
10.	The Kansas City Grain Market by Grades for the Week of July 11-15, 1966 and thw Week of June 3-7, 1968	53
11.	Wheat Varieties Seeded by Gluten Strength	55
12.	The Total Percent of Strong Gluten and Medium Gluten Varieties Grown in Kansas (1963-1967)	56

LIST OF ILLUSTRATIONS

Figure		Page
1.	Distribution of Hard Red Winter Wheat in 1964	4
2.	World Wheat and Flour Exports by Country (1955-1965)	20
3.	Wheat and Flour Exports Under Government- Financed Programs and Commercial (dollars) Sales	22
4.	Analysis of U.S. Wheat Exported to Europe (1949-1961)	41

I. INTRODUCTION

This report reviews the history and changes in Grain Standards. Special attention is directed to an analysis of the main issues that were presented at the 1964 hearing to consider revisions of the Grain Standards. Also, it will consider unresolved issues that may result in further revision in the grades at some future date.

In the last fifteen years the world wheat market has done an about-face from a seller's to a buyer's market. Following World War II, the need for wheat was critical in many countries. Most overseas buyers did not make special demands related to protein content, mixing strength, less cleanout, or other quality characteristics. Those who could afford it bought Canadian Manitoba to provide milling and baking quality in their blends.

The picture began to change about 1954. Wheat production increased in deficit areas. France and Italy began to produce more than enough to meet domestic requirements. The economies of devastated countries like Japan and Germany recovered rapidly and they became the second and third largest dollar markets in U.S. wheat. Both are now in a position to buy the types and quality wheat they want. Since 1957, Japan has been the most important dollar market for U.S. wheat. The U.S. share of the market has fallen from 68 percent in 1954 to 40 percent in 1962. During this same period, cash sales of Canadian hard wheat to Japan have risen by 20 to 30 percent.

The U.S. is the world's leading wheat exporter. However, about 70 percent of our export wheat moves under government-financed assistance programs. It supplies about 45 percent of the world market, and Canada about 22.5 percent. Canadian dollar sales of wheat, however, exceed U.S. dollar sales by almost 50 percent.

The International Wheat Agreement sets floor and ceiling prices for commercial transactions. Also, the U.S. has followed a policy of keeping prices competitive without trying to take markets away from traditional suppliers. Therefore, the major competitive aspect becomes one of quality and price combination.

The primary purpose of the Grain Standards is to aid in the trade of grain. At the 1964 Department of Agriculture Standards hearings it was suggested that the U.S. Grading Standards for wheat were not adequate to meet the quality competition of the world market.

In 1964 new grading standards were put into effect by the Secretary of Agriculture. In general these new standards changed the official U.S. standards for grades of wheat by reducing the amount of foreign material and dockage in each grade. Thus quality factors of weight, soundness, the cleanness are more readily and more precisely reflected in the grades.

This report will attempt to analyze the three issues that developed during the Department of Agricultural hearings on Grain Standards. These hearings were held in 1963 and resulted in the adoption of the 1964 Revised Grain Standards.

The three main issues that emerged from these hearings concerned the following:

1. Issues involving the effect grain standards changes would have on United States wheat exports.
2. Issues involving the effect grain standards changes would have on the producer.
3. Issues involving the effect grain standards changes would have on the marketing trade interest.

Information and data for this report have been collected from the 1964 Department of Agriculture hearings on changes in the Grain Standards¹, files of Great Plains Wheat, Inc.², Carlot Receipts of Wheat³, Kansas Wheat Quality Reports⁴ and Kansas Statistical Reporting Service⁵.

This report will be concerned with those standards pertaining to Hard Red Winter Wheat produced in the area between the Rocky Mountains and the Mississippi River. See Figure 1.

¹"Hearing On Proposed Changes In Wheat Standards", Kansas City, Missouri, October, 1963; Minneapolis, Minnesota, October 4, 1963; Portland, Oregon, October 8, 1963; Toledo, Ohio, October 11, 1963; Grain Division, Agricultural Marketing Service, U.S.D.A., Washington, D.C. 20250.

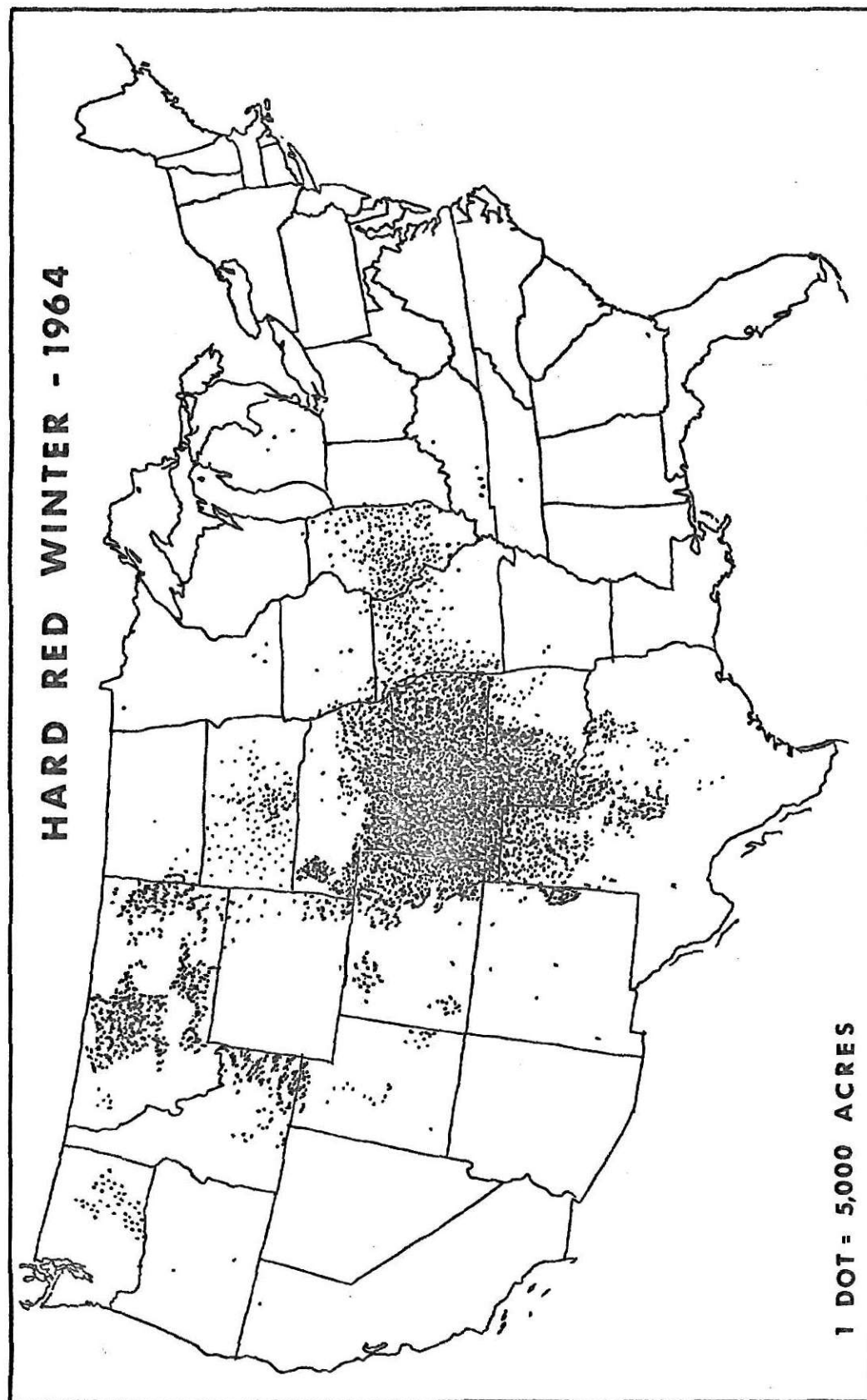
²Files of Great Plains Wheat Inc., Great Plains Wheat Inc., Kansas City, Kansas.

³Physical, Chemical, Milling, and Baking Properties of Carlot Receipts of Wheat, Grain Division, Agricultural Marketing Service, U.S.D.A. (AM 5-356, 1957-1967).

⁴Kansas Wheat Quality Reports, Kansas State Board of Agriculture, Topeka, Kansas (1962-1967).

⁵Kansas Crop and Livestock Reporting Service, U.S.D.A. Statistical Reporting Service; Kansas State Board of Agriculture, Division of Statistics; 200 Federal Building, Topeka, Kansas.

Figure 1. Distribution of Hard Red Winter Wheat in 1964.
Estimated area, 31,754,902 acres.



II. THE HISTORY AND PURPOSE OF THE OFFICIAL GRAIN STANDARDS

The grain standards of the United States have evolved with the development of the grain industry. Although changes and improvements have been made in the grain standards, there has not been an orderly development. This is due to the lack of a periodic review of the standards. Changes have occurred only when enough interest has been generated to encourage revisions. The original standards for wheat were established in 1917 and the latest revisions were made in 1964.

The need for uniform grain standards became apparent with the development of the transportation system. The difficult problem was how to get two parties to a contract, thousands of miles apart, to arrive at a satisfactory meeting of minds as to the quality and condition of a commodity which one party desired to sell to his own best advantage and the other party in turn was anxious to buy, also to his best advantage. For a time in the nineteenth century this problem was solved by the exchange of a fair, honest and truly representative sample of the goods.¹ But this method of trade soon resulted in a second problem. Who was to determine that the sample was representative of the shipment? Further, if the receiving party was not satisfied, who was to be the arbiter? Also, trading by sample would not meet the needs of trading in wheat futures, which was developing.

¹Edward J. Murphy, "The History and Philosophy of Grain Standards in the U.S.," The Northwestern Miller, May 10, 1955, p. 10.

The sampling method presented the need for an impartial and unbiased person to settle disagreements between buyers and sellers where shipments had been sold and purchased by means of a sample. Because the buyer needed to be assured that the sample was representative of the grain to be shipped, the impartial and unbiased inspector entered the picture.

As more and more sales were made by sample, it became apparent that other factors of quality and conditions could be readily made (though crudely measured) and could be written on tags and sent with the sample. This information included such things as test weight, foreign material, damaged kernels, and moisture content. These were some of the more easily measured factors of quality. As more measurable factors of quality were developed, the use of sample for trading was replaced by the "type" transaction or measurable quality factors.

With the development of forward sales -- and later futures trading -- frequently involved grain not yet harvested and indeed not yet planted, the "sample" method of trading between parties at long range gave way to the "type" transaction.¹

With the development of the grain industry a pattern of grades or standards began to emerge. Definite written specifications and descriptions with minimum requirements on desirable qualities and maximum allowances on undesirable qualities formed the structure with a series of grades designed to classify the entire range of the quality and condition of the crop from the best to the poorest. This did not do away with the use of samples, particularly on the trading floor of

¹Ibid., p. 10.

consignment markets. A sample of the commodity in kind was used to supplement and check grading information, but the basis of the contract was the printed and published grade.¹

With this development of the grain trade, grain exchanges, boards of trade and chambers of commerce were formed to provide a meeting and dealing place for grain dealers and processors who would make a market for the producer's grain and an outlet for it in the channels of distribution. The grain exchanges and several of the surplus grain producing states had adopted a descriptive series of grades or standards. They embodied those attributes or factors which could be readily determined by an experienced and skilled inspector.²

The procedure for grading grain was different for each grain exchange and there was little or no relationship between the written or published grade requirements of the different inspection and grading agencies. Different terminology and application were also used which sometimes led to an inconsistency in grading. During the years of short crops and poor crops a certain type of wheat was graded No. 1, while in a good crop year this same type was graded No. 2 or lower.

Because of the confusion in the grading of grain by the various grain agencies, and because of growing complaint from overseas buyers as to the grading system used in this country, a bill was introduced in Congress in 1903 to correct the abuses and injustices in grain marketing. But, it was another thirteen years before a federal grading

¹Ibid., p. 10.

²Ibid., p. 10.

system was established. The reason for the delay was that the grain trade was not united and many exchanges did not want any intervention from the federal government. Also, they feared that federal inspection would replace the grain inspection that they now supplied, resulting in a loss of revenue to the grain exchanges. Also, at this time the question of states rights and the power of the federal government to regulate interstate commerce was much more restricted than that which prevails today.¹

In 1906 Congress enacted the Meat Inspection Act and the Food and Drug Act. Neither of these acts established standards for the grading of grain, but each placed the processors or manufacturers of a product in a position where they were responsible for any grading claims that were made for their products.² Therefore, during World War I when there was a heavy demand for oats, and barley was cheaper than oats, the federal government seized and confiscated carload lots of oats that were from 15 to 20 percent barley.

