

AN ABSTRACT OF THE THESIS OF

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(Name of Student) (Degree)

in Agricultural Economics presented on Sept. 15, 1972
(Major) (Date)

Title: AN ANALYSIS OF THE FEASIBILITY OF ESTABLISHING
A PACIFIC NORTHWEST WHITE WHEAT FUTURES
CONTRACT

Abstract approved: Redacted for Privacy
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Individuals in the soft white wheat industry in the Pacific Northwest are looking for new marketing tools which will be helpful for their operations and reduce some of their risk. During the past 18-24 months their interest has centered on the commodity futures market, where they would like to see a wheat futures contract established that would offer adequate hedging potential for the Pacific Northwest. Two conferences have been sponsored (May 25, 1971 and July 7, 1971) at the Dalles, Oregon, by the Oregon Wheat Growers League to discuss this topic.

For an objective analysis of the desire and need for such a futures contract and of its potential for success, data on supply, demand, and prices were helpful but not entirely adequate. An industry questionnaire similar to the questionnaire technique (Delphi)

developed by RAND corporation for forecasting future technological changes was used. The results were two-fold. Other than just forecasting technology and target dates, the Delphi technique probed opinions and attitudes of the industry.

It was determined that the demand for soft white wheat is changing. Some countries are reducing their demand while other countries are expanding their demand. Also present is the possibility of creating new markets. With this uncertainty present in the demand for soft white wheat, along with the advent of increased risk as a result of expansion in operation size, the industry panel indicated a desire and need for a futures contract appropriate for their industry. With soft white wheat fulfilling the characteristics traditionally thought necessary for a market and its commodity to succeed as a futures contract, all that remains is attracting the proper interest, both commercially and speculative; and providing a contract with terms favorable to both the industry and the speculator.

Close coordination between the soft white wheat industry and the Chicago Board of Trade should lead into good contract conditions. Commercial interest does exist but the hedger will have to be educated on the use of the futures contract. Deciding when to get into the market, deciding whether to buy or sell, is just a start. It requires time to watch the market, manage its use, and integrate

it into one's operation. With this accomplished, speculative interest should be attracted.

The attributes often cited as necessary for successful futures trading are not necessarily required for a successful futures market. The number of characteristics a market and its commodity has will not guarantee its success, and if any characteristics are lacking, does not mean assured failure. With all factors considered, soft white wheat does seem to have as much potential of being successfully traded as any commodity now traded.

An Analysis of the Feasibility of Establishing a
Pacific Northwest White Wheat Futures Contract

by

Norbert Sylvester Ries

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

June 1973

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Date thesis is presented

September 15, 1972

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ACKNOWLEDGEMENTS

The author wishes to express sincere appreciation to his major professor, Dr. T. M. Hammonds, for his guidance, constructive criticism, and patience while this thesis was being prepared and written; and to Dr. A. Gene Nelson who made some helpful suggestions in the organization of this thesis. Also, appreciation is extended to Dr. John Litschauer, his undergraduate advisor, who encouraged and prepared him for graduate school.

Thanks is extended to the many individuals who offered words of encouragement in times of need. Also, special thanks is extended to Mary Rae Stone for her work in assisting in the typing of the first draft of the thesis.

Finally, the writer is particularly grateful for the encouragement, understanding, and assistance his parents offered him while he obtained his college education. He is also appreciative of the financial assistance offered by the Oregon State Agricultural Experiment Station.

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AN ANALYSIS OF THE FEASIBILITY OF ESTABLISHING A PACIFIC NORTHWEST WHITE WHEAT FUTURES CONTRACT

I. INTRODUCTION

Soft White Wheat is a class of soft wheat which is grown in a climate where the winters are relatively mild. The Columbia Basin, which includes North-Central Oregon, Eastern Washington, and the western portion of Northern Idaho, is located in the Pacific Northwest^{1/} and is the major soft white wheat producing area in the United States.

Wheat growers, millers, exporters, merchandisers, and others in the Pacific Northwest are dissatisfied with their ability to hedge^{2/} their soft white wheat with the present wheat contract now traded on the Chicago Board of Trade. The major factor that could be the cause of their inability to get satisfactory results is that the wheat grown in the Pacific Northwest is a low protein soft white wheat. This is uniquely different from the wheat traded on the

^{1/} The term Pacific Northwest or (PNW) will be used throughout this thesis when referring to the Columbia Basin. The terms soft white wheat and white wheat will also be used interchangeably in this thesis.

^{2/} Hedging is the process of offsetting an existing risk by taking an equal and opposite position on another risk which is likely to move in the same direction. (This definition was suggested by Dr. T. M. Hammonds, Assistant Professor of Agricultural Economics at Oregon State University.)

Chicago Board of Trade which is a higher protein soft red wheat.

The difference in the wheats leads to two other factors which are important to recognize. First, the products made from them are not the same. The higher protein red wheat produces more satisfactory bread flour while the low protein white wheat is used primarily for making noodles, pastry items, and snack foods. Second, the varying products have different markets in which they are sold. Soft white wheat is primarily an export wheat serving the Oriental Market,^{3/} while soft red wheat is consumed domestically, for the most part. These dissimilarities combined do not allow the two markets (soft white wheat cash and Chicago wheat futures) to fluctuate closely enough together for proper hedging purposes. Without a proper hedge, the price risk remains for the soft white wheat industry to bear.

The white wheat industry in Oregon has indicated a great amount of interest in the Commodity Futures Market during the past 18 to 24 months. The Oregon Wheat Growers League took the lead in investigating this interest which centered around establishing a new wheat contract that would offer adequate hedging potential for the Pacific Northwest. Two meetings were held last year (May 25, 1971 and July 7, 1971) at The Dalles, Oregon. The meetings were

^{3/} For a detailed review of the Pacific Northwest white wheat industry, see Appendix A.

attended by all segments of the white wheat industry. Mr. Warren Lebeck, Executive Vice President of the Chicago Board of Trade, was present at the opening meeting. As a result of the strong interest shown, a Steering Committee made up of producers, elevator operators, millers, exporters, and brokers was appointed to prepare a contract to present to the Chicago Board of Trade.

Precautions which are taken to meet uncertainty (such as price variation) almost always necessitates a sacrifice. The result is either less-than-maximum product from given resources, or, conversely, not obtaining a minimum cost for a given output (13). This is brought about because expected price is discounted. The less confident the producer is in his estimate of expected price, the greater is the amount he will discount it. The effect of this discounting is to reduce the input of variable factors of production resulting in lower yields. With a workable futures contract, the producer can reduce his price uncertainty by hedging to "lock in" the price he will receive. This allows for more efficient use of resources provided that the cost of hedging is less than the costs associated with uncertainty.

A successful, workable contract would also have other advantages. The following are only a few:

- (1) A futures contract would permit a producer to establish a price

for all or any portion of his crop during the growing season or after harvest.

- (2) Holding hedged grain by an elevator operator for storage or in storage for local feed and other uses with a minimum of price risk may give him an opportunity to increase his profit because he could protect his margins.
- (3) A hedge against forward sales of flour would allow the flour miller time to pick up the type of wheat necessary and at the same time be protected on price.
- (4) Cash grain purchases could be hedged by terminal elevators while accumulating stocks for anticipated exports or domestic use.

Being able to make a proper hedge could be one marketing tool to the advantage of the industry.

Having a soft white wheat futures contract for the Pacific Northwest white wheat industry to hedge with could be classified as an advance in technology. Technology is not only a change in a piece of hardware or a bit of chemistry; it is knowledge -- knowledge of physical relationships, systematically applied to the useful arts. It can range from the initial glimmering of how a basic phenomenon can be applied to the solution of a practical problem to an end product, device, or production machine in a well designed operation system (18).

Objectives of the Study

It is apparent, from recent actions, that interest does exist in establishing a new contract specifically for the Pacific Northwest. The goal of this thesis is to provide an independent study, looking at the important issues.

The major objectives are:

- (1) To discuss the characteristics of the Pacific Northwest soft white wheat and its market in relation to the characteristics traditionally thought necessary for the successful introduction of futures trading.
- (2) To project changes in market conditions and structure which would influence the proposed contract and to discuss the implications of these changes as they pertain to the contract.
- (3) To discuss the potential success (or failure) of Pacific Northwest soft white wheat as a futures commodity based on the data and information gathered.

Two secondary objectives are:

- (a) To provide a projection of the future of the industry.
- (b) To present and discuss the specific contract which has been drafted by the Steering Committee.

Previous Work Done

To the author's knowledge, there has been only one other study completed previous to this study, and it dealt with a similar issue. It was done by Bruce Brooks in 1959 (5). His overall conclusion was that the Washington grain market did not exhibit the market characteristics of the model market he developed through his review of literature. On the basis of his analysis, the characteristics of the Washington wheat market relative to his model appeared to be as follows, exhibited in Table 1 (on the following page).

By studying the table, one can see some of the lacking features were:

- (1) The supply and demand was not uncertain and the market was not broad and continuous (flow was restricted at times).
- (2) The trading was not convenient with a low cost.
- (3) There was not sufficient market news available to all.

Some other facts Brooks mentioned were:

- (1) The government loan and support price were used more in this area which stabilized price and lowered risk.
- (2) The supply of wheat was relatively small.
- (3) A large amount of speculation was not likely with only a limited amount of hedging.

The results of this previous study should not discourage but

Table 1. Summary of market and commodity characteristics found in a model wheat futures market and in the Washington wheat market.

Commodity and market characteristics	Model wheat market		Washington grain market	
	Does have	Does not have	Does have	Does not have
A commodity that is storable	X		X	
A commodity that can be standardized and graded	X		X	
There is a non-restricted flow of the commodity through the market	X			X
The supply and demand is uncertain	X			X
The market is broad and continuous	X			X
The cost is low and trading is convenient	X			X
There is sufficient market news available to all	X			X
There is provision of market sensitivity	X		X	

Source: (5, p. 132).

encourage and stimulate new discussion since it is felt sufficient changes have occurred to invalidate some portions of it.

The marketing pattern for the Pacific Northwest has been changing in recent years as well as farm size and risk exposure. Since 1967 the Pacific Northwest supply and demand figures for wheat have been published in more detail than in previous years. News media are continually expanding and growing. With these changes, plus others, one is allowed to take a new and different look at the possibility of establishing a new contract.

Plan of Thesis

Chapter II will review and discuss the characteristics a market and its commodity should have in order to establish and improve its futures trading possibilities. At the same time, the relationship of the Pacific Northwest soft white wheat and its market will be discussed with each characteristic. The third chapter will explain a questionnaire technique used in order to obtain information for specific questions present data and statistics could not answer. Chapter IV will mention and discuss some of the reasons why contracts have failed in the past. The suggested contract for the Pacific Northwest will be reproduced, discussed, and compared to the presently traded contract now on the Chicago Board of Trade.

The descriptive material in this thesis will then be combined with the results of the questionnaires and information obtained from interviews to arrive at a summary. This will be presented in the fifth chapter along with the conclusion for this study.

II. SOFT WHITE WHEAT: MARKET STRUCTURE AND CHARACTERISTICS

Traditional futures market literature establishes a fundamental group of conditions which should be met by the market and its commodity before futures trading could be successfully instituted. Gold (9), in his text on commodity futures trading, discussed these fundamental conditions which must be met before standardized futures contracts can be established and futures trading can be successfully instituted. In brief they are (9, p. 35):

- (1) Competitive market conditions must exist in production as well as distribution.
- (2) The commodity must be subject to specific grading.
- (3) The commodity must be in the raw or semi-processed state.
- (4) The leading members of the trade must be willing to participate in, or at least not actively oppose, futures market trading.
- (5) The commodity must be storable, under proper conditions, through at least the major portion of the marketing year.

Bakken (3) in a paper on the futures market, had a longer list of specifications set up by earlier writers. The "traditional" characteristics were the same as those mentioned by Gold but included such items as: the commodity should be essential, possibly its market should be world wide, and the product should be salable at

all times with frequent, wide amplitude price fluctuations.

Hieronimus (34) in his text on futures trading listed the commodity prerequisites given by the Federal Trade Commission which included

(1) homogeneity such that commercial units are interchangeable, (2) durability, or minimum degree of perishability, and (3) an adequate supply of the actual commodity flowing to, or through, the terminal market where the futures market is established (14, p. 18).

This individual also pointed out the fact that the Federal Trade Commission did not consider a large volume of trade as a prerequisite, but felt that it was essential if the futures market was to reach its highest efficiency. Hieronimus also mentioned two other writers, Baer and Saxon,^{4/} who had a rather specific detailed list. In brief form their list included the following (14, p. 18-19):

- (1) Units must be homogeneous.
- (2) The commodity must be susceptible of standardization and grades.
- (3) Supply and demand must be large.
- (4) The supply must flow naturally to market. (There should be no artificial restraints applied by individuals such as withholding supplies or refusing to buy except at his price.)

^{4/} Baer, Julius B. and Saxon, Olin Glenn, Commodity Exchanges and Futures Trading, Harper and Brothers, 1948. Chapter VI.

- (5) Supply and demand must be uncertain.
- (6) The commodity should not be too perishable because the futures contract may call for a delivery of units of the commodity many months into the future.

Some of the conditions or characteristics were prerequisites and others were just aids for the contract to operate at its highest efficiency. Time has repudiated many of the traditional characteristics because they were not consistent with the needs of the market at hand, and changing technology has affected the handling and distribution of agricultural products.

Pacific Northwest soft white wheat will be discussed in relation to each of the characteristics which are, or where, thought necessary for a futures market and its commodity to succeed. While each of the traditional characteristics will be discussed separately and in some detail, the reader should be cautioned that the elements of the commodity market are interrelated. Having certain characteristics or not does not guarantee or doom success.

The following characteristic discussion will include the thoughts of many different writers on this subject.^{5/}

^{5/} The contributing thoughts for this discussion came from reference 3, 5, 9, 10, and 14.

Gradable and Homogeneous

If every unit of a commodity could be regarded commercially equivalent in quality to every other unit, the problem of grading would be eliminated. Differences do exist in units of the same product or commodity, so grouping is required. Standards are established so that by inspection and classification, the commodity may be divided into a definite number of well defined, uniform grades, of which each unit of the grade becomes homogeneous. This type of homogeneity will then allow the units to be interchangeable.

Most contracts have one basic grade with other grades also deliverable, but at a premium or discount. This practice of allowing more than one grade to be deliverable reduces the risk of a short squeeze.^{6/}

Futures contracts are bought and sold, sight unseen, not for a specific grade, but bought and sold according to established grades. Beyond reasonable doubt, one wants to be sure that the established grade has very little tolerance for variation.

Cattle futures, with an inability to be easily graded and

^{6/} A short squeeze occurs when those who sold contracts in the delivery period cannot obtain supplies to deliver on the futures contract. They must, therefore, cover their short positions by buying contracts. This forced buying of the contracts causes the price to increase steadily (10).

adequately standardized, are still traded successfully. "The variation in yield of choice-grade beef cattle has been established to be as large as 6 percent" (23, p. 833). This shows the commodity must be describable but need not be fungible.

The Pacific Northwest white wheat is primarily a soft white wheat with a low amount of protein, 6 to 11 percent. This is sufficient homogeneity for grading and standardization (5).

The U. S. grain standards have served adequately for the cash market so there should be no problem in serving the futures market. Along with the inspection and weighing facilities available, white wheat should be just as easy to inspect and grade as the other wheats. Easy inspection and grading will allow a basic grade to be established with other grades deliverable at a premium (discount) if the quality is higher (lower) than the basic grade. Being describable will be an easy qualification to meet.

Raw or Semi-Processed

The product should be in a raw or semi-processed form. A completely manufactured product is subject to production increases and decreases at the will of the manufacturer. Also, grading becomes more difficult because each year there may be a style change which may require a new schedule of grading.