Many carload lots were seized as adulterated and after confiscated to the federal government were released under bond to be sold for what they were. The claimants paid the costs of court plus attorney's fees. Here again was a lack of understanding of trade terms or a failure of descriptive terms to identify the commodity. These differences between groups with convictions -- and there was much to be said on both sides -- resolved themselves with the enactment by Congress and the approval of the President, of the U.S. Grain Standards Act on August 11, 1916.³

¹Ibid., p. 11.

²Marketing Research Report, "Economic Effects of U.S. Grades for Beef," U.S.D.A., (No. 298), pp. 1-12.

³Murphy, op. cit., p. 11.

Since 1916 the standards for the various grains have been revised or amended from time to time. In 1918 the standards were revised for wheat. These revisions are given in Table 1 for Hard Red Winter Wheat. In general, the 1918 revisions resulted in a larger range of tolerance for each grade. Therefore, the quality that wheat must have to be graded No. 2 in the 1916 standard now would grade No. 1. These changes allowed for more damaged kernels, heat-damaged kernels, foreign material, wheat of other classes, and more moisture in all of the grades.¹

Support for the 1918 grain standards revisions came from the grain exchanges and grain exporters. During the period after World War I there was a large demand for wheat and it was a seller market. Because much of Europe's wheat production had been stopped during the war, U.S. exports of wheat to Europe were at a high level. And because of this great demand for wheat, the quality of each grade could be lower and not affect the demand for U.S. wheat. Therefore the quality standards for each grade were lower. This lowering of standards had little effect on U.S. exports as long as there was no world surplus of wheat. Also, the lower quality standards of U.S. wheat grades allowed for more foreign material in each grade. Thus, if there were not a price discount because of foreign material, there was room for greater profits on wheat sold to foreign countries, when the grade was determined by the Grain Standards of the United States.

¹Historical Review of Changes in the Grain Standards of the United States, U.S.D.A. (AM 5 - 513, September, 1963), pp. 5-7.

TABLE 1
1918 REVISIONS IN HARD RED WINTER WHEAT STANDARDS^a

	From	To
Dark, hard and vitreous kernels:		
Dark Hard Winter	90%	80%
No. 1 Dark Hard Winter	95%	80%
Minimum test weight per bushel:		
No. 1	61	60
No. 2	59	58
No. 3	57	56
No. 4	55	54
No. 5	53	52
Damaged Kernel:		
No. 1	1%	2%
Heat damaged kernel:		
No. 1	0.0%	.1%
No. 2	0.1%	0.2%
Foreign material other than dockage:		
No. 1	0.5%	1%
No. 2	1%	2%
No. 3	2%	3%
No. 4	4%	5%
No. 5	6%	7%
Matter other than cereal grains:		
No. 1	0.25%	0.5%
No. 2	.5%	1.0%
No. 3	1%	2.0%
No. 4	2%	3.0%
No. 5	3%	5.0%
Maximum limits of wheat of other classes:		
No. 1	2%	5%
No. 2	4%	10%
No. 3	6%	10%
Maximum limits of common white, white club and durum wheat singly or combined:		
No. 1	1%	2%
No. 2	2%	5%
No. 3	3%	10%
No. 4	5%	10%
No. 5	5%	10%

TABLE 1 Continued

	From	To
Maximum moisture limits:		
No. 1	13%	13.5%
No. 2	13%	14.0%
No. 3	14%	14.5%
No. 4	14%	15.5%
No. 5	15%	15.5%

Other changes:

Added a grade for Garlicky Wheat, Treated Wheat and Smutty Wheat and changed the method of expressing the grades for mixed wheat.

Excluded immer, spelt and unknown from the definition for wheat.

Changed the method of expressing dockage from whole and halves of a percent to whole percents.

^aData from Historical Review of Changes in the Grain Standards of the United States, Agricultural Market Service, Grain Division, U.S.D.A, (AM 5-513, September, 1963).

Minor revisions were made in the grain standards from 1918 to 1957. Most of the revisions were changes in terminology and did not have much influence on the marketing of wheat. The 1957 revisions were more important because they began to change the quality of the wheat in each grade. These changes are given in Table 2. Changes such as lowering the amount of foreign material in wheat resulted from the wheat surplus and increased competition for foreign markets. Furthermore, better equipment and better methods had come into use in producing, harvesting, transporting, storing, cleaning and drying grain. As a result of these better methods, U.S. wheat delivered at country points and received at terminal markets should have been cleaner. Table 3 gives the monthly average futures price for old contracts and new contracts. The new contracts were grades under the 1957 revisions. The result was an increase in price, under the new standards, from one half cent to two cents.

The inspection provisions of 1916 have changed very little over the years. The Act provided for supervision of inspections performed by licensed inspectors, with appeal to the federal government. The Act did not provide for original inspection by Federal employees, except in the case of a dispute on uninspected grain. The Act provided only for federal supervision of inspection for grain in interstate commerce. Inspectors are Federally licensed, but these inspectors are actually employees of grain inspection departments, of inspection departments of organized grain exchanges, or are local market inspectors deriving their income from fees. It is required that grain sold by grade should be inspected by a licensed inspector and the

TABLE 2
1957 REVISIONS IN HARD RED WINTER WHEAT STANDARDS^a

	Percent From	Percent To
Maximum limits of foreign material:		
Grade No. 1	1	0.5
Grade No. 2	2	1.0
Grade No. 3	3	2.0
Grade No. 4	5	3.0
Grade No. 5	7	5.0
Maximum limits of shrunken and broken kernels:		
Grade No. 1	7	5
Grade No. 2	7	5
Grade No. 3	10	8
Maximum limits of "wheat of other classes":		
Grade No. 2	10	5
Minimum limits of dark, hard and vitreous kernels:		
Subclass Hard Winter Wheat	25	10
Other changes:		
Eliminated the factor "matter except other grains"		
Provided that "distinctly low quality" be determined on the basis of the grain as a whole		

^aData from Historical Review of Changes in the Grain Standards of the United States, Agricultural Marketing Service, Grain Division, U.S.D.A., (AM 5-513, September, 1963).

TABLE 3

MONTHLY AVERAGE WHEAT FUTURES PRICE FOR SPECIFIED OPTIONS
FOR OLD AND NEW CONTRACTS AFTER 1957 REVISIONS^a

	Old Contract	New Contract	Premiums of New over Old
<u>AT CHICAGO:</u>			
1957 September			
Futures:			
In May	\$ 2.09 1/2	\$ 2.10	+ 1/2 cent
In June	2.08 1/4	2.08 5/8	+ 3/8 cent
In July	2.15 1/4	2.15 5/8	+ 3/8 cent
In August	2.16 1/4	2.16 7/8	+ 5/8 cent
In September	2.15 1/2	2/15 3/4	+ 1/4 cent
1957 December			
Futures:			
In May	2.13 5/8	2.14 1/4	+ 5/8 cent
In June	2.13 1/8	2.13 3/4	+ 5/8 cent
In July	2.19 1/4	2.20	+ 3/4 cent
In August	2.22	2.22 5/8	+ 5/8 cent
In September	2.19 1/4	2.19 3/4	+ 1/2 cent
In October	2.17	2.18	+ 1 cent
In November	2.17 7/8	2.19 1/8	+ 1 1/4 cent
In December	2.18 3/8	2.18 7/8	+ 1/2 cent
<u>AT MINNEAPOLIS:</u>			
1957 July Futures:			
In April	2.26 5/8	2.27 1/4	+ 5/8 cent
In May	2.18	2.18 7/8	+ 7/8 cent
In June	2.19 1/8	2.19 1/2	+ 3/8 cent
In July	2.27 1/8	2.28 7/8	+ 1 3/4 cent
1957 September			
Futures:			
In April	2.24 5/8	2.25 1/4	+ 5/8 cent
In May	2.16 1/8	2.16 3/4	+ 5/8 cent
In June	2.17 1/4	2.17 5/8	+ 3/8 cent
<u>AT KANSAS CITY:</u>			
1957 July Hard			
Futures:			
In April	2.14 5/8	2.15	+ 3/8 cent
In May	2.07 1/2	2.08 1/8	+ 5/8 cent
In June	2.07 1/8	2.07 5/8	+ 1/2 cent
In July	2.11 1/2	2.11 7/8	+ 3/8 cent
1957 September Hard			
Futures:			
In April	2.16 7/8	2.17 1/2	+ 5/8 cent
In May	2.09 7/8	2.11	+ 1 1/8 cent
1957 December Hard			
Futures:			
In April	2.18 1/8	2.20 1/8	+ 2 cent
In May	2.13 1/4	2.14 1/8	+ 7/8 cent

^aBackground On Improved Standards For Wheat, U.S.D.A.
(January 22, 1964), p. 7.

grades used should be the federal grades. Provisions are made to exempt from the inspection requirements shipments made between points at which no licensed inspector is located, and also to permit sales by sample, by type or by description which is not false or misleading and does not infringe on the terms of the official standards.¹

Appeals may be made by any party of interest who may question the grade established by the licensed inspector. A federal force is authorized to handle appeals and to determine the true grade under the standards. Further the findings on appeals are accepted as prima facie evidence in U.S. Courts. Criminal provisions and sanctions are designed to prevent fraud and misrepresentation and to protect the integrity of the service.²

Ideally, any grading system should promote the general welfare of the industry it affects. It should provide a common language between buyer and seller so that both parties can deal with confidence even though they are separated by thousands of miles. A grading system should facilitate movement of products from the producer to the ultimate consumer, and should prevent misrepresentations and speed up settlement of claims. The grading system should describe the product so that the seller is assured of a fair price and that the buyer knows what he is getting and how he can utilize the product.

¹Deane W. Malott, Grain and Its Marketing, Grain Exchange Institute, Inc., 1947, pp. 121-122.

²Ibid., p. 122-125.

Grades also provide market intelligence. They should reflect market conditions when prices are geared to quality factors and provide the buyer and seller with information on production and market trends. The producer, armed with information regarding market trends and pricing structure, is then in a position to plan his program to best advantage.¹

The principal objective of an ideal standard should be to aid the consumer in telling the producer what he considers desirable in a product for the particular use to be made of it.²

Because one of the purposes of grain standards is to facilitate trade, they must be simple and understandable. They need to be applicable at all levels of the grain trade, from the producer to the miller. They must give a good picture of the quality and condition of the grain under inspection for the guidance of the buyer and the essential uses to which it will be put, whether for feeding or manufacture and processing into human food.³

The grading system should be an effective sales tool. Any wheat buyer is motivated by three things: (1) An accurate, precise measure of the wheat in an end-use situation. If the wheat is chiefly noted as a bread wheat, the buyer will want information on baking strength -- information which can be obtained by such measures as protein content, sedimentation value, Farinograph curve and other measurements of baking strength. (2) An assurance of a high net yield of usable product which will allow the buyer to put out a marketable product and to make a profit. (3) An attractive "Shelf-appearance."

¹Farmers Stake in the Grain Standards, Great Plains Wheat, Inc., 1963, p. 5.

²Richard L. Kohls, Marketing of Agricultural Products (New York: The MacMillan Co., 1955), p. 139.

³Murphy, op. cit., p. 26.

This is a recognized and accepted merchandise technique which is utilized widely in advertising, promotion and salesmanship. An effective marketing system will maintain or improve the quality and "shelf-appearance" of a product as it moves from producer to consumer. It is traditional for the handler to perform a service which will improve the marketability of the product.¹

The economic impact of good grain standards on the industry are numerous and most difficult to measure in numerical dollar values.

Uniform grades and standards exert their influence through increasing knowledge about the product. More knowledge increases price competition. When markets become more perfectly competitive, consumer demands tend to be reflected more accurately back to producers. Rewards to producers are more in accordance with consumer evaluation of quality attributes contained in products marketed.²

Standards should facilitate trade by making it possible to deal in quantities of a commodity more easily and efficiently.

Advantages include more meaningful price quotations, and ability to trade on the basis of sample or description, and the pooling or mingling of products. Uniform grades and standards thereby facilitate the performance of such marketing functions as financing, transportation and storage.³

Grain standards should also improve the competitive position of U.S. wheat in the world market and thus increase sales to overseas customers. A good grading system will introduce better marketing efficiency, and producers will make a better supply response in the delivery of better wheat on quality characteristics. This should

¹Farmers, op. cit., p. 7.

²Paul L. Farris, "Uniform Grades and Standards, Product Differentiation and Product Development," Journal of Farm Economics, (Vol. 42, December 1960), p. 854.

³Farris, op. cit., p. 855.

strengthen the price of wheat for the farmer who grows quality wheat.

Also, good standards should enable the Commodity Credit Corporation to better guarantee the quality of grain owned by the public.

III.

ISSUES INVOLVING THE EFFECT GRAIN STANDARDS
CHANGES WOULD HAVE ON UNITED STATES WHEAT EXPORTS

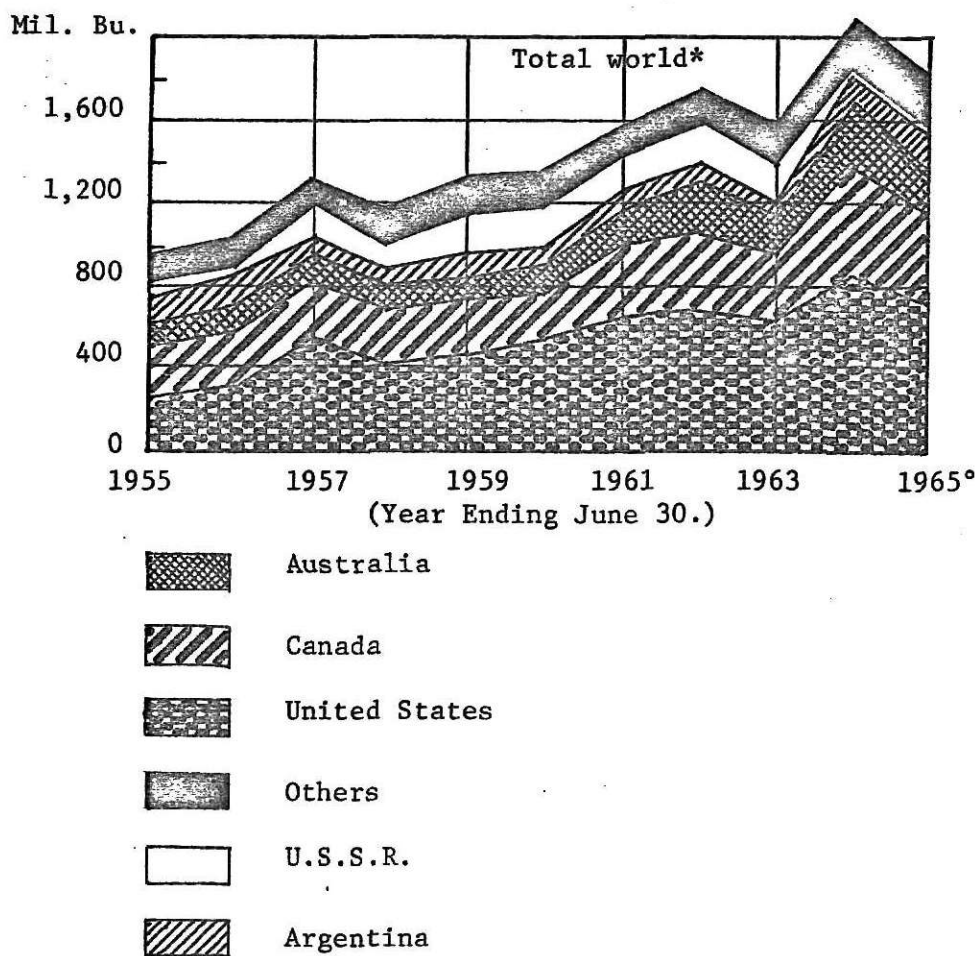
Supporters of the 1964 revisions maintained that the revisions would improve the competitive quality position of United States Wheat in the foreign markets. Opponents of the revisions advocated that the standards were adequate and that the proposed revisions would slow down the marketing and exporting of grain and would be an added cost.

Wheat is an international commodity which moves in world trade more than any other farm product, and it is used more widely throughout the world than any other food. The United States has been a major exporter of wheat since the beginning of this century, and exports have supplied an increasing portion of the U.S. grower's income. In dollar value, wheat is our leading agricultural export. In fact, we export more than half of our total wheat output. So the U.S. producer has more foreign customers than domestic.

The total annual exports are currently in a range between 600 and 800 million bushels. U.S. wheat exports have varied considerably since this country entered the world wheat trade picture. Since World War II the United States has been the leading wheat exporter, except in 1953 and 1954 when Canada took first place. The U.S. share of the world trade has ranged from a low of 32 percent in 1954 to a high of 52 percent in both 1947 and 1957.¹ Figure 2 shows the wheat and flour exports for six major wheat exporting countries.

¹Edward F. Seeborg, "The Future of U.S. Wheat in World Trade," Grain and Feed Division Foreign Agricultural Service, (Vol. XXVI, No. 9 September 1962), p. 1.

Figure 2. WORLD WHEAT AND FLOUR EXPORTS
BY COUNTRY (1955 - 1965)



° Preliminary

* Includes Wheat Equivalent of Flour

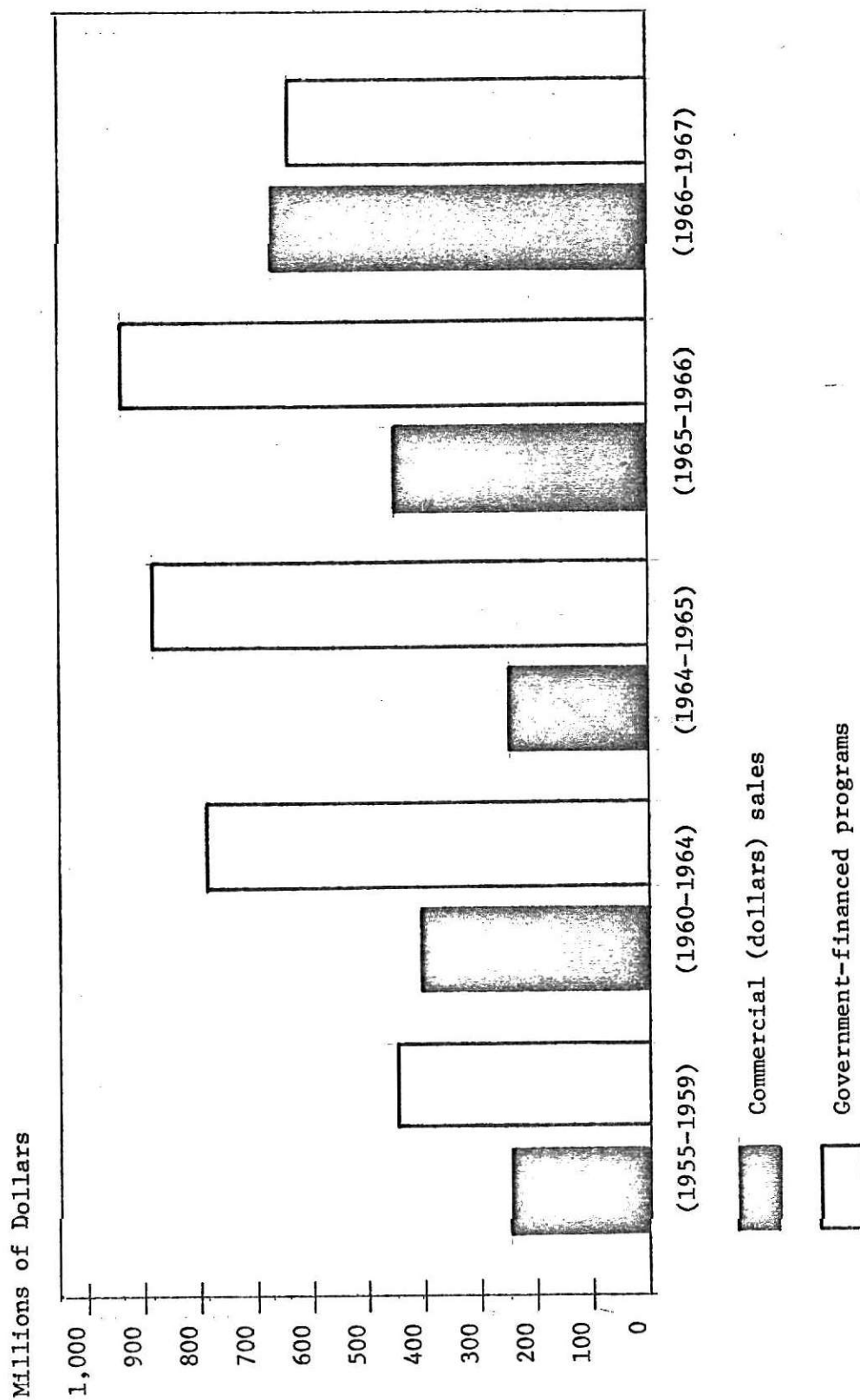
A large quantity of wheat exported by the United States has been under various foreign assistance programs such as the Marshall Plan and Food for Peace. Approximately 70 percent of U.S. sales in 1960 and 1961 were under these foreign assistance programs. Thus, while the United States is now by far the most important supplier in total tonnage to all markets, Canadian sales of wheat in dollars surpass U.S. dollar sales by almost 50 percent.¹ Figure 3 shows the value of wheat and flour shipped under government-financed programs and commercial sales. In the years 1966 and 1967 about 50 percent was for commercial (dollar) sales.

At the Department of Agriculture Standards hearing on the proposed changes in the grain standards, there was much debate about the quality of Canadian wheat and its competition with the sale of U.S. wheat. Pete Stallcop, Executive Secretary of the Northwest Country Elevator Association and a representative of opposition to the revised standards, stated that U.S. wheat cannot be compared with Canadian wheat. He made the following statement to this effect:

Canada as you know, produces Hard Red Spring Wheat and Durum, and these can be logically compared to the Hard Red Spring Wheat and Durum grown in this Northwest area. They cannot be compared with our White Wheat, Hard Red Winter Wheat, or Soft Red Winter Wheat. Furthermore, Canada exports only recleaned wheat, and it is not proposed--even in the suggested changes, that we go to a reclean basis. So--the foreign buyer will still have a basis for unfavorable comparison of our wheat exports with those of Canada. Furthermore, little or nothing is said about the fact that our exporters can and will gladly furnish foreign buyers any quality of wheat they want.

¹Ibid., p. 1

Fig. 3. Wheat and Flour Exports Under Government -
Financed Programs and Commercial (Dollars) Sales



^aData from Foreign Agricultural Trade of the United States, Economic Research Service, U.S.D.A., (May 1968), p. 5.

In fact, our exporters have offered foreign buyers wheat as clean and of as good quality as that of Canada. Yet the foreigner invariably buys a poorer quality of grain from us--at a lesser price. While the proponents say revising our grain standards will increase exports, they are silent on the fact that they do not expect the foreign buyer to pay any more for better quality grain. In other words, we will be giving them better quality for the same price. With the narrow margins that exist in the grain trade, there is only one place where this increased cost will go--and that is back to the producer.¹

There was discussion at the hearing as to whether or not a foreign buyer could purchase any quality or kind of wheat he desires under the old grading system. Clifford R. Hope of Great Plains Wheat presented this statement.

Under our present grading system with its broad tolerances he can't do it if he orders by grade alone. He must write specifications which he doesn't like to do and isn't used to doing. Furthermore, it isn't necessary to do it because he can go to Canada and order by grade -- and he knows what he is going to get.

On occasion our European office has succeeded in persuading buyers to write specifications but the results have been disappointing because in practically all cases this required special handling and the resulting prices were not competitive with the same quality available elsewhere.²

Ron Kennedy, a representative of the Grain and Feed Dealers National Association, and an opponent of change in the old system, stated that this system allowed the U.S. to sell a wide variety of qualities of wheat and that this helps to account for our great wheat exports record.

¹Pete Stallcop, "Proposed Changes in Wheat Standard", Statement for Northwest Country Elevator Association, U.S.D.A. Hearing, Minneapolis, Minnesota, (Oct. 4, 1963), p. 3.

²Clifford R. Hope, "Statement Grain Standard Hearing", Minneapolis, Minnesota, (Oct. 4, 1963), pp. 13-14.

Our nearest competitors, Canada, where they have a government-controlled wheat monopoly, and pool all their wheat into one mass, can offer no such selection. The Canadian Wheat Board frankly acknowledges this disadvantage when it said in its last annual report that its export sales were handicapped by lack of availability of lower grades of wheat.¹

Herbert J. Hughes, Chairman of the Grain Standard Committee of Great Plains Wheat, Inc., gave the following reasons for Canada's abilities to maintain a large proportion of the foreign cash market.