Soft white wheat in the Pacific Northwest is a bulk commodity,

none of which is processed or manufactured to the point of being a product identified with the processes of a particular firm. The same applies to the other wheats that are traded on the existing exchanges.

Perishability

Futures contracts may require delivery of the commodity at some future date. Consequently, the commodity should be storable, under proper conditions. It was thought a commodity too perishable could not be kept through the major portion of the marketing year to meet the requirement of the market in times of scarcity.

Examples of commodities which have a high degree of perishability and are still traded on the futures markets are cattle, hogs, iced broilers, and fresh eggs. These more perishable commodities require frequent inspection to insure that their quality has not deteriorated. With all the advances in technology which are now available, perishability is no longer a limiting factor.

Even though perishability is not as important as it was in the past, binned and handled properly, wheat (white wheat included) will maintain the quality it had when it was first put into storage.

Competitive Market

Competition should exist in both the production as well as the distribution phase of the market. This implies that production of the

commodity be large, and the numerous producers be located over a wide area. Also, there should be many buyers, including some who are in foreign markets.

The absence of artificial restraints, whether by government or private agencies, is important. The result is that no individual should be able to control prices by withholding supplies or refusing to buy except at his price.

In the corn industry there is little possibility of control of either supply or demand by producer or user because corn has many suppliers and users. There are some commodities which are not in complete agreement with this characteristic of a competitive market. In the case of broilers or soybean oil, there are only a few firms that control a high proportion of the supply.

Marketing channels for some commodities consist of country points, sub-terminals, and terminal markets (wheat for example) while others (such as fats and oils) consist of highly decentralized markets. Also, some commodities (grains in particular) have supply, demand, and price structures that can be affected by particular governmental programs. This indicates a commodity can be successfully traded even though its market may not be totally competitive.

Having a competitive market does make the futures market operate at a higher level of efficiency. At this point it is necessary

to spend some time explaining the marketing pattern of the soft white wheat in the Pacific Northwest. The following discussion may not give the exact picture, since the industry is going through some phases of change, but it will develop a good representation of the marketing pattern.

Pacific Northwest Wheat Marketing Pattern^{7/}

In the Pacific Northwest, during the harvest season, the bulk of the grain is delivered to country elevators and warehouses. Usually though, when a delivery is made to one of the local elevators, which are mostly independent, farmer-owned cooperatives, a sale does not take place. The grower continues to maintain his ownership of the wheat until it is sold to an exporter, miller, merchandiser, or feeder. Elevators only buy from farmers when they want to sell on the basis of firm orders that they have received from exporters and merchandisers. Otherwise it is too hazardous and many of the cooperative managers are not permitted to buy grain. This situation seemed rather unique; therefore, the fact was mentioned and discussed during two of the interviews. As a result, a different view was obtained by the author.

Presently the industry is facing the problem of adjusting to

^{7/} This discussion was based primarily on information compiled from (24) and interviews.

rapidly changing marketing conditions that require new skills and large amounts of capital. In the past, the producer did not actually maintain ownership all of the way to the miller or exporter, as was indicated. When the price was right, the producer would sell to the local elevator who immediately sold to the miller or exporter. The country elevator very seldom assumed a substantial position in the wheat, partly due to the absence of a futures contract.^{8/} All the elevator realized in return was the money it made because of storage.

Recently farmers have been trying to avoid the storage cost, required by the elevators and warehouses, by building more on-farm-storage. As in the past, the producer maintains ownership of his grain until he considers the price is most advantageous to him. At that time, it is sold to a local elevator. The local elevator retains ownership of the wheat until it is sold to a terminal elevator, exporter, merchandiser, miller, or feeder. The duration of ownership is influenced by price expectation.

As before, the producer bears the price risk while he maintains ownership. With the advent of on-farm-storage, the producer has increased his needs for a futures contract. He needs protection against price changes and a method of covering storage costs. Increased on-farm-storage has resulted in excess storage capacity

^{8/} This point was brought out by one of those interviewed.

at some elevators. This has caused elevators to maintain ownership of wheat that they get in expectation of higher prices. They need the higher prices to cover their costs of unused storage facilities. This exposure has resulted in a need for price protection, of which a futures market would be helpful.

The wheat movement through the elevators to terminal positions is primarily westward to Pacific seaboard terminals where the exporting function is handled. Fifteen-twenty years ago at these tidewater ports there were about ten, mostly family-owned, firms that operated in all or nearly all of the grain trading regions of the world. The exporter interviewed said that today there are at least 6 major exporters, 13 Japanese firms, and 6 to 10 merchandisers--all who buy for exporting purposes. This indicates there is an increase in competition in the exporting phase of the soft white wheat industry. Domestically, the main portion of the soft white wheat is purchased by millers for flour and blending purposes while a small portion is sold for feed and seed.

Since the futures contract now traded on the Chicago Board of Trade is primarily for red wheat, and the Great Plains grow red wheat, the Great Plains marketing pattern will be used as a reference point.

Northern Great Plains Marketing Pattern^{9/}

In the Northern Great Plains where high-protein wheat is grown, the grain is usually moved from the farm to the market outlet provided by the local elevator and sold. From the local elevator the grain is shipped to sub-terminal or terminal markets by rail or truck, at which time the greatest portion is used for flour.

The major terminal outlets for the wheat grown in the Northern Great Plains is the Minneapolis-Duluth market. However, some wheat does move west. Each year the portion moving to the different markets changes. Factors which influence the directional flow of the grain include the freight rate advantage east or west, and the price differential between the east and west coast markets. Sellers located in the areas of equal freight rates occupy a unique position as market equalizers. As the western market rises above the eastern market, more wheat moves west causing an excess supply. This situation tends to drop the western price and increase the eastern price because of the shortage. This tends to keep the two markets equalized.

For the most part, producers consider the services provided by their local elevator, adequate and convenient. Elevators

^{9/} This discussion was based primarily on information compiled from reference (12) and (26).

organized as cooperatives are the most prominent type. Giving patronage refunds and stock ownership has stimulated loyalty among the farmers who trade there. Also, such reasons as:

- (1) conviction that the price is fair and nothing would be gained by marketing the grain any other way,
- (2) belief by some that they have no other alternative outlet (particularly small producers),
- (3) long-standing custom to sell to the local elevator,
- (4) willingness of local elevators to handle all varieties and grades of grain,
- (5) payments made without delay,

have made the local cooperative elevator the only outlet considered by many farmers. The government is another outlet which is available. Wheat can be placed under the government loan program or purchase agreement. Most of the wheat that is put under the government program is the grain with low protein content and low test weight. The loan price is equal to or above its market price. The higher protein wheat receives a premium, and very little of it goes through the government.

Direct sales to millers is another outlet available to the wheat farmers. Some producers, selling direct, found millers to be a convenient outlet; and sometimes the farmers received higher prices than paid elsewhere. Ready cash, habit, and personality of the mill

buyers are other reasons which sometimes cause farmers to sell directly to the miller.

Direct shipment to commission merchants at terminal markets is a marketing practice which by-passes the local elevators. By-passing the local elevator is sometimes done by farmers who think their local elevators do not pay top prices for the highest protein wheat and that returns can be increased by direct sales to Minneapolis. Another reason why some farmers ship direct is that some of the local elevators have the practice of taking at least one percent dockage^{10/} even though the wheat is clean. In the cases where the wheat is shipped directly to the terminal markets, all risk of price changes, losses in transit, and other costs are borne by the producer.

A market outlet that saves the producer the cost of hauling to the local elevator is to sell to truck buyers. The truck buyer takes ownership and hauls directly to terminal markets. One draw-back of this market outlet is the absence of scales for weighing on the farm. Distrust accompanies the practice of loading on the farm and weighing at some distant point.

There are about five different marketing outlets through which a farmer may market his wheat. Producers using outlets other than their local elevator very seldom sell all of their wheat crop through

^{10/}Waste material in wheat and other grains which is easily removed.

one of the other outlets. Those using the government loan seldom place all of their wheat under loan; likewise, those shipping direct to commission merchants usually sell only a portion of their wheat in this manner, and only a small portion is shipped directly to the flour mill or sold to truck buyers. Once a farmer chooses his market outlet, the wheat travels through the channels until it becomes flour, is exported, or used as feed and seed.

Comparison

These two marketing patterns are different. White wheat is mostly for foreign use while red wheat is primarily used domestically. Data was obtained from available secondary sources on wheat exports for the United States. Getting a detailed breakdown of figures relating specifically to the soft white wheat grown in the Pacific Northwest was difficult. Many sources were reviewed but only one, "Pacific Northwest Wheat Summary", broke production and exports of the Pacific Northwest wheat into white wheat and all wheat. This data went back only as far as 1967, which was unfortunate, but it did allow a comparison to be made for the years after 1967. Agricultural Statistics was an excellent source for data relating to the other varieties of wheat and U. S. total export figures.

The following three tables exhibit data related to exports. Table 2 shows the U. S. wheat exports by variety. Table 3 shows

Table 2. U. S. wheat exports^{a/} by varieties.

Year	All Wheat	Hard Red Wheat	Soft Red Wheat	Hard Red Spring	Durum	White	Pacific Northwest Wheat ^{b/}	Pacific Northwest White Wheat ^{c/}
	(million bushels)						(mil. bushels) ^{d/}	
1949	302	180	35	23	2	62	-	-
1950	369	199	30	49	10	81	-	-
1951	479	251	23	88	14	103	-	-
1952	321	184	40	17	3	77	-	-
1953	220	78	56	11	<u>e/</u>	75	-	-
1954	278	124	62	28	0	64	-	-
1955	350	164	69	29	1	87	-	-
1956	553	254	60	35	11	193	-	-
1957	402	215	30	38	1	118	-	-
1958	443	255	43	46	1	98	-	-
1959	510	290	40	49	1	130	-	-
1960	662	432	54	32	6	138	143	-
1961	719	486	56	42	16	119	110	-
1962	644	437	41	39	4	123	137	-
1963	856	562	84	48	29	133	166	-
1964	725	498	80	25	10	112	144	-
1965	867	595	45	86	34	107	186	-
1966	744	377	68	120	47	132	194	-
1967	761	375	121	71	31	163	235	144
1968 ^{f/}	544	271	50	77	46	100	189	91
1969 ^{f/}	606	336	28	89	34	119	214	110
1970	-	-	-	-	-	-	216	106

^{a/} In addition to wheat grain, it includes grain equivalent of flour made from U. S. wheat, also, semolia and macroni in terms of wheat.

^{b/} Total of all varieties grown in the Pacific Northwest.

Table 2. Continued.

c/ White wheat grown just in the Pacific Northwest.

d/ These figures are already included in the previous six columns.

e/ Less than 500,000 bushels.

f/ Preliminary.

Source: Reference 30, 31, 32, 35, 36, and 37.

Table 3. Exports by varieties in percentages of total exports.

Year	All Wheat	Hard Red Wheat	Soft Red Wheat	Hard Red Spring	Durum	White	Pacific Northwest Wheat (All Varieties)	Pacific Northwest White Wheat
			(percent)				(percent)	
1949	100	59.60	11.59	7.62	.66	20.53	-	-
1950	100	53.93	8.13	13.28	2.71	21.95	-	-
1951	100	52.40	4.80	18.37	2.93	21.50	-	-
1952	100	57.32	12.46	5.29	.93	24.00	-	-
1953	100	35.45	25.45	5.00	.01	34.09	-	-
1954	100	44.60	22.30	10.07	.00	23.03	-	-
1955	100	46.86	19.71	8.29	.28	24.86	-	-
1956	100	45.93	10.85	6.33	1.99	34.90	-	-
1957	100	53.48	7.46	9.46	.25	29.35	-	-
1958	100	57.56	9.71	10.38	.23	22.12	-	-
1959	100	56.86	7.84	9.61	.20	25.49	-	-
1960	100	65.26	8.16	4.83	.91	20.84	21.60	-
1961	100	67.59	7.79	5.84	2.23	16.55	15.30	-
1962	100	67.86	6.39	6.05	.63	19.10	21.27	-
1963	100	65.65	9.81	5.61	3.39	15.54	19.39	-
1964	100	68.69	11.03	3.45	1.38	15.45	19.86	-
1965	100	68.63	5.19	9.92	3.92	12.34	21.45	-
1966	100	50.67	9.14	16.13	6.32	17.74	26.08	-
1967	100	49.28	15.90	9.33	4.07	21.42	30.88	18.92
1968	100	49.82	9.19	14.15	8.46	18.38	34.74	16.73
1969	100	55.45	4.62	14.68	5.61	19.64	35.31	18.15

Source: Constructed from Table 2.

Table 4. Percent of the individual varieties' supply which is exported.

Year	All Wheat	Hard Red Wheat	Soft Red Wheat	Hard Red Spring	Durum	White	Pacific Northwest Wheat (All Varieties)	Pacific Northwest White Wheat
	(percent)						(percent)	
1949	21.49	25.42	15.98	9.27	3.51	35.84	-	-
1950	25.55	27.99	15.71	9.90	15.78	43.55	-	-
1951	34.51	42.11	13.22	24.31	23.33	52.55	-	-
1952	20.55	22.44	19.14	5.70	7.89	39.09	-	-
1953	12.37	8.68	20.82	3.19	2.38	30.61	-	-
1954	14.49	11.82	24.31	8.24	.00	24.24	-	-
1955	17.76	15.00	30.94	8.15	4.55	31.41	-	-
1956	27.15	22.34	29.41	9.64	23.91	67.25	-	-
1957	21.55	19.96	18.18	10.41	1.89	57.56	-	-
1958	18.96	17.62	21.72	10.55	2.04	47.12	-	-
1959	21.14	18.64	22.60	12.19	2.38	55.08	-	-
1960	24.81	24.05	27.00	7.88	11.54	64.49	59.41	-
1961	27.20	26.16	26.17	11.90	39.02	67.23	61.31	-
1962	26.68	26.98	22.78	10.66	5.33	71.10	70.63	-
1963	36.55	37.97	37.67	13.22	29.59	74.72	75.75	-
1964	33.18	38.16	35.24	6.94	9.17	60.87	67.65	-
1965	40.65	49.16	23.44	21.03	24.64	56.61	68.56	-
1966	40.28	39.89	30.22	33.06	40.17	67.01	76.28	-
1967	39.09	39.14	41.87	20.64	32.68	62.45	76.99	78.94
1968	25.71	24.09	19.69	20.75	37.10	41.32	65.26	56.83
1969	26.59	25.57	12.33	25.28	23.13	49.79	71.56	65.64
1970	-	-	-	-	-	-	75.37	74.04

Source: Constructed from Table 2 and Table 3.

the varieties exported in percentage figures of total exports with total exports amounting to 100%. The two incomplete columns on the far right are not used when arriving at the 100% figure. They are already included in the U. S. totals represented in columns three through seven. For example, look at the year 1967. One hundred percent is arrived at by adding together 49.28, 15.90, 9.33, 4.07, and 21.42. Also shown in percentage form in Table 4 is each variety's supply which is exported.

Referring to Table 2, of the white wheat that was exported in 1967, 1968, and 1969, a large portion of it was white wheat grown in the Pacific Northwest. Take 1968 as an example when the U. S. exported 100 million bushels of white wheat. During this same year, 91 million bushels of Pacific Northwest white wheat were exported, which is included in the 100 million figure. This leaves about 10 million bushels grown outside the Pacific Northwest to be exported. Since most of the white wheat has been grown in the Pacific Northwest, it would not be irrational to assume that the majority of the white wheat that is exported by the United States is grown in the Pacific Northwest.

In summarizing Table 2, more hard red wheat is exported than any other variety. White wheat is next with either soft red or hard red spring following, depending upon the year. Last in quantity exported is durum.

Table 4 reveals that a higher percentage of the white wheat is exported than any of the other varieties. For the year 1967 through 1970, the average amount of Pacific Northwest white wheat exported averaged slightly less than 70%. One can see a large portion of the white wheat supply is exported.