1. Canada keeps tight control on the quality of its export shipments. Each year's crop is drawn into large pools, and uniform grades are established. The wheat is "cleaned until clean" which means simply that everything possible is done to remove anything which would detract from milling quality.

2. Canada's lavish care of their export markets pays off in satisfied customers. There is no risk for the buyer; he knows there will be little "cleanout" to worry about. Moreover, if he orders Manitoba No. 2 in April and again in July, quality will be almost identical.

3. Canada keeps the export market informed with current data on the quality of each year's crop. Data on milling and baking quality is readily available.

4. Canada wheat men do a good job of merchandising their wheat according to market demands in Europe and other cash markets. Wheat mostly is grown in a relatively small part of Canada, and the number of varieties is fairly limited, thus easing Canada's problem of producing a uniform-quality crop. Because of the reputation Manitoba has earned, Canada enjoys a priceless advantage.²

There was no agreement at the hearing as to the effect the revised standards would have on the competition of U.S. wheat with Canadian wheat.

¹Ron Kennedy, "On Proposed Changes in Wheat Standards", U.S.D.A. Hearing, Minneapolis, Minnesota (Oct. 4, 1963), p. 5.

²Herbert J. Hughes, Farmer Stake in the Grain Standards, Great Plain Wheat, Inc., 1963, p. 4.

At the time of the 1964 revisions we were getting tough competition from Russia as well. The Soviet Union was making a determined effort to expand production on new land opened for farming. Also it was upgrading its exports in an effort to establish a reputation as a supplier of quality wheat. Argentina and Australia also were doing their utmost to boost exports because wheat sales furnish a major share of these countries' earnings of foreign exchange.¹ Therefore, all of our competitors were doing all they could to win customers and expand markets. The one place where they seemed to be ahead of the United States was in their grain standards and in the range of tolerance for each grade.

In general the 1964 revisions resulted in a narrower range of tolerance for each grade. This meant less foreign matter and dockage in American wheat. The old standards has too great a tolerance within grades to provide a reliable basis for judging soundness or cleanliness. The following changes were made in the Hard Winter Wheat standard.

Maximum limits were set for "total defects" in each numerical grade. "Defects" are damaged kernels, foreign material that cannot be removed readily by cleaning, and shrunken and broken kernels. The old standards contained no limits on the total of the maximum limits for each of these three factors. The change established a limit for total defects in U.S. No. 1 grade at 3 percent, in No. 2 grade at 5 percent with corresponding limits in the other grades. Limits for "Shrunken and broken kernels" were lowered from 5 to 3 percent for grade No. 1.

¹Ibid., p. 4.

OVERSIZED DOCUMENT

**THE FOLLOWING DOCUMENTS ARE BEING
FILMED IN SECTIONS.**

**THE FOLLOWING IMAGES WILL BE TAKEN
FROM LEFT TO RIGHT, TOP TO BOTTOM.
SEE EXAMPLE BELOW:**

1	2	3
4	5	6
7	8	9

TABLE 4

OFFICIAL GRAIN STANDARDS OF THE UNITED STATES FOR HARD RED WINTER WHEAT

Old Grade Requirements

Grade	Minimum test weight per bushel	Maximum limits of					
		Damaged Kernels		Foreign Material	Wheats of other classes		
		Total	Heat damaged kernels		Total	Durum and/or Red Durum	
		Pounds	Percent	Percent	Percent	Percent	Percent
	60	2.0	0.1	0.5	5.0	0.5	
	58	4.0	0.2	1.0	5.0	1.0	
	56	7.0	0.5	2.0	10.0	2.0	
	54	10.0	1.0	3.0	10.0	10.0	
	51	15.0	3.0	5.0	10.0	10.0	

Sample

grade --Sample grade shall be wheat which does not meet the requirements for any of the grades from No. 1 to No. 5, inclusive; or which contains more than 15.5 percent of moisture; or which contains stones; or which is musty, or sour, or heating; or which has any commercially objectionable foreign odor except of smut or garlic; or which contains a quantity of smut so great that any one or more of the grade requirements cannot be applied accurately; or which is otherwise of distinctly low quality.

¹The wheat in grades No. 1 and No. 2 of this class may contain not more than 5.0 percent and in grade No. 3 not more than 8.0 percent of shrunken and broken kernels.

grade requirements cannot be applied accurately; or which is otherwise of distinctly low quality.

¹The wheat in grades No. 1 and No. 2 of this class may contain not more than 5.0 percent and in grade No. 3 not more than 8.0 percent of shrunken and broken kernels.

1964 Revised Grade Requirements

Maximum limits of

Grade	Minimum test weight per bushel	Defects					Wheat of other classes	
		Heat- damaged kernels	Damaged kernels (total)	Foreign material	Shrunken & broken kernels	Defects (total)	Con- trasting classes ¹	Wheat of other classes (total)
	Pounds	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1	60.0	0.1	2.0	0.5	3.0	3.0	0.5	3.0
2	58.0	0.2	4.0	1.0	5.0	5.0	1.0	5.0
3	56.0	0.5	7.0	2.0	8.0	8.0	2.0	10.0
4	54.0	1.0	10.0	3.0	12.0	12.0	10.0	10.0
5	51.0	3.0	15.0	5.0	20.0	20.0	10.0	10.0

Sample

grade --Sample grade shall be wheat which does not meet the requirements for any of the grade from No. 1 to No. 5, inclusive; or which contains stones; or which is musty, or sour, or heating; or which has any commercially objectionable foreign odor except or smut or garlic; or which contains a quantity of smut so great that any one or more of the grade requirements cannot be applied accurately; or which is otherwise of distinctly low quality.

¹Contrasting classes = Durum Wheat, Red Durum, White

END

OF

OVERSIZED

DOCUMENT

Limits for grades No. 2 and 3 remained at 5 and 8 percent. Maximum limits for shrunken and broken kernels were set for the first time at 12 percent for grade No. 4 and 20 percent for grade No. 5.

The minimum moisture content for wheat graded as "tough" was reduced from 14 to 13.5 percent for hard red winter wheat. The change also eliminated moisture as a factor in determining "sample grade." The 1964 revision recorded "dockage" in intervals of one-half percent. Fractions other than one-half were reduced to the next lower half or whole percent. (Dockage is material other than wheat which can be removed readily by cleaning. It is not considered as a factor in determining grade, but it is recorded on inspection certificates.)

Under old standards, dockage -- when amounting to one percent or more -- was recorded at the next lower whole percent; fractions were reduced to the nearest whole percent. A special grade of "Heavy Wheat" is applied to grades No. 1, 2, and 3 as an indicator of quality in order to recognize superior test weights. The maximum limit for wheat of other classes for grade No. 1 was reduced from 5 to 3 percent. More restrictive limits were provided in all grades for "contrasting classes."¹

¹"Changes In Wheat Standards," Agricultural Marketing Service U.S.D.A., 1964, pp. 6-8.

TABLE 5

MAXIMUM LIMITS OF "DEFECTS" PERMITTED IN EACH GRADE OF WHEAT
UNDER OLD STANDARDS AND UNDER NEW 1964 REVISED STANDARDS^a

MAXIMUM DEFECTS PERMITTED

	<u>No. 1</u>		<u>No. 2</u>		<u>No. 3</u>		<u>No. 4</u>		<u>No. 5</u>	
	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>	<u>New</u>
Damaged kernels	2.0	2.0	4	4	7	7	10	10	15	15
Foreign material	0.5	0.5	1	1	2	2	3	3	5	5
Shrunken and broken kernels	5.0	3.0	5	5	8	8	*	12	*	20
Total defects	7.5	3.0	10	5	17	8	*	12	*	20

* No limits

"Total defects" consists of damaged kernels, foreign material, and shrunken and broken kernels.

While limits are set for "total defects," some limits are also changed or set for the individual

defects. Any wheat that exceeds the limits shown in the table for grade No. 5 is graded "Sample grade."

^a Changes In Wheat Standards, Agricultural Marketing Service, U.S.D.A. (March 1964), p. 10.

IV.
ISSUES INVOLVING THE EFFECT GRAIN STANDARDS
CHANGES WOULD HAVE ON THE PRODUCER

The issue involved here was whether the farmer would receive an economic benefit or loss from the 1964 revisions. Those opposed to the revisions maintained that the producer would be required to accept a discount because his wheat would be graded lower under the new standards. Supporters of the revisions stated that the producer would benefit as a result of U.S. wheat becoming more competitive in the world markets because of the narrowing of the range of tolerance for each grade. They also stated that the wheat being produced by the farmer would not be graded down under the new standards.

Because of the complexity of the marketing system (including such things as; the International Grain Agreement, wheat subsidy, the control by the Commodity Credit Corporation of grain surpluses, U.S. wheat sales under various foreign assistance programs, and changes in supplies of wheat in the U.S. due to the effect of weather on production) it is very difficult to show a numerical increase in the demand for U.S. wheat as a result of the revised grain standards. Because U.S. competitors are constantly trying to improve the quality of their wheat by improving their standards, the 1964 revisions may have just kept us even with the competition for foreign exports.

The 1964 revisions have had no effect on the grade of wheat that the farmer delivers to the local elevator. This is because the farmers were already marketing wheat that would take up just about half of the tolerance for maximum defects under the new standard.¹

¹"Grain Standards Special featuring Highlights of the Hearing," From the files of Great Plains Wheat, Inc., 1964, p. 2.

There was no change made in the test weights per bushel for each grade in the revised standard. A study of carlot receipts of wheat and Kansas Wheat Quality Reports indicated that test weight is the main grading factor which causes a sample of wheat to be downgraded. Table 6 is a survey of farm stored wheat as compared to the 1964 revised grain standards. The table indicates that there was no adverse effects on the wheat producers. Table 7, a quality test of 756 samples of wheat obtained at country points by county agricultural agents, indicates that grade defects in wheat coming from Kansas farms in 1964 were well below the tolerance level for grade 1 wheat.

Results of the farm truck survey recorded an average dockage of only 0.26 percent for the 1964 Kansas crop and 0.41 percent for the 1965 crop. Grade defects averaged 1.8 percent -- very close to data tabulated for carload lots at terminal market. Total defects included 0.1 percent damaged kernels, 0.1 percent foreign material and 1.6 percent shrunken and broken kernels. Survey results show an average test weight per bushel of 60.9 pounds compared with the terminal market average of 61.2 pounds.¹ These quality tests show that the average sample of wheat at country points is well below the tolerance level for defects as stated in the present standards for grade 1 wheat.

At the time the 1964 revisions were proposed, a part of the organized grain trade in this country vigorously opposed the revisions. They argued that the proposed revisions would result in lower prices to farmers.

¹Garry D. Kepley and John L. Wilson, Kansas Wheat Quality in 1967, Kansas State Board of Agriculture, Kansas Wheat Commission, p. 21.

OVERSIZED DOCUMENT

**THE FOLLOWING DOCUMENTS ARE BEING
FILMED IN SECTIONS.**

**THE FOLLOWING IMAGES WILL BE TAKEN
FROM LEFT TO RIGHT, TOP TO BOTTOM.
SEE EXAMPLE BELOW:**

1	2	3
4	5	6
7	8	9

TABLE 6

1962 SURVEY OF FARM STORED WHEAT AS COMPARED TO U.S. GRAIN STANDARDS^a

	Test Weight	Dockage	Shrunken & Broken	Total Damage	Foreign Material	Wheat of other Classes
NORTH DAKOTA	59.4 lbs.	1.25%	.73%	.42%	.31%	.11%
KANSAS	60.7 lbs.	.29%	.9%	.4%	.1%	none
NEBRASKA	57.3 lbs.	.61%	1.75%	.11%	.12%	none
SOUTH DAKOTA (Hard Red Spring) (Hard Red Winter)	56.4 lbs. 57.2 lbs.	2.47% 2.8%	2.3% 3.35%	.2% none	.06% .15%	none none
COLORADO	61.2 lbs.	.4%	1.0%	none	.1%	none

PERMITTED TOLERANCE UNDER 1964 REVISED U.S. GRAIN STANDARDS^b

	Dockage	Heat damaged kernels	Damaged kernels (total)	Foreign Material	Shrunken and broken kernels	Defects (total)	Con- trasting class	Wheat of other class total
No. 1 Hard Red Winter	0.5%	0.1%	2.0%	0.5%	3.0%	3.0%	0.5%	3.0%
No. 2 Hard Red Winter	0.5%	0.2%	4.0%	1.0%	5.0%	5.0%	1.0%	5.0%
No. 3 Hard Red Winter	0.5%	0.5%	7.0%	2.0%	8.0%	8.0%	2.0%	10.0%
No. 4 Hard Red Winter	0.5%	1.0%	10.0%	3.0%	13.0%	13.0%	3.0%	16.0%

PERMITTED TOLERANCE UNDER 1964 REVISED U.S. GRAIN STANDARDS⁻

	Dockage	Heat damaged kernels	Damaged kernels (total)	Foreign Material	Shrunken and broken kernels	Defects (total)	Con- trasting class	Wheat of other class total
No. 1 Hard Red Winter	0.5%	0.1%	2.0%	0.5%	3.0%	3.0%	0.5%	3.0%
No. 2 Hard Red Winter	0.5%	0.2%	4.0%	1.0%	5.0%	5.0%	1.0%	5.0%
No. 3 Hard Red Winter	0.5%	0.5%	7.0%	2.0%	8.0%	8.0%	2.0%	10.0%
No. 4 Hard Red Winter	0.5%	1.0%	10.0%	3.0%	12.0%	12.0%	10.0%	10.0%
No. 5 Hard Red Winter	0.5%	3.0%	15.0%	5.0%	20.0%	20.0%	10.0%	10.0%

^aFarmers' Stake in the Grain Standards, Great Plains Wheat, Inc., 1963, p. 10.