Having a large export outlet indicates that white wheat has a world market--a much broader market than just the geographical United States. This export market would be extremely difficult for private firms to "control". There is a relatively large number of different people in the exporting business; and, if the market did get out of balance, the government could step in. One factor that may affect the flow of exports is the government subsidy. It is a political issue and can be persuaded in favor of the different exporting areas depending upon the work of politicians.

The government subsidy may reduce the amount of exports from certain ports but it will never totally eliminate exports from an area for any great length of time. Once the wheat supply for the particular exporting area is depleted, and it becomes uneconomical or impractical to ship in a wheat supply by land, exports will shift to a different port.

Large Supply and Demand

Liquidity means that there is always enough product available

so that a large purchase or sale will not unduly affect the price.

This actually is not necessary if not almost impossible. Most markets have periods of sluggishness or enthusiasm at which time there could be a shortage or an abundance of contracts available. Also, almost every commodity now offered on the exchanges involves some factors of seasonality, either from the supply side or the demand side. ^{11/}

The white wheat futures contract which is being discussed now by the industry would be set up primarily for the Pacific Northwest white wheat industry. However, anyone growing white wheat or anyone having anything to do with the handling or marketing of white wheat could use the market. One item that does bother the people in the industry is the potential volume of trade. This was brought out during the interviews when 50 percent of the people interviewed had the same opinion about insufficient volume.

Majority of the traders consider volume of trade is directly correlated with the supply of the commodity. For the years of 1967, 1968, and 1969, just under 70 percent of the total U. S. white wheat

^{11/} There have been some studies done with conflicting results as to the effect a futures contract has on price variation. Some think stabilizing prices is one of the strong arguments in favor of a futures contract. Others take just the opposite stand. One should not worry about constant fluctuation, just the fact that there is significant fluctuation is sufficient.

production took place in the Pacific Northwest. If this fact is any indication of white wheat production in the past, the white wheat figures could be considered as a close representation of Pacific Northwest white wheat.

The largest supply of wheat is hard red winter with hard red spring next. Soft red wheat, at first glance, seems to be third except for nine years when the white wheat supply was ahead. Table 5 will show this. Here again the figures in the two columns on the far right are already included in the main body of the table.

Looking at Table 6, the percentages between soft red wheat are close to the percentages for white wheat. By taking a closer look at the percentages, an interesting fact is revealed. The average yearly percentage of total supply for soft red wheat is almost the same as the average yearly percentage of total supply for white wheat, 10 percent.

With this point brought out, the average yearly supply, for 1949 through 1969, of both varieties was determined. Not forgetting the possibility of rounding errors, soft red wheat had an average yearly supply of 215 million bushels compared to 215+ million bushel average for white wheat. Once again the two columns on the far right pertaining to the Pacific Northwest have already been included in the figures in the main body of the table. One can see that of the 239 million bushels of white wheat produced in the U. S., 168 million

Table 5. U.S. wheat supply by varieties.

Year	All Wheat	Hard Red Wheat	Soft Red Wheat	Hard Red Spring	Durum	White	Pacific Northwest Wheat ^{a/}	Pacific Northwest White Wheat ^{b/}
	(million bushels)						(mil. bushels) ^{c/}	
1949	1,407	708	219	250	57	173	-	-
1950	1,456	711	191	305	63	186	-	-
1951	1,420	596	174	394	60	196	-	-
1952	1,584	820	209	320	38	197	-	-
1953	1,785	899	269	351	21	245	-	-
1954	1,922	1,049	255	344	10	264	-	-
1955	1,981	1,093	223	366	22	277	-	-
1956	2,045	1,137	204	371	46	287	-	-
1957	1,876	1,077	165	376	53	205	-	-
1958	2,346	1,447	198	444	49	208	-	-
1959	2,420	1,556	177	409	42	236	-	-
1960	2,676	1,796	200	414	52	214	234	-
1961	2,649	1,858	214	359	41	177	180	-
1962	2,419	1,620	180	371	75	173	188	-
1963	2,346	1,480	223	367	98	178	206	-
1964	2,186	1,305	227	361	109	184	202	-
1965	2,134	1,205	192	410	138	189	276	-
1966	1,849	945	225	365	117	197	252	-
1967	1,948	958	289	345	95	261	302	182
1968	2,117	1,125	254	372	124	242	286	160
1969 ^{d/}	2,282	1,314	227	355	147	239	302	168
1970	-	-	-	-	-	-	286	143

^{a/} Total of all varieties grown in the Pacific Northwest.

^{b/} White wheat grown just in the Pacific Northwest.

^{c/} These figures are already included in the previous six columns.

^{d/} Preliminary.

Source: Reference 30, 31, 32, 35, 36, and 37.

Table 6. Supply by varieties in percentages of total supply.

Year	All Wheat	Hard Red Wheat	Soft Red Wheat	Hard Red Spring	Durum	White	Pacific Northwest Wheat (All Varieties)	Pacific Northwest White Wheat
			(percent)				(percent)	
1949	100	50.39	15.59	17.65	4.06	12.31	-	-
1950	100	49.24	13.23	20.29	4.36	12.88	-	-
1951	100	42.94	12.54	26.08	4.32	14.12	-	-
1952	100	52.50	13.38	19.08	2.43	12.61	-	-
1953	100	50.54	15.12	19.39	1.18	13.71	-	-
1954	100	54.69	13.30	17.73	.52	13.76	-	-
1955	100	55.46	11.31	18.06	1.12	14.05	-	-
1956	100	55.82	10.01	17.82	2.26	14.09	-	-
1957	100	57.75	8.85	19.57	2.84	10.99	-	-
1958	100	61.88	8.47	18.65	2.10	8.90	-	-
1959	100	64.48	7.34	16.66	1.74	9.78	-	-
1960	100	67.31	7.50	15.22	1.95	8.02	8.74	-
1961	100	70.30	8.09	13.36	1.55	6.70	6.80	-
1962	100	67.11	7.45	15.16	3.11	7.17	7.77	-
1963	100	63.19	9.52	15.50	4.19	7.60	8.78	-
1964	100	59.73	10.39	16.47	4.99	8.42	9.24	-
1965	100	56.49	9.00	19.18	6.47	8.86	12.93	-
1966	100	51.17	12.18	19.65	6.33	10.67	13.63	-
1967	100	49.20	14.84	17.67	4.88	13.41	15.50	9.34
1968	100	53.17	12.00	17.53	5.86	11.44	13.51	7.56
1969	100	57.65	9.96	15.45	6.45	10.49	13.23	7.36

Source: Constructed from Table 5.

bushels were produced in the Pacific Northwest (about 70%).

An industry survey (described in detail in chapter III) revealed that the participants thought that the volume of trade would be insufficient once the contract did become established. The volume of contracts of hard red wheat traded at Kansas City is less than the volume of contracts of soft red wheat traded at Chicago; even though the supply of hard red wheat is greater than the supply of soft red wheat. Monthly volume of wheat futures traded on the Chicago Board of Trade and on the Kansas City Board of Trade are in Table 7 and 8 respectively.

To say that white wheat will not create enough volume because not enough white wheat is grown, is incorrect. The facts just presented show that the supply of white wheat is close to the supply of soft red wheat. Soft red wheat supply is smaller than the supply of hard red wheat, but at the same time, the number of soft red wheat contracts traded is greater than the number of hard red wheat contracts traded. The number of contracts traded is a factor of the amount of interest the contract generates. Interest may be stimulated by a number of factors, and is not solely a function of the crop size.

Before discussing the characteristic of interest, the present discussion of large supply and demand should be finished. Large supply and demand should also be uncertain, which will generate

Table 7. Monthly volume of wheat futures trading on the Chicago Board of Trade.

Year	(1000 bushels)												
	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1948	372946	378187	355504	290349	186589	193823	292570	298452	191488	168704	238419	241178	3208209
1949	237094	325599	260824	282454	311918	445352	509741	318254	276076	190495	230561	229417	3617785
1950	183810	181073	290171	265361	297412	272415	364349	215338	169544	159702	211540	275728	2886443
1951	330158	375789	326093	275233	323989	276982	316740	292594	191873	229377	303999	275400	3518267
1952	236932	212948	199375	261142	205121	250454	302463	224540	148671	147970	178335	220121	2588072
1953	175692	226537	182226	192034	215546	440318	466658	560310	383078	245365	302496	257882	3648142
1954	197492	197147	307618	352688	291431	292957	390856	276987	235769	181993	184476	262342	3171756
1955	203363	251884	313292	259471	339144	232134	438663	378945	289776	199607	185550	218064	3400893
1956	199296	239945	285230	319595	246894	292900	415013	384245	291953	327711	361006	277054	3640842
1957	272498	292794	325262	336131	317100	383174	458617	365535	322411	345942	297439	399145	4116738
1958	413358	382328	402315	326114	318546	322645	512316	298384	282987	243088	216919	251691	3970691
1959	201182	226474	374089	427679	261046	267908	291491	190339	183963	141828	158029	146925	2870953
1960	114572	145353	201533	170006	207615	123578	230207	189783	106626	128589	206794	146252	1970928
1961	183029	162644	170103	104636	113778	214624	360450	434776	244920	264715	159069	172074	2584818
1962	258744	205344	220924	295025	416676	381408	408825	534027	612244	444101	331510	275367	4384195
1963	294144	243656	276633	320605	388799	230729	443109	237255	551516	493948	339912	300958	4121264
1964	221470	278599	523834	419068	368165	34280	510502	310078	239366	158511	166240	180942	3719155
1965	139609	99655	116310	106027	85991	124763	295583	490043	424446	364426	588484	582200	3417537
1966	309236	235337	272671	234071	369822	791877	646441	533784	806782	614327	555735	543170	5916253
1967	554395	588790	1345005	1057725	828265	817380	916050	1093845	744350	500105	687820	537580	9671310
1968	494495	399035	575585	584635	463190	568940	631040	682500	617285	589330	513020	412465	6531520
1969	333205	336760	379595	387585	363470	352040	446845	355685	273615	197030	161305	193150	3780285

Source: Reference 1 and 2.

Table 8. Monthly volume of wheat futures trading on the Kansas City Board of Trade.

Year	(1000 bushels)												Total
	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1948	69756	65734	59958	60620	53808	46561	89702	63450	39804	45794	58630	57416	711233
1949	46342	67810	48325	38715	31032	65552	96025	42271	40118	22736	31851	29584	560361
1950	23838	26037	38827	41706	40477	56135	105975	66286	42459	34980	46044	58781	581545
1951	59615	55622	53608	60040	50457	50846	79601	91780	39278	43724	65996	47226	697793
1952	48902	40387	38093	45122	35477	78498	108187	63798	49475	41100	47175	41072	637286
1953	41482	44483	34294	32871	31944	90201	85156	56468	33601	25738	23495	20951	520684
1954	21362	17069	23999	23663	17654	41100	60118	33265	23556	20568	22997	21533	326884
1955	24416	18494	20032	17678	32597	48572	84500	50516	33177	25215	33473	24661	413331
1956	23415	29295	32316	26797	21904	43219	67514	43262	26361	36723	44073	31233	426112
1957	30713	31017	31559	29752	27457	41430	89774	63164	32156	36786	37257	37171	488236
1958	30073	28184	35401	30345	32283	36267	71613	44810	35334	27545	31354	37601	440810
1959	27108	25364	40824	49146	49140	41705	49379	36948	21396	21675	19549	18483	379559
1960	14967	16417	17520	12484	15888	24244	37526	39866	16581	15454	30502	21322	262771
1961	27671	22584	22655	19322	18790	35002	53893	52047	27868	25105	24477	21411	360825
1962	30377	35841	33125	36850	38339	69396	67493	75393	49380	45543	38971	31613	552321
1963	34993	37542	41111	29532	34640	48577	68832	45534	69515	60763	44822	44683	560544
1964	37906	39926	40127	36781	34471	58771	71685	47485	33605	30200	28575	30865	490397
1965	27635	23255	31650	33245	29675	45960	62235	73400	45665	36900	57020	64425	531065
1966	58702	50218	47195	53840	75970	135447	121600	93380	83835	75055	66760	67290	929292
1967	71785	75285	133720	106995	95265	117070	136346	147540	73565	71345	97135	68870	1194915
1968	117730	92095	88170	87670	71615	123640	134370	101035	66280	82530	71540	56670	1093345
1969	55715	51490	57335	56715	55550	67635	92635	76425	60880	61910	49560	53245	739095

Source: The figures were acquired through the Portland, Oregon office of John Gilderman and Sons.

price fluctuation. Table 9 shows monthly average prices for the different varieties of wheat at their different markets for 1967-1971.

Looking at the price ranges for No. 1 Soft White, No. 2 Soft Red, No. 2 Hard and Dark Hard Winter, and No. 1 Dark Northern Spring, one sees they are \$.54, \$.60, \$.54, and \$.53, respectively. Since each variety has a slightly different price range and a different mean, some method is needed by which a comparison can be made between the four different varieties. The coefficient of variation allows such a comparison to be made. After calculating and looking at the figures, it was concluded that the price fluctuation, or variation, of the four different varieties is relatively close. Combining this close price variation of the four different varieties with the fact that three out of the four different varieties are now traded on different commodity exchanges, soft white wheat has the necessary (if it is necessary) price fluctuation.

Ignites Interest

Widespread industry interest and participation, from production through marketing, is necessary to supply the hedging contracts which create the volume and open interest.^{12/} This open interest

^{12/} Open interest is the total number of unfilled, outstanding, or unsatisfied long contract; or the total number of unfilled, outstanding, or unsatisfied short contracts. It is not the combined total of both the long and short contracts (6).

Table 9. Monthly wheat prices by variety for the years 1967-1971.

Year	Month	Portland, Oregon No. 1 Soft White	Chicago No. 2 Soft Red	Kansas City No. 2 Hard and Dark Hard Winter	Minneapolis No. 1. Dark Northern Spring
1967	Jan.	\$1.74	\$1.71	\$1.77	\$1.89
	Feb.	1.67	1.70	1.73	1.88
	Mar.	1.72	1.80	1.82	1.94
	April	1.75	1.73	1.76	1.92
	May	1.92	1.67	1.76	1.96
	June	1.89	1.58	1.68	1.92
	July	1.61	1.50	1.61	1.91
	Aug.	1.60	1.49	1.56	1.75
	Sept.	1.60	1.51	1.57	1.67
	Oct.	1.59	1.52	1.59	1.65
	Nov.	1.58	1.45	1.56	1.63
	Dec.	1.62	1.46	1.58	1.60
1968	Jan.	1.66	1.49	1.60	1.61
	Feb.	1.70	1.51	1.61	1.61
	Mar.	1.66	1.50	1.60	1.64
	April	1.63	1.41	1.54	1.62
	May	1.60	1.38	1.53	1.58
	June	1.60	1.30	1.44	1.55
	July	1.48	1.28	1.37	1.45
	Aug.	1.45	1.22	1.35	1.43
	Sept.	1.45	1.20	1.34	1.51
	Oct.	1.46	1.25	1.40	1.57
	Nov.	1.49	1.32	1.42	1.59
	Dec.	1.49	1.33	1.40	1.57
1969	Jan.	1.48	1.38	1.41	1.58
	Feb.	1.48	1.36	1.40	1.56
	Mar.	1.46	1.32	1.40	1.57
	April	1.46	1.32	1.39	1.56
	May	1.48	1.33	1.39	1.54
	June	1.49	1.28	1.35	1.53

Table 9. Continued.