^bData from Official Grain Standards of the United States for Wheat, U.S.D.A., Federal Register, January 25, 1964, p. 6.

END

OF

OVERSIZED

DOCUMENT

TABLE 7

QUALITY FACTORS FOR 1964 WHEAT SAMPLES OBTAINED FROM FARM TRUCKS^a

Dist.	No. samples	Protein content percent	Test weight per bushel pounds	Sedimentation value	Dockage percent	Total damaged kernels percent	Foreign material percent	Shrunken and broken kernels percent	Total grade defects percent
N.W.	76	12.2	61.0	51	.26	.0	.1	2.0	2.1
W.C.	75	12.8	62.1	55	.30	.1	.1	1.5	1.7
S.W.	104	12.8	60.8	52	.29	.0	.1	2.1	2.2
N.C.	66	12.8	61.5	61	.12	.1	.1	1.4	1.6
C.	93	12.3	60.3	57	.28	.1	.1	1.6	1.8
S.C.	101	12.0	61.2	51	.31	.2	.2	1.5	1.9
N.E.	61	11.8	60.3	49	.24	.1	.1	1.1	1.3
E.C.	76	11.5	60.3	45	.16	.2	.1	1.4	1.7
S.E.	104	11.9	60.2	46	.16	.2	.1	1.2	1.5
State	756	12.3	60.9	53	.26	.1	.1	1.6	1.8

1. Samples obtained by County Agricultural Extension Agents from wheat enroute to county elevators for the Kansas Wheat Commission. Samples tested by the Kansas State Grain Inspection Department and results summarized by the Kansas Crop and Livestock Reporting Service.

2. Adjusted to 14 percent moisture base.

^aKansas Wheat Quality in 1964, Kansas State Board of Agriculture, Kansas Wheat Commission.

In other words...wheat growers would foot the bill... given something for nothing on over half a billion bushels in order to give the foreign customer and up-graded product for which he would probably pay no premium. Common sense tells us that if the foreign buyer is given a better product for the same price...the difference must come out of someone's pocket. And it will be the producer's of course.¹

Supporters of the revisions attempted to disprove the above quote from the Farmers News Digest by presenting the following studies conducted by Great Plains Wheat:

Last year a statewide survey of the 1962 farm-stored wheat loan was made by the Kansas State A.S.C.S. Committee. The total number of individual samples was over 1600. They were processed by the State Grain Inspection Laboratory with the following results: dockage .29 percent; shrunken and broken .9 percent; total damage .4 percent; foreign material .1 percent; wheat of other classes, none. This gives a total for all defects of 1.69 percent. That is the kind of wheat which is coming off of the farms of Kansas and other Great Plains states. This year the Kansas State Grain Inspection Department is keeping a record of thousands of carlot shipments of Kansas Wheat arriving in terminal markets. This shows that in 4573 carlots from all of the nine Kansas Crop Reporting Districts the weighted average dockage is .33 of 1 percent.²

At the hearings on grain standards the Board Chairman Otis Tossett pointed out that much of the opposition to the changes in standards was based on an "overzealous concern for the producer." A reduction in grade tolerances does not necessarily imply a price reduction for wheat, nor is there a real built-in free ride on the dockage factor. "In my twenty years of personal experience in the grain business, nowhere have I found 'something for nothing'. It just does not exist. Present prices already carry a built in price reduction for the amount of dockage that is likely to exist, and the

¹Farmers News Digest, Farmer Cooperative Commission Co., (August 29, 1963), pp. 1-2.

²Clifford R. Hope, Sr., "The Need to Reform Grain Standards As They Relate to Wheat", Great Plains Wheat, Inc.,

claim that a closer identification of dockage will cost the producer will not stand close scrutiny. The real cost to the farmers lies in the present outmoded standards which have placed our country in a minor role of a residual exporter only. Lost opportunities, ever-lesseing wheat acreage, fewer and fewer farms, a declining farm population--these are the real costs of a non-aggressive sales polciy based on outmoded wheat standards which ignore the wishes of an in-creasingly discriminating clientele. Losses of a similar nature occurred to the interior grain trade as well, including a loss of wheat volume and a decline in the numbers of active traders."¹

The Hard Red Winter Wheat delivered from the farm is a high enough quality that the amount falling into the various grades is substantially the same as before. Statistics from the Kansas Crop and Livestock Reporting Service show that from from 80 to 90 percent of the Hard Red Winter Wheat produced in Kansas graded No. 1 for the years 1965, 1966, and 1967. From 10 to 20 percent graded No. 2 and a small percentage graded No. 3, No. 4 and No. 5.² There is a very small price differentiation between the five grades of wheat that the Kansas farmer markets. The price spread is in a range of from six to eight cents for grades 1 to 5. Therefore, the Kansas farmers will receive about eight cents more for grade No. 1 wheat than grade No. 5. Table 8 gives the prices Kansas farmers received by grades, by months, in 1967. Also, the price spread between each grade is shown. The spread between each grade is from one to two cents for grades 1, 2, 3, and 4, and from two to three cents for grade 5.³

¹Grain Standards Special, op. cit., p. 4.

²Figures compiled from data in Kansas Wheat Prices, Kansas Crop and Livestock Reporting Service, U.S.D.A., (May 15, 1966, February 15, 1966, March 15, 1966).

³Ibid., (April 28, 1968)

TABLE 8
KANSAS WHEAT PRICES BY GRADES^a

Year and Month	Mid-Month Averages -- Dollars per Bushel									
	grade 1		grade 2		grade 3		grade 4		grade 5	
	price	spread	price	spread	price	spread	price	spread	price	spread
January 1966	1.42	1	1.41	1	1.40	2	1.38	3	1.35	1.42
January 1967	1.56	1	1.55	2	1.53	1	1.52	3	1.49	1.56
February	1.47	2	1.45	1	1.44	2	1.42	3	1.39	1.47
March	1.64	2	1.62	2	1.60	2	1.58	2	1.56	1.63
April	1.52	1	1.51	2	1.49	2	1.47	3	1.44	1.52
May	1.55	2	1.53	1	1.52	2	1.50	3	1.47	1.55
June	1.45	2	1.43	2	1.41	1	1.40	3	1.37	1.45
July	1.39	1	1.38	2	1.36	2	1.34	2	1.32	1.39
August	1.36	1	1.35	2	1.33	2	1.31	3	1.28	1.34
September	1.34	2	1.32	2	1.30	2	1.28	2	1.26	1.33
October	1.36	2	1.34	1	1.33	2	1.31	3	1.28	1.35
November	1.32	1	1.31	2	1.29	2	1.26	2	1.24	1.31
December	1.35	1	1.34	2	1.32	2	1.30	3	1.27	1.34

^aKansas Wheat Prices, Kansas Crop and Livestock Reporting Service, U.S.D.A., (April 28, 1968), p. 2.

Because of the high quality of most of the Hard Red Winter Wheat, the proportions falling in the various grades will be the same as before the revisions. Even if the 1964 revisions had lowered the grade of wheat produced by the farmer, the price difference would be only one or two cents per bushel. Also, the market price for the lower grade would have probably moved upward, because only the label has been changed and not the product itself.

It is very difficult to show the exact effect the changes in the grain standards have had on the farmer. This is because of the many other factors that affect the grain market, such as the reduction of exports by the government under PL 480. If this is done at the same time as new grain standards are introduced, these two factors will tend to counteract each other and our foreign exports may actually decline.

Herbert Hughes, Chairman of the Great Plains Wheat Committee, states that the changes in grading were in the best interests of the farmer for a number of reasons. Some of these were as follows:

1. Increased sales to cash customers overseas that must buy on grade with a certification final.
2. Introduction of better marketing efficiency.
3. Producers try to deliver a better wheat based on physical characteristics.
4. Less room for blending inferior stocks into better kinds by market interests. Thus, a better foreign export product.

¹Grain Standards Special, op. cit., p. 5.

It appears that most of the effects of the revisions in the grain standards have been of a beneficial nature to the wheat producer. In 1957 and 1964 changes have resulted in better prices to the producer for the same numerical grade of wheat. The revisions have made the marketing system more competitive in the world wheat market. Because this has helped maintain the U.S. share of the world market, the farmer has benefited by improving or at least maintaining his income. This is because the farmer who participates in the agricultural programs receives an acreage allotment. The acreage allotment is determined by the demand of the foreign and domestic markets.

V.
ISSUES INVOLVING THE EFFECT GRAIN STANDARDS CHANGES
WOULD HAVE ON THE MARKETING TRADE INTEREST

The millers and domestic users of wheat have abandoned the use of Official Grain Standards grades in making their purchases. They buy on the basis of sample and laboratory tests, using grades only for hedging. They are used by country elevators in buying wheat only in a limited way. Therefore, the 1964 revisions in the United States Grain Standards have only slightly affected the domestic grain trade.

The reduction in the tolerance range for the various grades of wheat has caused the local country elevators to grade more carefully when they purchase wheat from the farmer. More effort is made to check on damage, dirt and to keep milo and other grains separated from the wheat. Also, the local elevators have been under more pressure from the Pure Food and Drug Administration to inspect grain purchased from the producer more closely. This is to guard against the contamination of the wheat food supply by rodent waste, treated wheat and any other contaminating material that could be harmful to the consumer.¹

Changes in the grain standards, no matter how small, do not spread benefits uniformly to all elevators and to all other elements of the industry. But the local elevator, which is careful in the grading and inspection of grain purchased from the farmer, appears not to have been affected by the 1964 revisions.

¹Interview with Bill Medley, Manager, Great Bend Coop., Great Bend, Kansas, April 6, 1968.

The effects upon the terminal markets, terminal elevators and the larger grain companies have been insignificant, as far as the domestic market is concerned, because the grain standards are only one of many factors used in domestic grain transactions.

The most debated and controversial issue at the hearing on the 1964 Grain Standards Revisions concerned two points: (1) the tolerances for unsound grain or useless admixtures were relatively high in comparison to that allowed by our leading competitors in the world wheat trade; and (2) whether or not grain moving along marketing channels for exports was affected.

Supporters of the revisions stated that there was a profit incentive for handlers to maintain or increase the amount of foreign material and dockage to allowable limits.

Too many exporters it would appear, are international traders who are after a quick profit rather than a long-term market for American wheat. Wheat that may have rated at the top of the grade when it left the elevator in Kansas City or Buffalo may be "slugged" when it is loaded into the boat until it barely meets the lowest specification of the grade it is represented to be.¹

In answer to the charge that the grain trade added dirt and poor quality wheat to export shipments, Alvin E. Oliver, Executive Vice President of the Grain and Feed Dealer National Association, stated that this accusation ignores a basic rule for the seller: namely, that you cannot cheat a customer and hope to earn commissions on future sales to him.

The trade takes the wheat that is grown and adds utility to it by storing until it is wanted, transporting it to the location that it is wanted, and distributing it in such quantities and qualities which will make it most useful and therefore most valuable to the user of wheat.

¹From the Files of Great Plain Wheat, Inc., A Statement by a Member of Congress, 1963.