Year	Month	Portland, Oregon No. 1 Soft White	Chicago No. 2 Soft Red	Kansas City No. 2 Hard and Dark Hard Winter	Minneapolis No. 1. Dark Northern Spring
1969	July	\$1.42	\$1.30	\$1.28	\$1.53
	Aug.	1.38	1.27	1.31	1.51
	Sept.	1.40	1.31	1.39	1.59
	Oct.	1.44	1.36	1.43	1.65
	Nov.	1.47	1.41	1.46	1.70
	Dec.	1.51	1.48	1.46	1.72
1970	Jan.	1.53	1.49	1.46	1.73
	Feb.	1.52	1.55	1.46	1.70
	Mar.	1.53	1.53	1.45	1.67
	April	1.58	1.55	1.47	1.72
	May	1.57	1.48	1.44	1.68
	June	1.57	1.41	1.40	1.70
	July	1.53	1.45	1.38	1.72
	Aug.	1.53	1.52	1.47	1.75
	Sept.	1.59	1.67	1.59	1.85
	Oct.	1.63	1.74	1.58	1.88
	Nov.	1.72	1.77	1.59	1.86
	Dec.	1.77	1.74	1.59	1.80
1971	Jan.	1.78	1.75	1.58	1.75
	Feb.	1.77	1.74	1.58	1.70
	Mar.	1.77	1.70	1.55	1.65
	April	1.77	1.67	1.56	1.65
	May	1.83	1.61	1.61	1.63
	June	1.75	1.64	1.63	1.62
	July	1.60	1.54	1.54	1.57
	Aug.	1.55	1.45	1.54	1.50
	Sept.	1.54	1.45	1.53	1.50
	Oct.	1.56	1.42	1.56	1.51
	Nov.	1.55	1.60	1.56	1.55
	Dec.	1.56	1.71	1.58	1.57

Source: Reference 33 and 34.

Table 10. Monthly price statistics by varieties for the years 1967-1971.

	Portland, Oregon No. 1 Soft White	Chicago No. 2 Soft Red	Kansas City No. 2 Hard and Dark Hard Winter	Minneapolis No. 1 Dark Northern Spring
High	\$1.92	\$1.80	\$1.82	\$1.96
Low	1.38	1.20	1.28	1.43
Range	.54	.60	.54	.53
Mean	1.59	1.49	1.52	1.66
S. D. ^{a/}	.1242	.1606	.1207	.1330
C. V. ^{b/}	7.80%	10.78%	7.94%	8.01%

^{a/} Standard Deviation $\sqrt{\frac{\sum X_i^2 - (\sum X_i)^2}{n - 1}}$

^{b/} Coefficient of Variation $\frac{\text{S. D.}}{\bar{X}} \times 100\%$

Source: Constructed from Table 9.

attracts speculators; but if the industry is actively opposed to futures market trading, the market is usually defeated before it gets started.

There does appear to be industry interest in a Pacific Northwest futures contract. Some individuals in the industry think that the exporters, millers, and elevator operators need some way to reduce price risk and, just as important, the producers need a reliable market with which to hedge their product. Conferences have been held by the Oregon Wheat Growers League discussing these needs and the topic of establishing a new contract. A steering committee was set up and has proposed a contract for the Pacific Northwest.

Warren W. Lebeck^{13/} spoke at the opening meeting conducted by the Oregon Wheat Growers League. He felt that the contract would be simple to write, the risk capital was present, the facilities adequate, and the people in the industry were not totally unfamiliar with hedging.

The Department of Agricultural Economics at Oregon State University organized wheat futures workshops which were offered in Eastern Oregon by the State Extension Service. Even though a futures contract is not yet established, the attendance, participation,

^{13/} Executive Vice President of the Chicago Board of Trade.

and eagerness to learn were all favorable, re-enforcing signs of the high degree of interest. If the present industry interest is any sign of the amount the contract will be used, attracting speculators should be no real problem. The continuing interest the contract can generate, and not the crop size, will be an important factor.

Market News

Market news should be available to all concerned and interested parties--the hedger, the speculator, the broker, the loan officer, and others. This available news should give the factors and information influencing the supply and demand movements, commodities which are in a slump or active, actions of the government on specific programs, and up-to-the-minute information concerning the price in other markets. Crop estimates, weather reports, as well as current information concerning local, regional, national, and international supply and demand figures are also important. If a trader is to develop an opinion, he will do so on the basis of the knowledge he obtains through what he reads and hears. The more informed a trader is, the less reluctant he is to take a position in the market.

News broadcasts and newspapers today carry such items as foreign policies, government policies, exporting news, and the weather. Agricultural and market information can be found in U. S. Government reports, USDA reports as well as in publications by

trade associations, cooperatives, and other commodity handlers. Brokerage houses and land grant universities publish market newsletters which give up-to-date commodity situations as well as some indication of likely future price trends. Price information can also be found in Commodity Exchange Reports. Besides, a single telephone call to a broker's office will give anyone all the current information which is available.

The statistical reporting service has been improving for the Pacific Northwest. This is illustrated by the fact that starting in 1967 the wheat production and distribution figures have been broken down into more detailed categories. Reports are being published oftener than in the past. These are signs in favor of the Pacific Northwest white wheat industry.

An active futures market may not necessarily generate new information, but it will almost certainly improve the distribution of the present information. This benefits not only those trading in the futures market but those trading in the cash market as well.

Summary

The traditional characteristics discussed were as follows:

- (1) The product should be homogeneous, and grading should be possible.
- (2) The product should be in a raw or semi-processed form.

- (3) The product should not be highly perishable.
- (4) The commodity should be in a competitive market.
- (5) A large supply and demand should exist for the product.
- (6) Immediate purchase and sale of the commodity should be available.
- (7) Interest must exist among the members of the industry.
- (8) Market news should be available at all times.

In spite of the list of traditional characteristics thought necessary, there are a number of commodities traded which contradict some of the characteristics. On the basis of the analysis, an evaluation of the Pacific Northwest market relative to a successful futures market appears in Table 11.

It appears to be a mistake to impose a very rigorous set of characteristics as prerequisites for a commodity to become eligible for futures trading. While looking over the list of commodities now traded, it is clear that the list of requirements does not explain why some commodities are traded and others are not. It also does not explain why the volume of trading differs so greatly between commodities and over time.

Some characteristics common to most commodities now traded can be identified. First, the commodities can be described and separated into lots which are more or less fungible. Second, they are all bulk commodities, none of which are processed or

Table 11. Summary of market and commodity characteristics found in a successful futures market and in the Pacific Northwest soft white wheat market.

Commodity and Market Characteristics	Successful Futures Market ^{a/}			Pacific Northwest Market		
	Neces- sary	Desir- able	Unnec- essary	Does Have	Ques- tionable	Does Not Have
A commodity that is gradable and homogeneous (separable into lots)	X			X		
A commodity that is bulk and raw or semi-processed	X			X		
A commodity that is storable		X		X		
There is a non-restricted flow of the commodity through the market (competitive market)		X			X	
There is a large supply and demand for the commodity		X		X ^{b/}		
Prices do fluctuate and are determined competitively	X			X ^{c/}		
The market does have industry interest	X			X		
There is sufficient market news to all	X			X		

^{a/}Trading on the Chicago Board of Trade is convenient and the transaction costs are low. ^{b/} Comparing it to the soft red wheat now being traded. ^{c/} Comparing it to the other wheat varieties now being traded.

manufactured to the point of being a product identified with the process of a particular firm. Third, prices do fluctuate and are determined competitively. Fourth, market news is available, and fifth, interest by the traders is present and active.

One should remember, however, that events which have taken place in recent years suggest that the possession of the characteristics does not guarantee success and that the lack of them does not necessarily mean failure.

III. PACIFIC NORTHWEST SOFT WHITE WHEAT PROJECTION

Before one could successfully look at the issue of a new Pacific Northwest contract, some preliminary background work had to be accomplished. The previous chapter has identified the relevant considerations in assessing the likelihood of success for newly introduced futures contracts. In that same chapter, those considerations which were amenable to quantitative analysis were discussed. However, a number of key questions remain which cannot be answered from an analysis of past data. These include: Does the industry sense that a need for a futures market actually exists? Will potential hedgers make use of such a market? Will the market conditions and structure undergo any changes which might influence the desirability of a futures contract?

Such questions could not be answered by the data on supply, demand, and price. Sources of information other than bulletins, articles, and books had to be tapped. This chapter will develop a method of attack for the questions left unanswered by the previous chapters and will assess each issue using the technique.

The best source of information seemed to be in the form of advice and/or opinions offered by experts in the industry. If the opinions of a group of experts are to be put to practical use, one has

to combine them into a single group opinion.

If this group of experts were combined into one room, the group opinion would more likely be a compromise rather than a consensus. This compromise would often reflect the thinking of the experts who are the most verbal or of those who can talk the loudest. In technological forecasting and in information gathering, there is bound to be some disagreement. It is hard to get a consensus or a majority view from a group discussion.

In the early 1950's, the RAND Corporation began experimenting with methods of predicting, trying to eliminate the problem of the compromised opinion. RAND came up with the Delphi technique (originally named for Apollo's oracle at Delphi) (18). By 1964-65, this technique of technological prediction reached the corporate eye. Today the interest in this technological prediction technique is great, and such corporations as McDonnell Douglas, Weyerhaeuser Co., and Smith, Kline, and French have used it (8).

Delphi Technique

Basically, the Delphi technique works as follows: first, a panel of "experts" who are familiar with the industry, are chosen but kept anonymous from the others. During the first round of a set of questionnaires, each "expert" is asked to list the development or technological break-throughs which he thinks may come about

within the next 25 to 50 years. The results are tabulated and each "expert" or member of the panel gets a composite feedback of the ideas other members had. The second round begins by asking the participants to make forecasts predicting target dates for the potential technological breakthroughs identified by the group and to answer questions about specific ideas suggested. Once again the results are tabulated and a composite feedback with more questions are returned to the participants or "experts". This process is repeated three, four, or more times until the desired information is gathered and it is decided that a group consensus has been reached (8).

At a group discussion, one often spends his time defending his original idea instead of taking time to think and possibly change his mind so the best prediction can be arrived at. This is avoided with Delphi, along with the other difficulties and impracticalities of a group discussion previously mentioned.

With the Delphi technique, the investigator helps the "experts" toward a consensus by rewording his questions; and the "experts" help themselves toward a consensus by rethinking the problem in the light of the group response.

Experience has shown that obtaining reasons and comments from the participants achieves two purposes: (18)

- (1) It permits the investigator to reword or modify the questions so that the range of response will narrow.

- (2) It will also permit the investigator to state the minority opinions and feed them back to the whole group.

Since specific questions needed probing, and general information about the soft white wheat industry was also needed, the Delphi technique seemed to be the best method to obtain the needed information.

The Delphi technique was modified in segments when necessary, to fit this particular research project. All the panel members^{14/} were first contacted by telephone. During the conversation, the project and the Delphi technique were both briefly explained. With the first questionnaire, each panel member received an article reproduced from "Business Week" explaining the Delphi technique.

The questionnaire had a cover page briefly explaining the research project. Immediately following the cover page was an example, showing how the questionnaire should be filled in. The panel members were asked to suggest an event or issue, pertaining

^{14/} The panel members used by the Delphi technique are not intended to be a random sample. The number of people who know and understand the material in question are limited. These limited individuals can supply the most beneficial information in forming a consensus about the white wheat industry and the commodity futures market. For this study the panel consisted of four faculty and extension personnel, two bankers, five farmers, seven grain handlers, two brokers, one miller, three exporters, and an individual who has written some articles pertaining to the Pacific Northwest white wheat industry.

to the soft white wheat industry, which they thought might occur in the near future. Next they were asked to speculate as to the impact which might occur as a result of the suggested issue and the most likely date of the impact. On the bottom of each page, space was provided for general comments. The panel members could use and return any number of the ten forms they received.^{15/}

The first round objective was to probe the white wheat industry in general--and it did just that. Issues raised covered categories such as irrigation, the dock strike, changes in exports, competition from other countries, and the futures market.

In the second round, questions for each of the major categories were worded in a manner such that it required very little time on the part of the panel members to answer. On a scale from 1 to 5, they were asked to circle a number which best indicated their opinion or feeling toward the issue. Below is an example of how the questions were worded, allowing an answer to be given on a scale from 1 to 5.

The price of Soft White Wheat could get low enough to become competitive with feed grain prices and compete with feed grains for livestock feed.

1. Possibility of price becoming competitive

<u>very</u> <u>unlikely</u>					<u>very</u> <u>likely</u>
1	2	3	4	5	(circle one)

^{15/} A portion of the questionnaire used for this first round can be seen in Appendix B.

Each category, suggested in the first round, was expanded slightly. In the futures market category, for example, four broad questions were asked. One pertained to the millers and the exporters with regard to reducing price risk. Another asked if the producers needed a market for hedging. A third related to the possibility of hedging and more credit while the last asked if a futures contract was foreseeable in the future.^{16/}

In the third round, the same questions were asked, but the group response from the previous round was indicated.^{17/} This allowed each member to reconsider his first answer and gave him the possibility to answer the question once again after seeing what the others thought.

Once again some of the categories were expanded. One question was eliminated because of identical response by all the panel members. Both the second and third rounds, the same as the first, asked the participants to submit dates pertaining to each issue.

RAND discovered, through its research on the Delphi technique, that the interquartile range could be reduced by approximately one-third of its original size through continuing probes. After the third

^{16/} The questionnaire used in the second round can be seen in appendix C.

^{17/} The questionnaire used in the third round can be seen in appendix D.

round, it was discovered that the interquartile from the previous round had been reduced by one-third; therefore, further probes seemed to be unnecessary.

Other than just forecasting technology and target dates, the Delphi technique can be used to probe opinions and attitudes by using the feedback process as it did in this study.

After the results of the final round were known, it was thought important benefits could be obtained by discussing some of the issues further with a few of the industry people. One broker, one exporter, one banker, two grain handlers, and three university faculty members were interviewed.

Delphi Results

West Coast Dock Strike

Just prior to the conducting of the questionnaire for this study, the West Coast dock strike was settled. Everyone, during the first round, mentioned some issue related to the strike, so the topic was investigated. The first issue was the United States' reputation.

The United States losing its reputation as being a dependable source of soft white wheat.

1. Possibility of situation developing

very <u>unlikely</u>					very <u>likely</u>
1	2	3 4			5

2. When will this be felt?

Possible (probability = 10%) _____ 1972

Most likely date (probability = 50%) _____ 1972

Virtually certain (probability = 90%) _____ 1972

The panel's views ranged from very unlikely to very likely during round two. After the third round, the range had narrowed down, and the mean response was 3.25. This indicated the group was almost uncertain about the United States' reputation but concluded if the U. S. did lose its reputation, it would be during 1972.

Directly related was the issue of the foreign buyers switching their imports to other countries.

Foreign buyers may (or are) switching their imports of soft white wheat to other countries.

1. Possibility of this happening

<u>very unlikely</u>					<u>very likely</u>
1	2	3	4	5	

2. Seriousness of switch, so far as U. S. is concerned

<u>very unimportant</u>					<u>very important</u>
1	2	3	4	5	

3. Dates as to when the switch may take place

Possible (probability = 10%) _____ 1972

Most likely date (probability = 50%) _____ 1972

Virtually certain (probability = 90%) _____ 1972

4. Do you feel this loss could be permanent?

<u>very unlikely</u>	2 3		<u>very likely</u>
1		4	5

Most members thought it would likely happen, and the switch would be an important one as far as the U. S. was concerned. If the switch took place, they agreed it would happen during 1972. When asked if they thought the switch would be permanent, the panel responded by indicating it would be unlikely to uncertain. If there was a loss of trade, the members thought it would last from only one to three years. These results seem to indicate the setback caused by the dock strike would be only a temporary one; therefore, the white wheat industry should not suffer from any permanent damage.

One panel member suggested, in the first round, that exporters may switch to a practice that would allow shipping to continue even if a dock strike did exist.

Exporters may use SEABEE and LASH Systems and ocean-going barges to by-pass tide-water terminals.

1. Possibility of issue happening

<u>very unlikely</u>	2 3		<u>very likely</u>
1		4	5

2. Seriousness of the impact caused by the issue

<u>very unimportant</u>	2 3		<u>very important</u>
1		4	5

3. The time the impact could be felt

Possible (probability = 10%) _____ 1974

Most likely date (probability = 50%) _____ 1975

Virtually certain (probability = 90%) _____ 1980

The consensus of the panel, after the questioning had been completed, was that they were uncertain as to whether it would happen and uncertain of the impact it would have on the industry.