Accusation to the effect that the trade adulterates wheat and makes it less valuable ignore the economic function of the trade; namely to take the grain as produced and make it as valuable as possible. The only way the trade can make a profit is to sell a product that has increased in value since the time it was purchased from the farmer.¹

If there was a practice of blending or adding of foreign material, poor quality wheat, or damaged wheat to grain for exports, this was reduced by the 1964 revisions. Therefore, the profit margin of that segment of the grain industry that practiced these blending or slugging methods was reduced. Figure 4 is an analysis of "U.S. Wheat Exported to Europe from November 1, 1959 to January 1, 1961." This shows a reduction in tolerance for unsound grain or useless admixtures made by the 1964 revisions. That there was a profit to the exporter - or at least a cost to the grain importer - is shown by the following:

Some say we should not be concerned about "small" amounts of cleanout in our export wheat. After all, they say, what difference does a fraction of a percent make?

Fact is that it makes a lot of difference. And here's an actual example. One shipment has a dockage content of .68 of 1 percent; another had .24 of 1 percent. The difference: .44 of 1 percent.

A small figure, to be sure, but consider how it mounts into big sums in a hurry when figured on the basis of a 10,000 metric ton cargo!

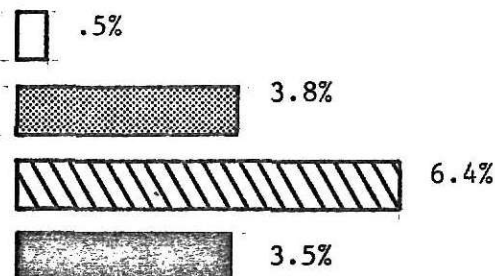
If a buyer pays \$75.00 a ton for the wheat, the extra amount of tonnage (.44 of 1%) in a 10,000 ton cargo of wheat is costing about \$3,300.00 and, in Europe a variable levy under the common market would be figured on the total tonnage and the buyer would have to pay an additional large sum. A variable levy of \$66.00 per ton, for example, would cost the buyer an additional \$2,900.00 for the total loss of \$6,200.00.²

¹Alvin E. Oliver, "Statement Regarding A Proposed Revision of the Official Grain Standards of the United States for Wheat," Statemnet of the Grain and Feed Dealers National Association, U.S.D.A. Hearing, Kansas City, Missouri, (October 1, 1963), p. 3-4.

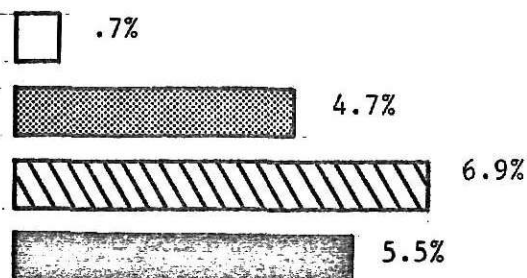
²Farmers' Stake in the Grain Standard, Great Plains Wheats, Inc., 1963, p. 13.





Fig. 4 Analysis of U.S. Wheat Exported to Europe
November 1, 1959 to January 1, 1961^a

No. 1 DARK HARD WINTER
(31 cargoes)



NO. 2 DARK HARD WINTER
(31 cargoes)



-  WHAT THE CERTIFICATE WOULD INDICATE THE IMPORTER WAS GETTING
(Percentage of cleanout, including foreign material, dockage, shrunken and broken kernels but not total damage.)
-  WHAT THEY RECEIVED (Percentage of cleanout, including foreign material, dockage, shrunken and broken kernels, after cargo samples were drawn overseas and then regraded by actual percent of these various factors.)
-  WHAT THEY COULD HAVE RECEIVED UNDER OLD GRAIN STANDARDS
(Based on allowable limits of foreign matter, dockage, and shrunken and broken kernels.)
-  WHAT THEY CAN RECEIVE UNDER 1964 REVISED STANDARDS
(Based on allowable limits of total defects and dockage.)

^aData from Farmers' Stake in the Grain Standards, Great Plains Wheat, Inc., and Official U.S. Grain Standards for Wheat.

Paul L. Farris, in his paper on "Uniform Grades and Standards, Product Differentiation and Product Development," maintains that uniform grades and standards facilitated trade and generally improved the allocative efficiency of the pricing process. Also they exert their influence through increasing knowledge about the product. More knowledge increases price competition and the markets become more perfectly competitive.

Consumer demands tend to be reflected more accurately back to producers. Rewards to producers are more in accordance with consumer evaluation of quality attributes contained in products marketed.

Included in making markets more perfectly competitive is what Duddy and Revzan call the "ethical basis for marketing transactions...as long as no objective standard prevails there is opportunity for the strong to take advantage of the weak, for the clever and unscrupulous to outwit the unwary and trusting."

Uniform grades and standards, or specifications, also facilitate trading through making it possible to deal in quantities of a commodity more easily and efficiently. Advantages include more meaningful price quotations, the ability to trade on the basis of sample or description, and the pooling or mingling of products. Uniform grades and standards thereby facilitate the performance of such marketing functions as financing, transportation and storage.¹

The 1964 revisions which lower the tolerance range for each grade tend to make the grades more uniform and provide the buyer with more and better knowledge of the grain. The most likely result is the increase of price competition. The grain market may have become more perfectly competitive. Also, because the ability to have product differentiation was reduced by lowering the tolerance range, grain shipments carrying the same U.S. grade were made more uniform.

¹Farris, op. cit., pp. 884-885.

This may be why some of the grain exporters were opposed to the reduction in tolerance level for each grade, because this resulted in more uniform grading standards. A shift in the competitive environment would often be forthcoming. Consequently, the grain exporter whose market position was sustained primarily on the basis of product differentiation would tend to lose because of more severe price competition from other exporters who would supply grain with certain quality specifications at lower prices.

If the grain exporter had practiced blending or the adding of useless admixtures -- and there is no proof that he has done this -- then the economic effects on the grain exporter would probably have been a reduction in the profit margin and an increase in price competition due to less product differentiation.

VI.
UNRESOLVED ISSUES THAT MAY RESULT IN
ADDITIONAL REVISIONS IN THE GRADES

Supporters for further revisions in the grain standards maintain that the present grading system is inadequate. They say that the inadequacies of the grain standards have caused U.S. mills to buy on a separate set of specifications. They recognized the shortcomings of the grade and abandoned it as a precise means of securing their stocks. Many U.S. mills send scouts into the wheat raising areas at harvest time. These scouts follow the wheat harvest and collect samples which are carefully tested in their own laboratories. Using these results they then formulate their purchase plans. Such methods demonstrate the weaknesses of the official grain grades. In other cases, U.S. millers buy their wheat from terminal stocks on the basis of various quality factors not included in the standards.

Therefore, while U.S. millers have developed their own specifications to guide them in purchasing wheat, farmers largely sell wheat on the basis of the official grain grades. This, in effect, means farmers are selling wheat on one set of terms and U.S. mill buyers are purchasing on a different set of terms. This points out the need for consolidating the language, for different standards are actually applied to measure the value of wheat.¹

The present system is not meeting the goals or purposes that were stated in an earlier section of this paper. A good grading system

¹Farmers' Stake in the Grain Standards, Great Plains Wheat, Inc., 1963, p. 7.

should provide a common language between buyer and seller so that both parties can deal with confidence even though they are separated by thousands of miles. Also, good standards should communicate the type, kind and quality of wheat to produce from the final end-use (or miller and baker) back to the farmer).

When the producer takes his wheat to the country elevator, the weight of a bushel of wheat is one of the chief factors in determining its grade and the resulting price. Other grading factors do not enter into the pricing structure at the country elevator in most cases. Most experts say that only in special situations is the bushel weight of any significance. Farmers do not have quality factors properly evaluated at the point of first sales. They must depend primarily on the grain standards for pricing purposes.¹

Dr. John A. Shellenberger, professor of Grain Science and Industry at Kansas State University, made the following statement about the grain standards and the world market.

"The grain standards are inadequate for merchandising United States wheat in world markets. Quality information essential for the appraisal of wheat for uses is not provided by the present system. This situation is a serious shortcoming and one which will require thorough consideration by the grain trade. It may be difficult to explain, the the years ahead, why various scientific methods developed for evaluating wheat are not accepted within the framework of the grain standards.

When we pick up reading material, we are informed day after day that we are living in an era of scientific achievement. One would never become aware of this fact by studying our grain standards."²

Dr. Shellenberger stated that at the present time the moisture test is the only analytical test applied to wheat in determining its

¹Ibid., p. 7.

²John A. Shellenberger, What's Wrong With Our Grain Standards, Documented from files of Great Plains Wheat, Inc., July 1963. p. 19.

grade. When Hard Red Winter wheat is above 13.5 percent moisture the only notation is that of "tough". The exact amount of moisture is not stated in the official grade. Such analytical procedures involving protein, ash, moisture, fat acidity, drastatic activity, determination of infestation or quality appraisal for eventual processing use are not reflected in the present grain standards even though these tests are applied regularly to wheat for the determination of its use value. The present system tells the processor relatively few things of major importance. The factor that often determines the grade is weight per unit volume or test weight. The weight of wheat is affected by the moisture content. Thus low moisture wheat has a higher test weight than a high moisture wheat. Hence, for an accurate appraisal of test weight, it is essential to know the moisture content -- which our grain standards do not include. In addition, test weight is only a rough indication of volume or plumpness of wheat and does not represent a high correlation to flour yield when the wheat is processed.¹

The subclasses within the standards for wheat are based on an estimation of hardness, judged by the vitreous characteristics of the kernel. This is not a particularly scientific procedure for our time, since both hardness and physical appearance measurements of various kinds are in use for a wide variety of products. It has been purposed by Dr. Shellenberger that for hard wheat, a more useful subclass division could be based on protein content:

¹Interview with Dr. John A. Shellenberger, Professor of Grain Science and Industry at Kansas State University, Manhattan, Kansas, July 18, 1968.

For example, if no wheat below 11 percent protein could be classified as 'hard' this term would immediately have a uniform meaning throughout the world. Under our present system of grading wheat, the protein can conceivably vary over a wide range often from 9 to 20 percent and the wheat can be classified officially as hard. Obviously from the standpoint of use, if a purchaser were expecting under our grading system a cargo of hard wheat and discovered upon delivery that the protein content was approximately 9 percent, he could be greatly disappointed.¹

It is difficult to overestimate the importance of quality as a factor in the agricultural export picture. The cash market for wheat is a buyer market. An importer can demand quality and our competitors such as Canada seem to be meeting their demands. Therefore, the grading system must show the quality of wheat that is producing and also encourage our producers to produce high quality wheat.

It is impractical, or impossible, for the foreign buyer to accumulate the necessary information about the quality of our wheat. Therefore, he is forced to work through the official grain standards. Since the foreign buyer does not have access to information available to U.S. mill buyers the standards should give him a good analysis of the physical and chemical properties so that he can buy intelligently.

The grain standards must be evaluated from the standpoint of how well they describe end-use quality. But quality has many meanings. Wheat that is good for making crackers will not necessarily make good bread. Thus, the quality factor for each type of wheat must take into consideration what the end-use will be. The quality factors for Hard Red Winter Wheat should be based upon the buyer use of the wheat. Much of the Hard Red Winter Wheat produced in the U.S. is used in the making of bread, and the standards are silent about gluten quality or other

¹Shellenberger, Loc. cit., p. 19.

descriptive information which would tell a baker how the wheat would perform in the making of bread.

In the domestic market it is milling and baking performance that determines the value of wheat. It is handled in merchandising and storage operations as a fluid commodity and commingling and substitution of like grades take place. Much attention is paid to differing milling and baking qualities. This is done in order to supply domestic millers with very specific quality characteristics such as mixing and fermentation quality, gluten strength, and water absorptive capacity. Domestic millers pay a premium in order to obtain these special qualities if such wheat is in short supply.

The official U.S. Grain Standards do not describe wheat with sufficient discrimination to characterize many of the important milling and baking properties sought by the mills. Warehousemen, therefore, in order to participate in bidding for domestic business, continually scrutinize the milling and baking quality of their stocks, using many laboratory tests. The net result is a segregation of this fluid commodity wheat, without necessarily changing the market grades of any of the segregates as measured by official standards.

On lot of No. 1 hard winter wheat, for example, could be, and often is, similar to another lot of No. 1 hard winter only in its physical characteristics as measured by the Grain Standards. One lot could have excellent milling and baking properties while the other might have mediocre milling and baking properties.¹

¹Seeborg, op. cit., p. 3.