Soft White Wheat Demand

Table 12 shows the issues and responses, in compact form, related to the demand of soft white wheat. By looking at the results, one can see all the issues were answered closely the same. One can surmise from this that the demand for white wheat may shift from one country to another but no definite statement can be made about the change in total demand for soft white wheat.

Final demand for wheat in the world food market, including the U. S. market, is not related entirely to human need or nutrition considerations. It is also related to the various quantities of wheat which the consumers are willing to purchase at various prices for the wheat and its substitutes, an economic issue.

Table 12. Third round response on factors affecting soft white wheat demand.

- A. Continued economic development of countries now buying wheat has made their buyers sophisticated, thus causing their demand to change from soft white wheat to a hard wheat.
- B. Exports of soft white wheat may expand as new markets are established as some of the underdeveloped countries (still consuming primarily rice) become more developed.
- C. Wheat trade may develop with mainland China.
- D. Only a small number of countries import Pacific Northwest soft white wheat and these countries are becoming more self-sufficient in producing their own food grains. (Green Revolution^{a/})
- E. Wheat imports could increase in Indonesia and Malaysia despite the Green Revolution.

Issue	Possibility of issue happening or coming about ^{b/}				How important or serious will be impact be ^{b/}					Dates ^{c/}			
	very unlikely		very likely		very unimportant		very important			possible (prob=10%)	most likely (prob=50%)	virtually certain (prob=90%)	
A.	1	2	3	4	5	1	2	3	4	5	1974	1977	1980
B.	1	2	3	4	5	1	2	3	4	5	1974	1975	1980
C.	1	2	3	4	5	1	2	3	4	5	1973	1975	1980
D.	1	2	3	4	5	1	2	3	4	5	1973	1977	1980
E.	1	2	3	4	5	1	2	3	4	5	1973	1975	1980

^{a/}"Green Revolution" is a term used in recent development literature to represent the marked world grain production increases attributed to genetic advances in small grains, particularly wheat, corn, and rice.

^{b/}Interquartile range with the average response indicated by the vertical line.

^{c/}The median date.

Soft White Wheat Competes With Feed Grains

The price of soft white wheat could get low enough to become competitive with feed grain prices and compete with feed grains for livestock feed.

1. Possibility of price becoming competitive

<u>very unlikely</u>				<u>very likely</u>
1	2	3	4	5

2. Impact it would have on the soft white wheat industry

<u>very unimportant</u>				<u>very important</u>
1	2	3	4	5

3. When might this take place?

Possible (probability = 10%) _____ 1972

Most likely date (probability = 50%) _____ 1972

Virtually certain (probability = 90%) _____ 1973

4. Do you think this change will be permanent?

<u>very unlikely</u>				<u>very likely</u>
1	2	3	4	5

After the third round, the average opinion of the panel members was that they thought it was likely for the price of soft white wheat to get low enough to become competitive with feed grain prices. The result, they thought would be important to the white wheat industry by providing a new outlet for their product. When asked if they considered the price change would be permanent, the panel members'

feelings ranged from unlikely to likely with the average opinion being uncertain. They gave an estimate of one to three years for the price to remain competitive, with it beginning in 1972 or 1973. This indicates the use of soft white wheat may be on an increase for the next two to four years providing the price becomes competitive.

Just recently (July 8, 1972) Russia made an agreement with the United States to purchase \$750 million of U. S. -grown grains (wheat, corn, barley, rye, oats--at the Soviet Union's option) for the period from August 1, 1972, through July 31, 1975. The Russian people are after more animal protein in their diets. To accomplish this, the Russians must increase their livestock production beyond the capacity of their farms and climate to provide feed grain.

No one knows in what proportions the Russians will import the different types of grain. If the price of white wheat does become competitive with feed grain prices, this will be an opportunity to expand exports which the industry should pursue and take advantage of. This would be directly related to the strong feeling the panel showed in favor of the white wheat industry trying to develop or find new markets and uses domestically as well as in foreign countries for their wheat.

New Variety Introduction

New hybrid varieties may be introduced to the producer.

1. Possibility of the introduction of new varieties

<u>very unlikely</u>						<u>very likely</u>
1	2	3	4		5	

2. New varieties could be

<u>very unimportant</u>						<u>very important</u>
1	2	3	4		5	

3. Three dates as to when the introduction may take place

Possible (probability = 10%) _____ 1975

Most likely date (probability = 50%) _____ 1977

Virtually certain (probability = 90%) _____ 1980

Farmers should try to develop (through the experiment station) a lower protein content in the soft white wheat produced in the Pacific Northwest.

1. Is this possible?

<u>very unlikely</u>						<u>very likely</u>
1	2	3		4	5	

2. How important would lower protein be?

<u>very unimportant</u>						<u>very important</u>
1	2	3		4	5	

3. Time impact may be felt

Possible (probability = 10%) _____ 1973

Most likely date (probability = 50%) _____ 1975

Virtually certain (probability = 90%) _____ 1978

4. Do you think a price premium should be offered for the lower protein wheat? YES 10 NO 7

By 1975 to 1980 the panel thought it was likely that new hybrid varieties of wheat would be introduced to the producer. But when the question was asked of the group, if they thought the farmers, through the state experiment station, should try to develop a lower protein content soft white wheat, they were uncertain as to its possibility and importance, even though over 50 percent said that a price premium should be offered for the lower protein wheat. This seemed to leave the situation in a state where no definite statement could be expressed about it.

Soft White Wheat Contract

About 75 percent of the group concluded a futures contract would be established specifically for soft white wheat within the next three years. No one showed a negative opinion. Tables 13 and 14 have the results related to the futures market issue.

The general opinion of the group indicated they thought there was a need for a reliable market in which the producer could hedge his product. They also said the exporters and millers needed some way to reduce their price risk. All concluded an educational program would be necessary to inform the users on the mechanics of hedging

Table 13. Third round response on the need for a futures market.

- A. Exporters and millers need some way in which they can reduce their price risk.
- B. The producers should have a reliable market in which they could hedge their product.
- C. A futures contract may be established specifically for soft white wheat.

Issue	Possibility of issue happening or need existing ^{a/}					How important will the impact be ^{a/}					Dates ^{b/}		
	very unlikely					very unlikely		very important			possible (prob=10%)	most likely (prob=50%)	virtually certain (prob=90%)
A.	1	2	3	4	5	1	2	3	4	5	1973	1973	1975
B.	1	2	3	 4	5	1	2	3	 4	5			
C.	1	2	3	4	5	1	2	3	 4	5	1972	1974	1975

^{a/} Interquartile range with the average response indicated by the vertical line.

^{b/} The median date.

Table 14. Third round response on industry and speculative interest.

Question	Answer ^{a/}					
	<u>very unlikely</u>				<u>very likely</u>	
A. Do you think producers understand the mechanics of hedging?	1		2	3	4	5
B. Would producers need an educational program in the mechanics of hedging if they are to use the market effectively?	1	2	3	4		5
C. Do you consider there are enough (or will be enough) interested people in the industry to use the new contract once it got established?	1	2	3		4	5
D. Do you think it would be an attractive contract to the speculator?	1	2	3		4	5
E. If the new contract is established, do you think the volume of trade will be sufficient	1		2	3	4	5
	<u>less desirable</u>					<u>more desirable</u>
F. There is a floor price available to the farmers because of the loan price to program participants. Does this make hedging?	1	2		3	4	5

^{a/} Interquartile range with the average response indicated by the vertical line.

and how to integrate its use into their business.

Having sufficient volume was one point the participants thought might be lacking. At the same time, they saw no immediate problem attracting enough industry and speculative interest. Interest, and not the amount of the commodities supply, is a bigger factor which influences the volume of trade. Sufficient volume will exist with sufficient interest.

Issues of Conflicting Interest

The issues of irrigation and the midwest developing an export market for its red wheat had produced some very interesting comments. These two were the only issues in which some participants thought the practices have existed for the past five or ten years. At the same time, others expressed the opinion that the practices will come about within the next five to ten years. More shared the latter opinion which made the median date between 1974 to 1978. With such distinct variation, it is hard, if not impossible, to make a concluding comment.

Summary

The demand for soft white wheat is fluctuating (changing). Some countries are reducing their demand while other countries are expanding their demand. Also present is the possibility of creating

new markets, but only time will determine this. With this uncertainty present in the demand for soft white wheat, being able to make a proper hedge does seem to be desirable.

The industry panel decided a contract would be desirable. At the present time the industry does not appear to be going through any major changes which would make the introduction of the contract difficult.

IV. FUTURES CONTRACTS

Contract Failure

Why Some Contracts Fail^{18/}

The reasons why some markets, or contracts, fail is not readily apparent if they are at all ascertainable. A broad answer is,

Markets are not used when their use is not more profitable to existing and potential users than some other method of coping with financing and pricing problems (14, p. 325).

A successful futures market is equally attractive to longs and shorts; a zero-sum game. A market that works, works well; but a market that does not work, either dies or is brought back to life through change.

The history of market failures has revealed that there are about five reasons why a market may fail. The first reason for failure is that the market can be legislated out of existence. This is what happened to the onion market and is what the potato market is presently fighting against.

Another reason cited is that the market may lose its economic base. When the need of the hedger decreases for the use of the market, it will decline and disappear. A good example of this is the

^{18/} Based on information found in reference 3, 11, 14, and 23.

storage egg futures market. It was developed and grew because there was a need to shift price risks associated with inventory ownership. Through technological developments, egg production has become a year-around enterprise, thus eliminating seasonal production and the need for storage. Gradually the storage egg contract was used less and less since it was not suited for hedging fresh eggs. To fit the changing structure of the egg industry, the storage egg contract was exchanged for a fresh egg contract.

A third reason why a market may fail is that a weakness in the contract terms may exist that gives an advantage to either the buyer or seller. If the delivery terms favor either the buyer or seller, it will enable him to put a squeeze on the other as the delivery date approaches. This allows one to always profit at the expense of the other, thus discouraging the losers who later refuse to enter the market. It is thought that is what happened to the lard contract. Short hedgers had the advantage, used it, and the end result was that the buyers were frightened away.

In order to be successful, a futures contract must be equally appealing to both the buyer and the seller. This is accomplished by a contract reflecting commercial movements closely enough and broadly enough so price distortion is not introduced.

An active futures market may represent an increase in competition and those who hold power would naturally oppose futures trading

at its onset. Boycotting by commercial interests, because they fear the loss of their power, has caused some contract problems. Cottonseed oil futures trading was important until about 1963; since then it has died out. The reasons are not clear--and there are likely several--but one seems to be a boycott by cottonseed oil producers and users. They seem to be able to cover the bulk of their price level risks in soybean oil futures and work the differences between cottonseed oil and soybean oil prices to their own advantage (14).

A fifth reason cited for market failure is the lack of speculation. Speculation is essential to balance the hedging positions because the short and long positions taken by hedging firms are almost never in balance. Speculators also supply the much needed, but not essential, liquidity hedgers like to have.

The suggested reasons for market failures reveal about four items necessary for a market to succeed. First, there must be an economic need for the contract by the people in the industry. Second, the hedger must be interested in and attracted to the use of the futures contract, or be forced to use it because of competition. Third, active speculative interest must be aroused and attracted. Fourth, the contract terms must be agreeable to both the buyer and the seller, but favor neither one nor the other.

The second and third items are at times delayed by the "waiting

game" played by the hedger and the speculator. Markets are built by commercial users, and speculation is attracted. On the opposite side of the same issue, markets will not be used by commercial users unless speculation is present. To get the market off of dead center is the challenge.

Pacific Northwest Contract

Good contract terms will play an important part in determining the success of the Pacific Northwest contract. Through cooperation, the white wheat industry and the Chicago Board of Trade will have to work on the details. The contract suggested by the Steering Committee (which is immediately following) is based primarily on the soft red contract now being traded with modifications to make it more appropriate for the Pacific Northwest white wheat industry.

(PROPOSED) PACIFIC NORTHWEST WHEAT CONTRACT^{19/}

<u>Wheat:</u>	Class of White Wheat with all its sub-classes (Soft White Wheat, Western White Wheat, White Club Wheat, Hard White Wheat) to apply.
<u>Basis of Contract:</u>	Contract will be on a rail basis, Coast delivery as defined below.

^{19/} A copy of the presently traded red wheat contract may be found in appendix E.

<u>Delivery Months:</u>	August, October, January, April, June (conforming to the crop year in the Pacific Northwest.)
<u>Grades Deliverable:</u>	At contract price: No. 1 White Wheat (including subclasses). Portland Merchants Exchange Rules and Regulations (as published) to govern for discounts and/or premiums, but in no case shall wheat grading less than No. 2 be applicable.
<u>Trading Units:</u>	6,000 bushels round lots.
<u>Price Quotations and Minimum Fluctuations:</u>	Quoted in cents and eighth of a cent per bushel, with 1/8 cent per bushel (\$7.50 per round lots) as the minimum change.
<u>Carrying Charges:</u>	1/23rd of a cent per bushel per day for storage plus insurance.
<u>Points from which Delivery can be Made:</u>	Instore licensed and bonded public grain warehouses, that have rail loading facilities in Oregon, Washington, Idaho via warehouse receipt. The delivering warehouse is obligated to deliver to buyer FOB buyer's conveyance at point of delivery with rail freight to be for the account of the seller from that delivery point to the Coast. (The rail freight as defined in Rule III, Section I to be deducted from Coast settlement price at time of delivery.)
<u>Price Basis:</u>	Shall be "Coast" which is interpreted as meaning Pacific Northwest Terminals as follows: Longview, Kalama, Portland, Astoria, Vancouver, Seattle, or Tacoma.
<u>Commissions:</u> (non-members)	\$30.00 per round lot for traders in United States, Canada, Puerto Rico, Mexico, and Virgin Islands. \$36.00 per round lot for spread positions. \$20.00 per round lot for day trades.

<u>Daily Limits on Price Movement:</u>	10 cents per bushel advance or decline from previous day's close.
<u>Position Limits:</u>	3,000,000 bushels in any one futures or all futures combined.
1. Daily Trading Limit	
2. Position Limit	2,000,000 bushels in any one futures or all futures combined positions of 200,000 bushels require reports.
<u>Margin on Trade:</u>	Variable, consult your broker.
<u>Trading Hours:</u>	10:00 a. m. to 1:15 p. m. Central Daylight/Standard Time.

Delivery Months

The suggested delivery months are August, October, January, April, and June. It was thought that they conformed more closely with the white wheat crop year. With the trading months different than the months of the contract now trading on the Chicago Board of Trade, it will allow both wheat contracts to be traded in the same pit if the desire exists.

Contract Size

Two hopper cars or three box cars will hold 6,000 bushels. This was the main reason given for designating the new contract be 6,000 bushels instead of the standard 5,000 bushel contract which is now traded.

Some individuals consider both contracts, the one presently

being traded and the new suggested contract, should be the same size. Since the amount of 6,000 bushels is two hopper cars or three box cars, it is thought to be more appropriate to change the size of the present contract. Those in charge of making changes may think that the change is not necessary; then, the suggested contract should be reduced to 5,000 bushels. With both contracts being the same quantity, it would allow the speculator to operate an easier spread.^{20/}

It is recommended that both contracts be the same size. Either the present contract size should be increased by 1,000 bushels or the suggested contract for the Pacific Northwest be reduced to 5,000 bushels.

Carrying Charges

The carrying charges should cause no problem. The charge of 1/23 of a cent per bushel per day was taken from the Uniform Grain Storage Act which is presently functioning successfully for the cash market.