Table 9 is a comparison between grades and milling and baking properties of carlot receipts of Dark Hard Winter Wheat at Kansas City for the 1961 crop year. The terms used in this table and their significance follow:

Test weight per bushel is the weight of a Winchester bushel determined on dockage -- free wheat.

Protein content is determined by the standard Kjeldahl procedure using the factor 5.7. Values are reported on a 14.0 percent moisture basis. Protein content is recognized as a factor in determining baking quality.

Sedimentation value of wheat is determined by the method described in Cereal Laboratory Methods, Sixth Edition (1957). The sedimentation value is a combined index of gluten content and gluten quality and is therefore a useful measure of bread-baking strength. High sedimentation values are normally associated with superior bread-baking strength. The properties of wheat usually associated with different ranges in sedimentation value are as follows:

1. Sedimentation value of 60 and over represents hard wheat of high protein content, superior gluten quality, superior baking strength, suitable for mixing with weaker wheats for bread flour.
2. Sedimentation value of 40 to 59 represents hard wheat of moderately high protein content, good gluten quality, suitable for bread flour production.
3. Sedimentation value of 20 to 39 represents low-protein-content hard wheat or high-protein-content soft wheat, fair baking strength, suitable for making "all purpose" flour or mixing with stronger wheat for bread flour.
4. Sedimentation value of less than 20 represents low protein content, weak gluten quality wheat, suitable for cake, pastry, cooky, and cracker flour but not for bread flour.

Milling score is a mathematical expression involving many factors. It is calculated from the equation:

$$\begin{aligned} \text{Milling score} = 100 - [& (80 - \% \text{ yield}) = (\% \text{ ash} - 0.30) \\ & + 0.04 (160 - \text{feed rate in g per min.}) \\ & + 0.2 (65 - \% \text{ patent}) \\ & + 0.5 (16 - \% \text{ milling moisture})] \end{aligned}$$

Milling scores may be expressed in adjective terms as follows:

87 to 91	-----	Excellent
82 to 86	-----	Very good
77 to 81	-----	Good
72 to 76	-----	Fair
67 to 71	-----	Poor

Mixing time is the optimum time necessary to obtain a dough of maximum consistency in the experimental bread-making process used. The following adjective ratings may be used for the numerical values of mixing time:

Up to 1 minute	-----	Very short
1 minute up to 2 minutes	-----	Short
2 to 2 1/2 minutes	-----	Medium
More than 2 1/2 minutes	-----	Long

Water absorption is the optimum amount of water required to bring the dough to the desired standard consistency in the experimental bread-making process used. The baking industry prefers high water absorption in the bread-making process.

Mixogram characteristics. Mixogram curves made on a National recording micro mixer (Mixograph) can be used to evaluate dough-mixing characteristics. In this report the development time and the mixing tolerance are included. The development time is defined as the time required for maximum dough development (the peak of the curve). The time during which the dough maintains its stability without appreciable change in the height of the curve is the mixing tolerance. Generally speaking, bakers prefer flour with a long mixing tolerance, which is usually associated with long development time.

Bread Loaf volume is the maximum volume obtainable by using a baking formula, which in addition to the basic ingredients included shortening, malted wheat flour, non-fat dry milk, and the optimum amount of potassium bromate. These values are somewhat higher than those reported prior to 1956, because of the substitution of a new type baking pan. With the baking procedure used, bread loaf volume is considered the best indication of baking strength.¹

Table 9 shows that grade 5 wheat actually has better mixing and development time than grade 1 wheat. Grade 4 has better mixing time, development time and mixing tolerance than grade 1. Grades 2 and 3 have better milling and baking properties than grade 1 for the

¹Physical, Chemical, Milling and Baking Properties of Carlot Receipts of Wheat, 1961 Crop. Agr. Mktg. Serv., Grain Div. U.S.D.A.

TABLE 9

A COMPARISON BETWEEN GRADES AND MILLING AND BAKING PROPERTIES OF CARLOT RECEIPTS
OF DARK HARD RED WINTER WHEAT AT KANSAS CITY FOR THE 1961 CROP YEAR^a

	Grade No. 1	Grade No. 2	Grade No. 3	Grade No. 4	Grade* No. 5
No. of carlots composited	112	49	23	20	30
Test weight per bushel, lbs.	61.8	59.7	57.6	55.0	52.5
Protein, pct.	10.7	11.2	11.2	10.3	10.1
Sedimentation value	38	40	39	34	29
Milling score	85.5	83.9	83.8	80.3	75.2
Mixing time, min.	2.50	2.75	3.00	3.25	2.75
Water absorption, pct.	61	61	60	58	59
Mixogram Characteristics:					
Development time, min.	3.75	3.50	3.00	5.00	5.25
Mixing tolerance, min.	2.00	3.00	2.75	3.25	2.00
Bread loaf volume, cc.	765	745	745	720	720

* Grade No. 5 is for Hard Red Winter Wheat

^aData from Physical, Chemical, Milling, and Baking Properties of Carlot Receipts of Wheat, 1961 Crop, Agricultural Marketing Service, Grain Division, USDA, (AMS - 356, August, 1963) pp. 7-16.

following: protein, sedimentation value, mixing time and mixogram characteristics. Therefore, a miller who is looking for a specific quality of wheat may pay a premium for grades 2 and 3 because these grades are better than grade 1 for his particular need.

That there is often a higher price for wheat of lower grades is shown by the Kansas City cash grain market for July 11, 1966. The price for No. 2 hard and dark hard wheat ranged from 195 1/4 - 216 1/2. No. 3 ranged from 198 3/4 - 219 1/4. Thus the low price for No. 3 wheat was 3 1/2 cents higher than the low for No. 2. The high price for No. 3 was 2 3/4 cents higher than the high for No. 2. Therefore, on this day some grade 3 wheat was bringing higher prices than grade 2. This clearly shows that the demand for a certain type and quality of wheat on any given day -- not the grade in which it falls -- determines the price. See Table 10.

The present Grain Standards are not encouraging the producer to increase the planting of those varieties with the best milling and baking qualities. The Standards are silent about gluten quality or other descriptive information which would tell a processor or buyer how the wheat will perform in a specific use, and there is no way of passing the demand for quality by the processor back to the producer.

The addition of more descriptive information to the grain standard will result in added cost. Therefore, before the standards can be changed, consideration must be given to the cost and whether the benefits will justify the additional cost of the changes. Cost, undoubtedly will be one of the issues when the addition of more descriptive information such as protein content is proposed in future grade revisions.

TABLE 10

THE KANSAS CITY CASH GRAIN MARKET BY GRADES FOR THE WEEK OF
JULY 11-15, 1966 AND THE WEEK OF JUNE 3-7, 1968^a

	No. 2 Hard and Dark Hard	No. 3 Hard and Dark Hard	No. 2 Red	No. 3 Red
Monday July 11, 1966	1.95 1/4 - 2.16 1/2	1.98 3/4 - 2.19 1/4	1.19 1/4 - 1.54 1/4	1.94 3/4
Tuesday July 12, 1966	1.96 - 2.03 1/4	1.95 3/4	1.93 1/4 - 1.99 1/4	1.91 - 1.98 1/4
Wednesday July 13, 1966	1.92 1/2 - 2.01	2.02 1/2	1.94 - 2.01	1.92 - 2.00
Thursday July 14, 1966	1.97 3/4 - 2.00 1/2	2.00	1.94 3/4 - 2.01	1.92 3/4 - 2.00
Friday July 15, 1966	1.98 - 2.05 1/2	2.02 1/2	1.92 - 2.01	1.90 1/2 - 2.00
Monday June 3, 1968	1.58 1/2 - 1.59 1/2	1.47 1/2 - 1.58	1.48 1/4 - 1.51	1.46 - 1.50
Tuesday June 4, 1968	1.51 - 1.52 1/2	1.46 1/2 - 1.57	1.47 1/2 - 1.50	1.45 1/2 - 1.49
Wednesday June 5, 1968	1.49 1/4 - 1.55 1/2	1.46 - 1.56 3/4	1.47 - 1.49 3/4	1.45 - 1.48 3/4
Thursday June 6, 1968	1.50 1/4 - 1.54 3/4		1.45 3/4 - 1.49 1/4	1.43 3/4 - 1.48 1/4
Friday June 7, 1968	1.49 - 1.56 1/2	1.47 3/4	1.45	1.43

^aData compiled from "Kansas City Cash Grain," The Topeka Daily Capital, July 11-15, 1966 and June 3-7, 1968.

During 1962 and 1963 the government paid the producer a premium for strong, high sedimentation wheat. This encouraged the producers to grow varieties of wheat that had high sedimentation value. Because sedimentation has a positive correlation with gluten strength, this resulted in the encouragement of planting strong gluten strength varieties. The sedimentation premiums were reduced in 1965 until they no longer encourage the planting of strong gluten varieties.

Data collected from the Kansas Wheat Quality Reports for 1963 - 1967 (Table 11 and 12) shows a decrease in the planting of strong gluten strength varieties in Kansas. In 1963, 42.6 percent of the wheat acreage was planted to strong gluten varieties, but by 1967 only 29.6 percent was planted to such varieties. Thus, a reduction of 13 percent in acreage of strong gluten varieties. The medium gluten varieties increased from 58.1 percent in 1963 to 64.6 percent of the acreage in 1967.¹

The decline in acreage of strong gluten varieties was partly caused by a reduction of Bison acreage in western Kansas and probably can be directly attributed to the increased acreage of earlier-maturing Scout variety. This is unfortunate, because Bison is a better baking wheat than Scout. From the quality standpoint, Scout should replace Wichita and Triumph rather than Bison and Kaw as both of these have very good milling and baking properties. The acreage planted to Bison and Kaw has decreased 7.7 percent in Kansas since 1964.²

¹Figures compiled from data in Kansas Wheat Quality, Kansas State Board of Agriculture, Kansas Wheat Commission, 1963-1967.

²1967 Report on Experiment Station Variety Tests With Small Grains, Agricultural Experiment Station, Kansas State University, (Report of Progress, 129, August 1967) p. 7.

TABLE 11
WHEAT VARIETIES SEEDED BY GLUTEN STRENGTH^a

Strong Gluten Varieties				
Variety	Percent of total acreage			
	1964	1965	1966	1967
Bison	18.7	18.6	15.5	11.8
Kaw	12.6	13.8	15.8	11.8
Rodeo	6.0	4.8	3.3	2.7
Comanche	1.7	1.7	1.2	.8
Ponca	1.3	1.0	.8	.4
Warrior	.7	.6	.7	1.0
Golden 50			.6	.8
Tascosa				.3

Medium Gluten Varieties				
Variety	Percent of total acreage			
	1964	1965	1966	1967
Triumph	27.1	27.4	27.6	24.0
Wichita	14.1	13.6	13.0	10.5
Ottawa	8.2	8.7	7.7	5.9
Kiowa	3.6	3.5	3.1	2.7
Apache	2.4	2.7	2.5	2.9
Pawnee	1.7	1.3	.9	.8
Scout		.2	5.5	21.0
Concho		.6	.5	.5
Gage				

^aData compiled from Kansas Wheat Quality, Kansas State Board of Agriculture, Kansas Wheat Commission, 1963 - 1967.

TABLE 12

THE TOTAL PERCENT OF STRONG GLUTEN AND MEDIUM
GLUTEN VARIETIES GROWN IN KANSAS (1963-1967)^b

Year	Strong Gluten Varieties	Medium Gluten Varieties
1963	42.6%	57.4%
1964	41.5%	58.1%
1965	40.8%	58.6%
1966	37.2%	61.5%
1967	29.6%	69.6%

^aIbid.

It has been pointed out that the quality of hard wheat destined for export to dollar markets must be improved if we are to meet the competition from Canada and other wheat-exporting countries. But this improvement is impossible so long as we continue to decrease the amount of acres planted to strong gluten varieties.

Therefore, if the United States is to gain a larger foreign market for U.S. wheat it must either reverse this trend or lower the price. One way this can be accomplished is to include such quality factors as protein or other milling and baking properties in the determination of Official Grain Standards. This would encourage a shift from medium back to strong gluten varieties. If, in addition to a larger supply of strong gluten hard wheat, the standards are revised to enable exporters and importers to merchandise U.S. wheat in foreign markets with a precision that has been developed outside the grain standards by domestic traders, then and only then can we expect to be truly competitive in dollar markets abroad.

The Foreign Agricultural Service believes the United States could sell a substantially larger volume of high baking strength wheat in Europe, Latin America, Asia and Africa if it were available at competitive prices.¹

Because of the value and importance of milling and baking quality to the end-use of Hard Red Winter Wheat, it would appear that when further revisions are considered by the Department of Agriculture, that the addition of milling and baking quality will be an issue, along with the added cost and time in grading.

¹Seeborg, op. cit., p. 4.

VII. SUMMARY

The Official Grain Standards should promote the general welfare of the grain industry by providing a system which can measure different qualities and conditions of grain. Standards should facilitate the merchandising of grain as it passes through the various channels of commerce from the producer through the country elevator and terminal elevator to the miller and baker. Also, they should facilitate the export of wheat to foreign buyers. The standards should communicate to the farmer the type and quality of wheat demanded by the processor and consumer.

Following World War II, the need for wheat was critical in many countries. Most overseas buyers were more interested in quantity of wheat than quality. Those who could afford it bought Canadian Manitoba to provide milling and baking quality in their blends. The United States was largely a supplier of calories.

In the early 1950's the picture began to change as countries such as France and Italy began to produce more than enough to meet domestic requirements. Japan, Germany and others recovered and began to buy the types and quality wheat they wanted. Today the United States is in a highly competitive world wheat market that demands quality based on milling and baking properties.

Although the United States exports half of the wheat it produces, less than half of the wheat exported is for cash. Large quantities are exported under various foreign assistance programs.

In 1964 revisions were made in the Official Grain Standards. The revisions narrowed the range of tolerance for each grade and thus reduced the amount of foreign matter and dockage permitted in American wheat.

An issue that developed at the Department of Agriculture Hearing on the 1964 changes in the grain standards was the effects the changes would have on United States wheat exports. Supporters of the revisions maintained that the changes would make U.S. wheat more competitive in the world market. The opposition maintained that the revisions would not improve the competitive position of the U.S. wheat exports, and that the old standard allowed for a wide variety of qualities of wheat, and that this was helping maintain our present volume of wheat exports.

There was no agreement at the hearing as to the effect the revised standards would have on U.S. wheat exports. Further because of the complexity of the marketing system, it is almost impossible to show any numerical increase in the demand for U.S. wheat as a result of the 1964 revisions.

A second issue was the effect that changes in the grades would have on the producer. Those opposed to the revisions stated that the producer would be required to accept a discount because his wheat would be graded lower under the new standards. The new standards had little effect upon the grade of wheat delivered by the farmer to the country elevators because he was not using the wide tolerance of the old standards. A study of Kansas wheat prices and carlot

receipts of wheat indicated that the price of wheat by grades was only slightly affected. The history of grain marketing has been that a narrowing of the range of tolerance for each grade of the standards has resulted in a better price to the producer: the 1957 revisions resulted in an increase in price from 1/4 to 2 cents for new future contracts of the same numerical grades.

Changes, no matter how small or how few, will not spread benefits uniformly to all growers and to all elements of the industry. There is the possibility that a few were hurt by the changes. The farmer who is not careful in the harvesting and storing of his grain may receive a lower grade and price at the country elevator under the new standards, but he probably would have received a lower price or a discount under the old standards for the same wheat.

The new standards have affected the local country elevators by causing them to grade more carefully when they purchase wheat from the farmer. The domestic grain trade was only slightly affected by the 1964 revisions because the domestic users of wheat have abandoned the use of grades in making their purchases.

The third issue was the effect changes would have on the marketing trade interest. The most controversial issue was that the wide tolerance ranges of the old standards allowed the exporter to add unsound grain or foreign material to U.S. wheat for export. At the hearing there was no agreement on the issue. If the grain exporter had practiced blending or the adding of useless admixtures -- and there was no proof that he had -- then wheat moving along the marketing channels for export was affected because the tolerance range for the

amount of blending, adding of foreign material, poor quality wheat, and damaged wheat to grain for exports was reduced by the 1964 revisions. Therefore, if handlers of grain did practice blending, then their profit margin was reduced. If the 1964 revisions did reduce the amount of foreign material and defective wheat in foreign exports then United States wheat is more competitive in the foreign market. But the competition is also making progress.

An unresolved issue that may result in future revisions in the grades is the need for the standards to show milling and baking quality. Thus, two considerations should be: the addition of quality characteristics such as protein content to the grades, and the cost of applying this test.

If the U.S. is to gain a larger share of the world wheat market it must meet the competition by offering high quality wheat based on milling and baking properties. This can not be achieved under the present Official Grain Standards. Because of the International Grain Agreement, there is less price competition in the world wheat market because a floor and ceiling price has been placed on wheat. Therefore, the main factor of competition is the quality of wheat. Countries such as Canada which have a wheat marketing system based on quality will have a competitive advantage because of price.

The grading standards do not encourage the producers of wheat to grow high quality milling and baking wheat. At the present time the grading factor that determines the grade for most samples is test weight per bushel. Studies have shown that test weight has little relation to milling and baking properties.

Data collected on the varieties of Hard Red Winter Wheat grown in Kansas show a decrease in the planting of strong gluten strength varieties. Therefore, the quantity of strong gluten wheat has also decreased.

If the Official Grain Standards are to encourage the production of the high milling and baking quality wheat, changes must be made. Either milling and baking properties must be added to the present grain grading standards or complete new grades should be created based on milling and baking properties for Hard Red Winter Wheat and the end-use for other kinds of wheat. Because of the different kinds of wheat raised in the U.S. and different end-uses, it is impossible to have official grain standards that are the same for all wheats.

The new grading system should be applied to both the domestic and foreign market. Under the present system the domestic user is able to purchase the better quality wheat, leaving the poorer wheat for export. Also, if a grading system is to reflect the needs of the user all the way back to the producer, it must be applied in both markets and at the local level to the wheat delivered by the producer to the country elevator.

This will result in increased cost, which will become an issue and will require future studies to show whether the added cost will be prohibitive. If the cost is not prohibitive then the addition of milling and baking characteristics such as protein content to the standards should improve the general welfare of the grain industry. Because the standards will encourage the production of better milling

and baking wheat, the better quality should increase the demand for U.S. wheat, thus making U.S. wheat more competitive and increasing cash exports in the world market.

BIBLIOGRAPHY

Books

- Hathaway, Dale E. Government and Agriculture, New York: The MacMillan Co., 1963.
- Schonberg, James S. The Grain Trade How It Works, New York, Exposition Press, 1956.

Articles and Periodicals

- "A Report on Market Structure Research In Agricultural Economics," Journal of Farm Economics, Vol. XLIII, (august 1961), 513-533.
- Bork, Bill. "Grain Standards Changes Can Cost you," Farmers' News Digest, Special Edition, (August 29, 1963).
- Farris, Paul L. "Uniform Grades and Standards, Product Differentiation and Product Development," Journal of Farm Economics, Vol. 42, (December 28-30, 1960), 854-863.
- "Grain Standards Act Stands Good Chance of House Approval, " Feedstuffs, Vol. 39, No. 45, (November 11, 1967), 72-75.

Government and State Publications

- Kansas State Board of Agriculture, Kansas Wheat Quality in 1966, Kansas Wheat Commission, November, 1966.
- Kansas State Board of Agriculture, Kansas Wheat Quality in 1967, Kansas Wheat Commission, November, 1967.
- Kansas State Board of Agriculture, Kansas Wheat Prices, Division of Statistics, November, 1965.
- Kansas State University, 1967 Report on Experiment Station Variety Tests with Small Grains, Agricultural Experiment Station Report of Progress 129, August 1967.
- Seeborg, Edward F. The Future of U. S. Wheat in World Trade, Grain and Feed Division Foreign Agricultural Service, No. 9, September 1962.
- United States Department of Agriculture, Grain Crop Quality, Consumer and Marketing Service, C and MS 44, June 1966.
- United States Department of Agriculture, Economic Effects of U. S. Grades for Beef, Marketing Research Report No. 298, January, 1959.

- United States Department of Agriculture, Physical, Chemical, Milling and Baking Properties of Carlot Receipts of Wheat, Agricultural Marketing Service Report AMS-356 (1953-1957), November 1963.
- United States Department of Agriculture, Physical, Chemical, Milling, and Baking Properties of Carlot Receipts of Wheat, Agricultural Marketing Service Report AMS--356 (1961), August 1963.
- United States Department of Agriculture, Foreign Agricultural Trade of the United States, Economic Research Service Report, May 1968.
- United States Department of Agriculture, Statements From Hearings on Grain Standards, Agricultural Marketing Service, December 1963.
- United States Department of Agriculture, Data on Proposed Changes in Wheat Standards, Agricultural Marketing Service Report AMS-514, September 1963.
- United States Department of Agriculture, Candian Wheat Marketing, Foreign Agricultural Service Report FAS-M-140, July 1962.
- United States Department of Agriculture, Grading and Exporting Wheat in the Union of Soviet Socialist Republics, Foreign Agricultural Service Repor5 FAS-M-99, December, 1960.
- United States Department of Agriculture, Sedimentation as a Measure of Wheat Quality, Marketing Research Report No. 680, November 1964.
- United States Department of Agriculture, Grain Marketing in the Soviet Union, Economic Research Service, June 1961.

Reports

- Grain Exchange Institute, Inc. Grain and Its Marketing, Association of Grain Commission Merchants of Chicago, 1947.
- Clarke, James W. Marketing Western Canada's Grain. Winnipeg, Canada, The Winnipeg Grain Exchange, 1964.
- Hughes, Herbert J. Farmers' Stake in the Grain Standards, Great Plains Wheat, Inc., Kansas City, Kansas, June 1963.
- Riddel, W. The Canadian Wheat Board, Winnipeg, Canada, Stovel-Advocate Press Ltd, December 1962.

Unpublished Material

- Shellenberger, John A. What's Wrong With Our Grain Standards, Files of Great Plains Wheat, Inc., Garden City, Kansas, July 20, 1963.

Other Sources

Department of Grain Science and Industry, Kansas State University,
Manhattan, Kansas, Personal Interview with Dr. John A. Shellenberger.
July 18, 1968

Great Bend Coop., Great Bend, Kansas, Personal Interview with Bill Medley,
Manager. April 6, 1968.

Great Plain Wheat, Inc., Garden City, Kansas, Personal Interview with
Clifford R. Hope. January 1964.

AN ANALYSIS OF THE ISSUES INVOLVED IN
CHANGING THE GRAIN STANDARDS

by

LARRY LEE GEIL

B. S., Kansas State University, 1963

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment

of the requirements for the degree

MASTER OF SCIENCE

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1969

This report was undertaken to analyze some of the major issues involving proposed changes in the Official Grain Standards of the United States. Also, it reviews the history, purpose and goals of the grain standards.

At the 1964 Department of Agricultural Hearing on proposed changes in the grain standards, three main groups of issues evolved.

1. Issues involving the effect grain standards changes would have on United States wheat exports.
2. Issues involving the effect grain standards changes would have on the producer.
3. Issues involving the effect grain standards changes would have on the marketing trade interest.

In general the 1964 revisions resulted in a narrower range of tolerance for each grade. This meant less foreign material and damaged kernels in each official grade.

Supporters of the first issue maintained that the revisions would improve the competitive quality position of United States wheat in the foreign market. The opponents maintained the revisions would not improve the competitive position of U. S. wheat. There was no agreement as to the possible effects of the revisions and because of the complexity of the marketing system, it is almost impossible to show any numerical increase in the demand for U. S. wheat as a result of the 1964 revisions.

The second issue was that the producer would receive an economic benefit or loss from the revisions. The new standards had little affect

upon the grade of wheat produced by the farmer, because he was not using the wide tolerance of the old grades. A study of Kansas wheat prices and carlot receipts indicated the price of wheat by grades was slightly affected. Also, past revisions had resulted in an increase in price from 1/4 cent to 2 cents for new future contracts of the same numerical grade.

The third and most controversial issue was that the wide tolerance range of the old standards allowed the exporter to add unsound grain or foreign material to U. S. wheat for export. There was no proof that this was practiced, but if the exporter did practice the blending of unsound grain and foreign material to export wheat, then his profit margin was reduced by the 1964 revisions.

An unresolved issue that may result in future revisions in the grades is the need for the standards to show milling and baking quality. The present standards do not reflect the end-use of wheat back to the producers. Thus he is not encouraged to produce high-quality milling and baking wheat. Data collected shows a decrease in the quantity of strong gluten wheat produced in Kansas.

The addition of such test as protein content will result in added cost which will require further studies to show whether the added cost will be prohibitive. If the cost is not prohibitive then the addition of milling and baking characteristics should improve the competitive quality position of U. S. wheat in the world market.