Deliverable Variety

Only the class of white wheat with its subclasses qualify for

^{20/} A spread (or straddle) may be defined as the purchase of one futures contract against the sale of another futures contract of the same commodity or a different commodity in the same or different markets (6).

delivery. No. 1 White Wheat, No. 1 Soft White Wheat, and No. 1 White Club Wheat qualify as the "basic grade" and will be accepted without a discount. Grades other than what was just mentioned can be delivered, but at a discount. Any white wheat grading less than No. 2 will not be acceptable.

Allowing only white wheat to be delivered preserves the export flavor in the market. This is important for those speculators who want to speculate in the export market.

Delivery

Delivery must be made at any instore licensed and bonded public grain warehouse, that has railroad loading facilities, located in Oregon, Washington, or Idaho, via warehouse receipt. The producer is liable for the freight charges from the delivery point to the most distant, designated Pacific Northwest tidewater terminal, located at Portland, Vancouver, Kalama, Longview, Astoria, Seattle, or Tacoma.

The rate for these charges shall be determined on the basis of the highest coast rate point unless application was accepted by the buyer for delivery to a coast point taking a lower rate, in which event the lower rate will apply. Interpreting this in another way, the price that the seller receives is the coast price minus the freight charges to the farthest coast terminal unless the buyer accepted the

application for delivery at a coast point requiring a lower rate. In this situation, the price received by the seller would be the coast price minus the lower rate, if it applied.

The grower may become psychologically disturbed by the fact that he is liable for freight charges to the farthest point if he decides to make delivery on a contract. This may be a contract provision against the grower.

One should not forget though, that it is possible for the grower to market his grain locally. In turn, he may buy wheat at the distant terminal delivery point for his actual delivery, instead of shipping his grain to the terminal delivery point for delivery.

Even though the majority of the white wheat in the United States is produced in the Pacific Northwest, one cannot overlook the fact that some white wheat is also grown elsewhere. For these other areas, there is no close delivery point. One of the individuals interviewed thought that white wheat should be deliverable to any qualified point, not just those which are located in Oregon, Washington, or Idaho.

The remaining aspects closely resemble the soft red contract now being traded except for the daily trading limits. The limit was increased from 2,000,000 bushels to 3,000,000 bushels to compensate for the increase of 1,000 bushels in contract size.

These contract specifications, plus others, are going to have

to be closely studied by both the white wheat industry and the Chicago Board of Trade. Agreement will have to be reached by both in order for a good contract to exist. With a good contract, the market has a much better chance of getting off of dead center.

V. SUMMARY AND CONCLUSION

Summary

As mentioned in Chapter I, the major objectives of this study are:

- (1) To discuss the characteristics of the Pacific Northwest soft white wheat and its market in relation to the characteristics traditionally thought necessary for the successful introduction of futures trading.
- (2) To project changes in market conditions and structure which would influence the proposed contract and to discuss the implications of these changes as they pertain to the contract.
- (3) To discuss the potential success (or failure) of Pacific Northwest soft white wheat as a futures commodity based on the data and information gathered.

Two secondary objectives are:

- (a) To provide a projection of the future of the industry.
- (b) To present and discuss the specific contract which has been drafted by the Steering Committee.

In brief form, the results of Chapter II are as follows:

- (1) Pacific Northwest soft white wheat is a bulk commodity, none of which is processed or manufactured to the point of being a

product identified with the process of a particular firm.

- (2) Binned and handled properly, the white wheat will maintain the quality it had when it was first put into storage. Consequently, the commodity can be stored through the major portion of the marketing year, meeting the requirements of scarcity if and when it does exist.
- (3) Being primarily soft white wheat with a low protein content gives the Pacific Northwest white wheat the necessary homogeneity needed for grading and standardization. With the inspection and weighing facilities available, the U. S. Grain Standards, which have served adequately for the cash market, could also serve adequately for the commodity market.
- (4) The amount of supply and price variation should cause no problem for white wheat since it is comparable to the wheats which are now traded on different exchanges. The average yearly supply of white wheat in the United States is about the same as the average yearly supply of soft red wheat--215 million bushels. Both have an average of being about 10 percent of the total U. S. wheat supply.

With supply, one always wants some uncertainty which causes price variation. Recalling the differences, price variation for soft white wheat is only \$.06 less than the range for soft red wheat, the same as the range which exists for hard

and dark hard winter, and \$.01 more than the range for dark northern spring. (Based on montly figures for 1967-1971).

Also related to supply is volume. During the time span of 1949 to 1969, the supply of hard red wheat far exceeded that of any other variety. It was considered that a large supply would mean a large volume. Actually this is not so. The contract volume of soft red wheat is far greater than the contract volume of hard red wheat, even though the supply of soft red wheat is smaller.

- (5) Based on reliable figures which start in 1967, it was determined that Pacific Northwest white wheat is about 18 percent of the total amount of wheat the U. S. exports. This percentage is just under 70 percent of the total Pacific Northwest white wheat supply. This implies that the majority of the Pacific Northwest white wheat is disposed of through the export market, a market much broader in area than the United States. An exporter, who was interviewed, mentioned that competition does exist in the exporting business which is composed of at least 6 major exporters, 13 Japanese firms, and 6-10 merchandisers, all who buy for exporting purposes.
- (6) The news broadcasts and newspapers carry the national as well as local news. Agricultural and market information can be found in U. S. Government reports, USDA reports, as well as

publications by trade associates, cooperatives, and other commodity handlers. News concerning the market should not be a problem. Even a simple phone call to a broker's office will give all the current information that is available.

- (7) This spring some wheat futures workshops were held in Eastern Oregon. The programs were received well with attendance and high participation. This does show a sign of interest by the people in the industry for a Pacific Northwest white wheat futures contract.

Results of the questionnaire pertaining to the futures market were mostly favorable. The participants determined there was a need in the industry for a new contract by which the producers, millers, exporters, and others could more efficiently use and reduce their present price risk. An educational program was greatly favored since the panel considered the producers' understanding of the mechanics of hedging was limited.

Attracting enough interest and trading volume seems to be the two factors which bother more people in the industry than any of the other factors. Sufficient trading volume did somewhat disturb the panel but they did have a stronger feeling in favor of the contract attracting industry and speculative interest. One should remember that interest is a bigger influencing factor of trading volume than the supply of the commodity.

The fact that there is a government loan price on wheat created some discussion as to its effect on price fluctuation. With the response of the panel members tabulated, it was revealed that the group thought the loan price would have no ill effect on the market. Surplus wheat is down considerably from the past years which has reduced the influence of the government loan price. Besides, it never did eliminate price fluctuations.

Conclusions

Looking back at the events and commodities which have been traded or are trading, the attributes often cited as necessary for successful futures trading are not necessarily required for a successful futures market. Some may even limit the progress of the market or cause failure. The same applies to the white wheat. The number of traditional characteristics it has will not guarantee its success, and, if any characteristics are lacking, does not mean assured failure.

The record of failures and limited success, along with the numerous examples of great success in futures trading, brings out the fact that all commodities are not equally adapted to successful trading in futures contracts. Success or failure may have been caused by imperfections of the contract, taxing regulations, mischievous intrusions of exogenous forces, temporary conditions of market

environment, or those concerned were not ready for change. Some futures contracts have been formulated prematurely and have failed. There is no definite statement out as to why the first white wheat contract failed; but one can speculate that it may have been formulated prematurely and those concerned were not ready for change which meant the timing was wrong and the need was not there.

Markets originate out of an economic need--the need to shift risk from those who do not have the inclination, the capacity, or the resources to carry it to those who specialize in risk assumption. The size of the market is determined by the amount of hedging. The firms which do most of the buying and selling must be persuaded regarding the advantages in using futures contracts, be forced in by competition, or just attracted to the market.

The contract specifications must satisfy the need of the industry and at the same time look attractive to both the longs and shorts. This will require close work within the industry and with the Chicago Board of Trade. If agreement can be reached, and if a contract is established, both the hedger and speculator need to be informed.

Education is required to inform and instruct the people in the industry. It will require them to invest some time and effort in learning what a futures contract really is and what it can do. For the hedger, a futures contract will not be an easy tool to use. Deciding when to get into the market, deciding whether to buy or sell,

is just a start. It requires time to watch the market, manage its use, and integrate it into one's operation. This is the point at which the Land Grant Universities have some responsibilities. Once the industry is educated, the futures contract will not make an unprofitable enterprise profitable, but it can make a profitable enterprise more lucrative. To handle and use a futures contract properly requires time and good management.

The industry will need to work closely with the Chicago Board of Trade, working out the contract details. Close coordination between the universities and the industry is required so that proper educational programs can be established. The Chicago Board of Trade has the responsibility to present the contract to the public, and the industry is responsible to supply the interest and hedging requirements.

Many think that now is the time to try to establish a Pacific Northwest white wheat futures contract. If the introduction could be made when the market is in a bullish trend, it would be an advantage in favor of the contract.

From the information and data gathered, it seems that the white wheat and its market have as much potential of being successfully traded as any commodity now traded. To get the market started and off dead center will be difficult, but with the proper amount of personal interest and a sincere effort by all of those

who should be concerned, it is possible.

The way the situation looks and what the results of the questionnaire indicated, the demand for white wheat is not decreasing. Some countries are shifting their wheat desires because of economic advances, but at the same time other countries are switching their tastes and preferences from rice to white wheat.

Price being the point in question may allow the soft white wheat industry to take advantage of the next three-year commitment Russia made for U. S. -grown grains.

BIBLIOGRAPHY

1. _____ Annual report of the Board of Trade of the city of Chicago. Chicago, Lincoln Printing Company, 1953-1964. 7 vols.
2. _____ Annual report of the Board of Trade of the city of Chicago. Chicago, Gunthorp-Warren Printing Company, 1966-1968. 2 vols.
3. Bakken, Henry H. Adaption of futures trading to live cattle. In: Futures trading in livestock-origins and concepts, ed. by Henry H. Bakken. Madison, Mimir Publisher Inc., 1970. p. 57-68.
4. Bakken, Henry H. Futures trading-origin, development and present economic status. In: Futures trading seminar, (Vol. 3), ed. by Erwin A. Gaumnitz. Madison, Mimir Publishers Inc., 1966. p. 1-35.
5. Brooks, Bruce L. An analysis of the Washington white wheat market relative to futures trading. Doctoral dissertation. Purdue, Purdue University, 1959. 266 numb. leaves. (Microfilm)
6. _____ Commodity trading manual. Wilmette, Belveal and Co., 1966. 184 p.
7. Due, John F. and Robert W. Clower. 5th ed. Intermediate economic analysis. Homewood, Richard D. Irwin, Inc., 1966. 481 p.
8. _____ Forecasters turn to group guesswork. Business Week, March 14, 1970, p. 130+.
9. Gold, Gerald. Modern commodity futures trading. 5th ed. New York, Commodity Research Bureau, Inc., 1968. 225 p.
10. Goossen, Jerome D. Commodity trading . . . gain or loss? VanNuys, Min-A-Print, Division, 1969. 222 p.

11. Gray, Roger W. Why does futures trading succeed or fail: an analysis of selected commodities. In: Futures trading seminar, (Vol. 3), ed. by Erwin A. Gaumnitz. Madison, Mimir Publishers Inc., 1966. p. 115-137.
12. Harston, Clive R. Marketing high protein wheat in the Northern Great Plains. Bozeman, January 1957. 138 p. (Montana. Experiment Station. Bulletin 527.)
13. Heady, Earl O. 5th printing. Economics of agricultural production and resource use. Englewood Cliffs, Prentice-Hall, Inc., 1964. p. 574.
14. Hieronymus, Thomas A. Economics of futures trading for commercial and personal profit. New York, Commodity Research Bureau, Inc., 1971. 338 p.
15. Kohls, Richard L. 3d ed. Marketing of agricultural products. New York, The Macmillian Company. 1967. 462 p.
16. Lebeck, Warren W. Unpublished speech given at the Oregon Wheat Growers League meeting held in The Dalles, Oregon, on May 25, 1971.
17. Nairn, Hohn and Bruce Brooks. The Pacific Northwest wheat market and futures trading. Pullman, April 1961. 34 p. (Washington. Agricultural Experiment Station. Technical Bulletin No. 38.)
18. North, Harper Q. and Donald L. Pyke. Probes of the technological future. Harvard Business Review, May-June 1969, p. 68-82.
19. Pacific Northwest Crop Improvement Association. Pacific Northwest wheat-1950. Wala Wala, n. d. 13 p.
20. Pacific Northwest Crop Improvement Association. Wheat production in certain Pacific Northwest counties. Pendleton. May 1963. 24 p.
21. Pacific Northwest Crop Improvement Association. Wheat production in certain Pacific Northwest counties. Pendleton, May 1964. 24 p.

22. Pacific Northwest Crop Improvement Association. 1966-1970. (Annual) Wheat production estimates by varieties in certain Pacific Northwest counties. Spokane, Washington.
23. Powers, Mark J. Effects of contract provisions on the success of a futures contract. *Journal of Farm Economics* 49:833-843. November 1967.
24. _____ Proceeding of fourth annual workshop of wheat marketing in the Pacific Northwest. Pullman, February 1965. 122 p. (Washington State University. Institute of Agricultural
25. Quinn, James Brian. Technological forecasting. *Harvard Business Review*, March-April 1967. p. 89-106.
26. Rust, Charles and George St. George. Grain Shipments in Montana. Bozeman, January 1969. 7 p. (Montana. Agricultural Experiment Station. Bulletin 624)
27. Seevers, G. L. Pacific Northwest white wheat exports during the 1960's. Corvallis, November 1970. 9 p. (Oregon. Agricultural Experiment Station. Special Report No. 314.)
28. Task Force. School of Agriculture. Issues and alternatives in wheat production and marketing. Corvallis, January 1970. 23 p. (Oregon State University. Agricultural Experiment Station.)
29. Thompson, Thomas William. Role of hard red winter wheat in the Pacific Northwest. Paper submitted for Master of Agriculture Degree. Corvallis, Oregon State University, 1971. 75 numb. leaves.
30. U. S. Dept. of Agriculture. Annual Statistics 1959. Washington, United States Printing Office, 1960. 632 p.
31. U. S. Dept. of Agriculture. Annual Statistics 1965. Washington, United States Printing Office, 1965. 635 p.
32. U. S. Dept. of Agriculture. Annual Statistics 1971. Washington, United States Printing Office, 1971. 639 p.

33. U. S. Dept. of Agriculture. Grain Division and Consumer and Marketing Service. Grain Market News-weekly summary and statistics. Washington, January 1967-December 1968. 2 vols.
34. U. S. Dept. of Agriculture. Grain Division and Consumer and Marketing Service. Grain Market News-weekly summary and statistics. Independence, January 1969-January 1972. 3 vols.
35. U. S. Dept. of Agriculture. Statistical Reporting Service, Pacific Northwest wheat summary-second quarter 1968 crop year. Portland, January 29, 1970. 2 p.
36. U. S. Dept. of Agriculture. Statistical Reporting Service. Pacific Northwest wheat summary-second quarter 1969 crop year. Portland, January 29, 1970. 4 p.
37. U. S. Dept. of Agriculture. Statistical Reporting Service. Pacific Northwest wheat summary-second quarter 1971 crop year. Portland, February 1, 1972. 4 p.
38. Waldron, Rodney K. and Rita McDonald. Preparation of the thesis. Corvallis, Oregon State University Press, 1966. 28 p.
39. Working, Holbrook. Economic functions of futures markets. In: Futures trading in livestock-origins and concepts, ed. by Henry H. Bakken. Madison, Mimir Publishers Inc., 1970. p. 3-47.

APPENDICES

APPENDIX A

Review of the Soft White Wheat Industry^{a/}Introduction

Soft white wheat is in the class of soft wheat which is usually grown in a climate where the winters are relatively mild. Umatilla, Sherman, Morrow, Gilliam, Wasco, and Union counties found in North-Central Oregon have the climate suited for soft white wheat production. This relatively mild winter climate is not only found within the geographic limits of Oregon, but also in the counties located in Eastern Washington and the northern section of Western Idaho.

This three state area of soft white wheat production is found in the Columbia Basin of the Pacific Northwest (PNW). See Figure A-1 for geographical location.

Soil and weather conditions play an important part in determining the amount of protein the wheat will have at maturity. Hard wheat with high protein is normally grown in an area where the winters are cold, followed by a hot dry summer. Since the weather does not follow this pattern in the Columbia Basin, hard wheat

^{a/} The material combined for this review can be found in reference 4, 17, 27, and 29.

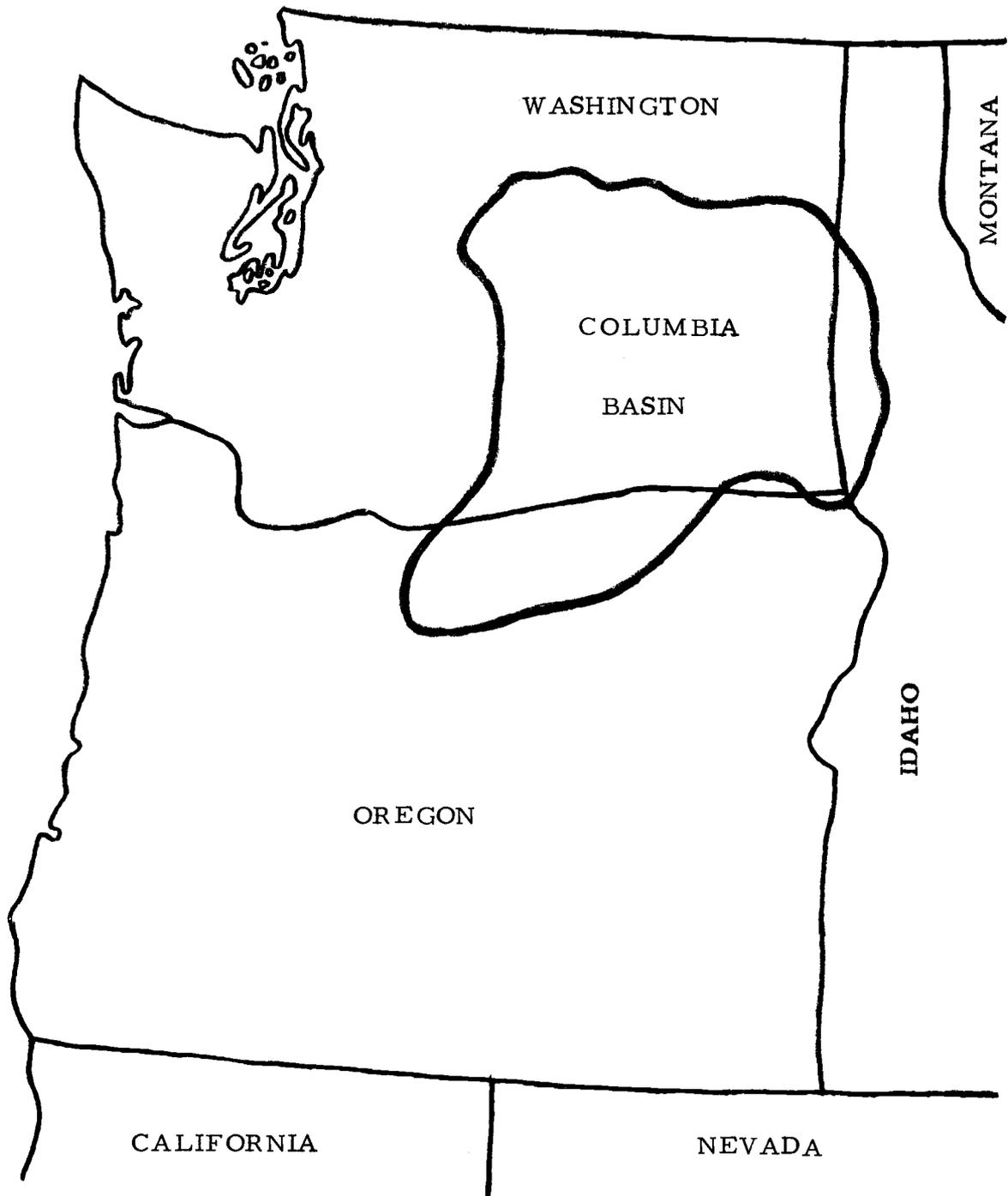


Figure A. 1. Pacific Northwest and the Columbia Basin.

Source: Reference 5, 1959

cannot be successfully grown here. It is true that the temperatures do reach 100°F, and above along the Columbia River, but the marine climate of the West Coast frequently causes cool weather during the pre-ripe period. During this pre-ripe period, which is about two weeks long, the translocation of nitrogen from the plant to the grain takes place. The shorter the period between the formation and ripening of the kernel, the higher the percentage of protein. A drought or physiological drought^{b/} shortly before maturity which curtails kernel development often produces the best protein content.

In North-Central Oregon and the PNW, the climate conditions vary widely from year to year, thus influencing the ability to produce consistently high protein hard red wheat. Soft white wheat, as a result, is grown. The protein content of this soft white wheat is low (6 to 11 percent). Flour made from this type of wheat has weak strength and stability. Without blending a higher protein wheat with this soft white wheat, it is undesirable for bread making. The flour has to be used for other products such as cakes, pastries, cookies, crackers, and noodles.

Market Demand

The demand for this type of low protein wheat in the United

^{b/} The disorganization of functions or of metabolism, the same as if an actual drought had occurred.

States is relatively small. Only 15 percent of the soft white wheat is used domestically for food, feed, and seed while the remaining 85 percent^{c/} is exported. Of the white wheat exports, over 90 percent went to the Big Six (India, Japan, Pakistan, Korea, Taiwan, and the Philippines). This means very few countries are large importers of the Pacific Northwest white wheat.

In the 1950's, Pacific Northwest white wheat was experiencing great acceptance in Japan. Two reasons for the cause of this were (1) the Japanese desired a very white wheat, and (2) the Columbia Basin wheat produced the type of food product that the Japanese people were familiar with.

Times are changing. As foreign countries develop, their tastes and preferences change. With increased income the people increase their expenditures on more expensive foods and stabilize, or even decrease, their demand for some types of food.^{d/} Noodles

^{c/} While it is commonly thought 85% is exported, specific Pacific Northwest wheat figures have revealed that since 1967, of the white wheat grown in the Pacific Northwest, the percentage exported has varied from 55% to 80%.

^{d/} The concept of income elasticity is a measure of the relation between a relative (percentage) change in income and the consequent relative (percentage) change in quantity demanded, while prices are held constant. The response may be positive or negative. For most commodities, an increase in income results in an increase in the purchase of that commodity. These types of commodities are known as "normal" goods. For "inferior" goods, the reverse is true; as incomes rise, people will buy fewer units of the good. These are the goods people buy only because they cannot afford anything better--

are considered inferior to bread or rice, not from the taste standpoint, but ranked nonetheless as a "lower-class" diet item. As countries develop further, their people buy more fruits, vegetables, and meats--and less food grains. This shift not only hurts white wheat exports; it can reduce all wheat exports.

In the last 10 to 15 years, Japan has changed its eating patterns and has now moved toward the consumption of more bread and rolls. This caused a stabilization or reduction in the imports of soft white wheat and created a greater demand for the higher protein hard red wheat.

Taiwan is an important cash market for U. S. wheat. About 90 percent of its imports of wheat is supplied by the United States. Several years ago, of the wheat imported by Taiwan, 60 percent was white wheat and 40 percent was hard red winter wheat. Today, with more consumption of bread, the proportions have reversed with 60 percent of their wheat imports being hard red winter while the remaining 40 percent being of the soft white variety.

The Philippines provided the second largest cash market for white wheat in 1968-69. The United States dominates their wheat imports, but only 20 percent of the Philippines' cash imports are

cheap cuts of meat, inexpensive clothing, etc. As their income rises, the people will shift to more expensive, preferred substitutes, and the demand for the inferior good will decrease (7). For further explanation and detail, one may look at any intermediate economic theory text.

white wheat. The percentage is expected to decrease to even a lower level in the future.

India and other Asian countries would prefer to import wheat and export rice because of the price differential. If the household market continues to be the largest outlet for wheat in India, white wheat will continue to be competitive since the housewife prefers it for chapaties.^{e/}

The Orient appears to be the most promising market for soft white wheat even though Japan itself is in the transition stage of moving toward more bread consumption.

There are other outlets for wheat under Public Law 480 in parts of Africa, Indonesia, and several other foreign countries. These markets hold little promise of absorbing the growing production potential of the Pacific Northwest.

Public Law 480 (P. L. 480) is a United States government-financed export program set up in 1954, largely designed to eliminate surplus stocks of agricultural commodities, particularly wheat. There are four separate approaches to stimulate exports under P. L. 480:

Title I permits countries that are short of dollars to buy products with their own currencies. Title II permits outright grants of food stocks to foreign countries in

^{e/} chapatty - a thin griddle-cake of unleavened bread used in Northern India.

emergencies or to aid in their development plans. Title III makes food supplies available for foreign distribution through other agencies and for barter in return for strategic materials we may need. Title IV authorized the credit sale of commodities for dollars with repayment terms up to 20 years (15, p. 216-217).

In most cases each approach is more realistically described as a "give away" or subsidy to the recipient country.

Concessional sales under Public Law 480 are expected to decrease in the future, due basically to a reshuffling of food aid programs, a trend toward self-sufficiency in several developing countries of Asia, and a tight budget situation in this country. Since over 60 percent of the Pacific Northwest white wheat exports have been moving under provisions of P. L. 480, the exports of soft white wheat could be in an unpleasant situation.

Production

Changing consumption patterns of the foreign countries are not the only factor influencing exports of soft white wheat. Total world wheat production has increased rapidly in the past 20 years.

Western Europe has accounted for 16 percent of the increase in world production in the period 1949-1968. Higher yield production brought this about. About 44 percent of the increase is attributed to the U. S. S. R. because of its higher production. North America contributed about 12 percent of the world increase despite its

substantially smaller acreage in 1964-1968 compared with 1949-1953. Acreage expansion in the 1950's and early 1960's allowed Asia to contribute 14 percent of the increase. The remaining 14 percent came from Eastern Europe, Africa, and Australia (28). This can be seen in Appendix Table 1.

Appendix Tables 2, 3, 4, and 5 show the increased production of the Pacific Northwest and each of the three individual states.

Umatilla County of Oregon produces over one-fourth of the state's total crop of soft white wheat. The other Oregon counties in the Columbia Basin in order of production volume are Sherman, Morrow, Gilliam, Wasco, and Union. Wheat production of the combined counties of the Willamette Valley account for about one quarter of Oregon's wheat production.

Wheat production in 1971 was even greater than the record set for Oregon in 1970. The reason for the increase is that some of the acres produced more than average. An example can be sighted in Wasco County. Crops ran 60-plus-bushels to the acre where the usual average was 30-35 bushels to the acre.

Increased production has counteracted the world food crisis which was so freely predicted to have occurred.

Difficulties

The West Coast dock strike which started on July 1, 1971,

Appendix Table 1. World wheat production by major geographic regions--five-year averages, 1949-53 to 1964-68.

	Average 1948-53	Average 1954-58	Average 1959-63	Average 1964-68
	(millions of tons)			
Western Europe	35.0	40.8	46.2	53.7
a. France	8.9	10.4	12.4	15.2
b. Italy	8.5	9.6	9.1	10.4
Eastern Europe	12.8	12.7	14.9	20.3
U. S. S. R.	38.8	64.3	70.6	90.0
N. and Central America	50.5	46.6	52.5	64.1
a. Canada	16.3	13.3	15.2	19.9
b. U. S.	33.5	32.0	35.7	42.0
South America	8.5	10.4	9.2	10.7
a. Argentina	5.9	7.2	6.7	8.1
Asia	24.7	30.5	35.5	40.8
Mainland China	24.3	27.3	23.8 ^{a/}	24.3 ^{a/}
Africa	5.1	6.2	6.1	6.7
Oceania	5.9	5.0	8.4	11.8
a. Australia	5.7	4.9	8.1	11.4
World Total	205.5	243.8	267.1	322.3
^{a/} Unofficial				

Source: Reference 28.

Appendix Table 2. Estimated wheat production in the Pacific Northwest.

Year	1950	1961 ^{b/}	1963 ^{b/}	1966 ^{b/}	1967	1968	1969	1970
	bushels	bushels	bushels	bushels	bushels	bushels	bushels	bushels
	percentage	percentage	percentage	percentage	percentage	percentage	percentage	percentage
Common White	55,333,884 ^{a/} 78.4	22,756,220 28.2	73,982,500 70.7	100,481,800 81.3	132,031,000 80.3	115,967,700 75.3	111,252,600 81.1	108,367,100 76.1
White Club		53,685,000 66.6	26,970,100 25.7	18,364,900 14.8	26,508,900 16.1	27,697,100 18.0	15,064,400 11.0	15,017,300 10.6
HRW	14,483,511 20.3	3,985,000 4.9	3,353,800 3.2	4,311,200 3.5	5,563,900 3.5	10,176,200 6.6	10,623,900 7.7	18,220,100 12.8
SRW	790,708 1.1	19,400 .1/	1,800 .1/	9,600 .1/	5,900 .1/	3,500 .1/	600 .1/	500 .1/
HRS	156,835 .2	151,600 .2	167,800 .2	346,300 .3	360,200 .2	217,700 .1	283,200 .2	744,900 .5
Durum		58,000 .1	50,000 .1	17,000 .1/	26,000 .1/	36,000 .1/	15,700 .1/	
Total	70,764,938 100	80,655,200 100	104,651,100 ^{c/} 100	123,544,800 100	164,495,900 100	154,099,200 100	137,240,400 100	142,366,600 100

^{a/} Distinction was not made between the white varieties.

^{b/} Production in certain Pacific Northwest counties.

^{c/} 125,000 bushels of total are of an unknown variety.

^{d/} Less than .1 of a percent.

Source: Reference 19, 20, 21, and 22.

Appendix Table 3. Estimated wheat production in eastern Washington.

Year	1950	1961 ^{b/}	1963 ^{b/}	1966 ^{b/}	1967	1968	1969	1970
	bushels	bushels	bushels	bushels	bushels	bushels	bushels	bushels
	percentage	percentage	percentage	percentage	percentage	percentage	percentage	percentage
Common White	34,393,889 ^{a/} 69.9	12,765,120	47,399,600	68,782,100	91,585,400	77,505,800	75,419,500	74,023,200
White Club		23.3	67.0	76.4	77.4	71.3	79.4	73.6
HRW	13,985,193 28.4	3,826,700 7.0	3,057,800 4.3	4,173,800 4.6	5,213,200 4.4	9,787,000 9.0	9,872,600 10.4	16,303,600 16.2
SRW	744,066 1.5	19,400 .1/	1,800 .1/	9,600 .1/	5,900 .1/	3,500 .1/	600 .1/	500 .1/
HRS	58,446 .1	9,100 .1/	62,900 .1	264,500 .3	216,100 .2	126,500 .1	162,100 .1	535,300 .6
Durum		58,000 .1	50,000 .1	17,000 .1/	26,000 .1/	36,000 .1/	15,700 .1/	16,700 .1/
Total	49,181,594 100	55,041,220 100	70,791,100 100	90,071,800 100	118,280,000 100	108,757,200 100	95,082,400 100	100,571,600 100

^{a/} Distinction was not made between the white varieties.

^{b/} Production in certain Eastern Washington counties.

^{.1/} Less than .1 of a percent.

Source: Reference 19, 20, 21, and 22.

Appendix Table 4. Estimated wheat production in Northern Idaho.

Year	1950	1961 ^{b/}	1963 ^{b/}	1966 ^{b/}	1967	1968	1969	1970
	bushels	bushels	bushels	bushels	bushels	bushels	bushels	bushels
	percentage	percentage	percentage	percentage	percentage	percentage	percentage	percentage
Common White	7,936,690 ^{a/}	6,109,100	10,232,900	13,850,700	17,167,600	18,230,900	15,079,100	14,247,900
White Club		63.3	91.4	98.8	96.4	96.9	98.4	99.1
White Club	96.4	3,405,100	732,100	74,100	460,500	458,700	84,500	20,000
		35.3	6.6	.5	2.6	2.4	.6	.1
HRW	169,781	10,300	20,000	10,400	48,700	44,200	68,300	34,500
	2.1	.1	.2	.1 ^{1/}	.2	.2	.4	.2
SRW	25,642							
	.3							
HRS	95,769	126,500	74,900	71,800	136,100	91,200	93,100	82,600
	1.2	1.3	.7	.5	.8	.5	.6	.6
Total	8,227,854	9,651,000	11,185,000 ^{c/}	14,031,000	17,812,900	18,825,000	15,325,000	14,385,000
	100	100	100	100	100	100	100	100

^{a/} Distinction was not made between the white varieties.

^{b/} Production in certain Northern Idaho counties.

^{c/} 125,000 bushels of total are of an unknown variety.

^{1/} Less than .1 of a percent

Source: Reference 19, 20, 21, and 22.

Appendix Table 5. Estimated wheat production of Eastern Oregon.

Year	1950	1961 ^{b/}	1963 ^{b/}	1966 ^{b/}	1967 ^{b/}	1968	1969	1970
	bushels	bushels	bushels	bushels	bushels	bushels	bushels	bushels
	percentage	percentage	percentage	percentage	percentage	percentage	percentage	percentage
Common White	13,511,389 ^{a/} 97.4	3,882,000	16,350,000	17,849,000	23,278,000	20,231,000	20,754,000	20,096,000
White Club		11,917,000	6,019,000	1,466,000	4,815,000	5,940,000	5,368,000	5,302,000
HRW	328,537	148,000	276,000	127,000	302,000	345,000	683,000	1,885,000
	2.4	1.0	1.2	.6	1.1	1.3	2.6	6.9
SRW	21,000							
	.2							
HRW	2,648	20,000	30,000	10,000	8,000		28,000	127,000
	.1/	.1	.1	.1	.1/		.1	.5
Total	13,863,574	15,967,000	22,675,000	19,502,000	28,403,000	26,517,000 ^{c/}	26,833,000	27,410,000
	100	100	100	100	100	100	100	100

^{a/} Distinction was not made between the white varieties.

^{b/} Production in certain Eastern Oregon counties.

^{c/} 1000 bushels are of the variety Mexico.

^{.1/} Less than .1 of a percent

Source: Reference 19, 20, 21, and 22.

injured the Pacific Northwest wheat industry before it was settled. About 200 million bushels of wheat which usually comes down the Columbia River to Oregon was held up. The Japanese went to the Australian market during the dock strike to fill their orders. It may take years to recapture these orders if the United States does get them back.

Fundamental decisions are required from all sectors of the wheat industry--producers, the grain trade, and government agencies--for the Pacific Northwest's wheat industry. The optimism of a few years ago, based on an expanded world demand for wheat, has now been replaced with almost an equal amount of pessimism. The expected markets did not materialize, while world wheat production increased substantially. India and Pakistan, large outlets for PNW wheat, reached some level of internal balance with wheat. It is too early to be certain whether this purported self-sufficiency by these nations will be temporary or permanent. The fact is that world wheat supplies of all classes far exceed quantities demanded at prices considered reasonable by producing regions (28, p. 22).

Government policies and programs rank high on their effect of the wheat exports for the Pacific Northwest. Since federal action and federal farm legislation has been so important in past years, and it is expected that federal legislation will continue to be important to the Pacific Northwest by the U. S. Congress, its implications should be intensively examined by the industries task force.

Alternatives

In view of these facts and other situations which have developed

in the past few years, the white wheat industry should look at every possible alternative for their product instead of relying almost totally on foreign exports. Finding other uses for their land may also be possible. This may become possible by the practice of irrigation.

Livestock and poultry feeding is a potential growth area for use of wheat and other cereals grown in the PNW. The industry must decide whether it can and wishes to produce cereals for a livestock-oriented industry over a long period of years.

The wheat industry should examine the changes that will be needed in market information and in the marketing system, if the PNW grain industry becomes more dependent on livestock and poultry feeding as a market for grains.

To assist the industry in reaching a decision, additional research and educational support is needed to appraise the profit potential of livestock production alternatives on marginal cropland in the Columbia Basin of Oregon (28, p. 22).

In the past few years there has been substantial interest in the possibility of using ethyl alcohol as an additive in fuels for internal combustion engines.^{f/} The use of ethyl alcohol would eliminate the need for the tetraethyl lead additive currently used in automobile fuels, thus eliminating one component (lead) of air pollution. More study and research needs to be done to determine the effects of gasoline-alcohol fuels in reducing automotive air pollution, and the

^{f/} 93 percent of the ethyl alcohol produced in the U. S. is prepared from cereal grains (28).

economic aspects of converting wheat to alcohol and its by-products.

The Oregon wheat industry, along with other farmers in the Pacific Northwest wheat areas, should consider the role of hard red winter wheat on his farm with our export market history and projections of expanding use of bread-type wheat in some of the foreign countries. More plant breeding and research needs to be done by the state experiment stations in order to come up with a variety that can survive the weather conditions found in North-Central Oregon.

This review was not meant to persuade the reader, but to inform and reveal some of the facts. Also some of the material presented is no longer true.

APPENDIX B

Research Questionnaire (Round One)

November 19, 1971

Mr. Robert L. Sargent
Agricultural Extension Service
College of Agriculture
University of Idaho
Moscow, ID 83843

RE: Telephone conversation on November 18, 1971

Dear Mr. Sargent:

Enclosed you will find two items; one is an article taken from "Business Week" explaining the Delphi Technique. This technique was developed by RAND Corporation for long-range forecasting and is the questionnaire technique in which you are asked to participate.

Each panelist receives a feedback of the results as the study progresses. Also, each member remains anonymous, thus allowing him to change his mind freely if he so desires.

The second enclosed item is the questionnaire we discussed in our telephone conversation. The cover page on the questionnaire explains it briefly. A self-addressed, stamped envelope is also included for your convenience.

The results of this and following questionnaires will be used on a thesis project for an M. S. degree at Oregon State University.

Since the panel is composed of only a small group of experts, your response is essential. Your agreement to participate is greatly appreciated, and the results will be sent to you as soon as they are received and compiled.

If you have any questions, please call me at (503) 754-2942.

Sincerely yours,

Norbert S. Ries
Graduate Research Assistant

cp
Enclosures

SOFT WHITE WHEAT
in the
PACIFIC NORTHWEST

This type of questionnaire was developed by RAND Corporation for long-range forecasting. In the first round the panelists are asked to make predictions or forecasts as to what may affect the industry in question. The groups' results are sent back to each panelist with further questions.

In this first round you are asked to forecast or predict those items which you think may affect the Soft White Wheat Industry in the Pacific Northwest. A completed sample page of the questionnaire is provided to serve as a guideline for you.

There are ten forms included for your convenience. You are asked to use as many as you feel necessary and return them in the stamped, self-addressed envelope. Please do not feel that you must use all ten forms.

The results of this and the following questionnaires will be used on a thesis project for an M. S. degree at Oregon State University.

Your agreement to participate in this study is appreciated and since the panel is composed of a small group of experts, your response is important.

(Sample)*
SOFT WHITE WHEAT
in the
PACIFIC NORTHWEST

Item or Issue:

Loss of confidence by importers of U. S. wheat.

Impact Caused by Item or Issue:

The U. S. may lose some of their foreign importers because some countries lost confidence in the U. S. as being a dependable source of soft white wheat.

Most Likely Time of Impact:

1973

Comments:

Recent dock strikes are causing prime customers, such as Japan to look elsewhere for supplies. Japan, for example, the largest cash customer for U. S. soft white wheat, has only a two or three month storage capacity for grain. They have depended upon our storage and steady movement out of that storage as a solution to their storage problem. The dock strike stopped the steady movement out of our storage, causing Japan to look elsewhere for their wheat. Japan's confidence in the U. S. serving as their reliable source of soft white wheat has been reduced from its former level.

* This sample page is an example of an answer given by one panel member who has already received and returned his questionnaire.

SOFT WHITE WHEAT
in the
PACIFIC NORTHWEST

ITEM OR ISSUE:

IMPACT CAUSED BY ITEM OR ISSUE:

MOST LIKELY TIME OF IMPACT:

COMMENTS:

APPENDIX C

Research Questionnaire (Round Two)

January 20, 1972

Mr. Robert L. Sargent
Agricultural Experiment Station
College of Agriculture
University of Idaho
Moscow, ID 83843

Dear Mr. Sargent:

Enclosed you will find a copy of the research questionnaire pertaining to the Soft White Wheat Industry in the Pacific Northwest. This is the second round of the Delphi Technique, which was explained earlier to you. This gives you the opportunity to revise your previous thoughts, if you feel it is necessary, and allows you to comment on the ideas suggested by other panel members.

The cover page on the questionnaire explains it briefly. Once again, there is a self-addressed, stamped envelope enclosed for your convenience.

The participation thus far has been very good and I thank you for your cooperation and assistance. Remember, each questionnaire remains anonymous. If you have any questions, please call me at (503) 754-2942.

Sincerely yours,

Norbert S. Ries
Graduate Research Assistant

cp
Enclosure

SOFT WHITE WHEAT
in the
PACIFIC NORTHWEST

This is known as the "second round" of the Delphi Technique. The results of this and the following questionnaire will be used on a thesis project for an M. S. degree at Oregon State University. As you proceed through the questionnaire, feel free to make any comments which you feel are appropriate. Space has been provided for your comments.

SOFT WHITE WHEAT
in the
PACIFIC NORTHWEST

I. The price of Soft White Wheat could get low enough to become competitive with feed grain prices and compete with feed grains for livestock feed.

1. Possibility of price becoming competitive

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Impact it would have on the Soft White Wheat industry

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. When may this take place? (Give three dates; the first date should be the earliest you consider possible, the second should be the date you consider most likely, and the third should be your most pessimistic estimate.)

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

II. Listed below are several factors which may take place as a result of the dock strike.

A. The United States losing its reputation as being a dependable source of Soft White Wheat.

1. Possibility of situation developing

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Seriousness of impact on demand if U. S. does lose its reputation as being a dependable supplier.

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. When will this be felt?

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

- B. Exporters may use SEABEE and LASH systems and ocean-going barges to by-pass tide-water terminals.

1. Possibility of issue happening.

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Seriousness of the impact caused by the issue

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. The time the impact could be felt (give three dates as before).

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

C. Foreign buyers switching their imports of Soft White Wheat to other countries.

1. Possibility of this happening

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Seriousness of switch as far as the U. S. is concerned

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. Dates as to when the switch may take place

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

III. New hybrid varieties may be introduced to the producer

1. Possibility of the introduction of new varieties

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. New varieties could be

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. Give three dates as to when the introduction may take place.

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

- IV. Irrigation systems may be set up on existing dry land wheat acres causing more concentrated production per acre.

1. Possibility of the above happening

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. How important could the outcome be?

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. The time the impact could be felt

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

V. Demand of Soft White Wheat can be affected by many factors.
Listed below are a few of these factors.

A. Continued economic development of countries has made the export buyers sophisticated, thus causing their demand to change from a Soft White Wheat to a Hard Red Wheat.

1. Could this change be coming about?

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. How important would the change be?

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. List three dates as to when this change may take place.

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

B. Exports of Soft White Wheat may expand as new markets are established as some of the underdeveloped countries become more developed.

1. Possibility of issue happening

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Seriousness of the impact caused by the issue

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. Time impact may be felt

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

C. Trade may develop with mainland China

1. Possibility of trade developing

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. How important would this trade be?

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. When could this trade begin (give three dates)?

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

D. Only a small number of countries import Pacific Northwest Soft White Wheat and these countries are becoming more self-sufficient in producing their own food grains (Green Revolution).

1. Possibility of the above happening

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Seriousness of the impact

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. Possible time when this may come about

Earliest possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

E. Politically, the amendment to the Strategic Storable Agricultural Commodities Act sponsored by Representative John Melcher of Montana may be important.

1. What is its possibility?

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Seriousness of the impact it may cause

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. Give three dates as to when the effect may be felt.

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

VI. Farmers should try to maintain a lower protein content in the Soft White Wheat produced in the Pacific Northwest.

1. Is this possible?

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. How important would lower protein be?

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. Time impact will be felt

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

VII. The Midwest may develop an export market for its Soft Red Wheat.

1. Possibility of issue happening

very
unlikelyvery
likely

1 2 3 4 5 (circle one)

2. Significance of the impact caused by the issue

very
unlikelyvery
likely

1 2 3 4 5 (circle one)

3. Time impact may be felt

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

VIII. Several issues related to the futures market (or the commodities market) and the Soft White Wheat are listed below.

A. Exporters and millers need some way in which they can reduce their price risk.

1. Will this ever come about?

very
unlikelyvery
likely

1 2 3 4 5 (circle one)

2. Will the impact be

very
unimportantvery
important

1 2 3 4 5 (circle one)

3. Time impact may be felt

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

B. The producers should have some reliable market in which they could hedge their product.

1. Does such a need exist?

very unlikelyvery likely

1 2 3 4 5 (circle one)

2. Impact of good hedging availability

very unimportantvery important

1 2 3 4 5 (circle one)

3. When may the above issue be felt?

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

C. Being able to hedge would make borrowing money an easier task for the producer of Soft White Wheat.

1. Would it make credit easier?

very unlikelyvery likely

1 2 3 4 5 (circle one)

2. How necessary is additional credit?

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. How long would it be before this will come about?

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

IX. In the near future, the United States may have to compete with Australia and other producing countries of Soft White Wheat for the export market.

1. Possibility of this competition developing

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Impact it will have on the U. S. market

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. How soon could this come about?

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

X. Repercussion of the Agricultural Act of 1970 on Soft White Wheat in the Pacific Northwest.

1. Possibility of the above happening

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Impact it would cause

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. The time the impact may be felt

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

XI. Wheat imports could increase in Indonesia and Malaysia despite the Green Revolution.

1. Possibility of the above happening

very
unlikely

very
likely

1 2 3 4 5 (circle one)

2. Impact it will cause

very
unimportant

very
important

1 2 3 4 5 (circle one)

3. When could the increase take place?

Possible (probability = 10%) _____

Most likely date (probability = 50%) _____

Virtually certain (probability = 90%) _____

4. Comments:

XII. General Comments:

APPENDIX D

Research Questionnaire (Round Three)

March 3, 1972

Mr. Robert L. Sargent
Agricultural Extension Service
College of Agriculture
University of Idaho
Moscow, ID 83843

Dear Mr. Sargent:

Enclosed you will find a copy of the research questionnaire pertaining to the Soft White Wheat Industry in the Pacific Northwest. This gives you the opportunity to revise your previous responses, if you feel it necessary, in light of the panel response pattern.

The questionnaire is explained briefly on its cover page. There is a self-addressed, stamped envelope enclosed for your convenience.

Remember, each questionnaire remains anonymous. The participation has certainly been very good so far and I want to thank you for your cooperation and assistance.

If you have any problems, please call me at (503) 754-2942.

Sincerely yours,

Norbert S. Ries
Graduate Research Assistant

cp
Enclosure

SOFT WHITE WHEAT
in the
PACIFIC NORTHWEST

This is known as the "third round" of the Delphi Technique. The results of this and the previous questionnaires will be used on a thesis project for an M. S. degree at Oregon State University. The procedure for this questionnaire is as follows:

1. The response of the panel has been indicated for the questions.* A horizontal line indicates the interquartile (observations remaining after eliminating the top quarter and the bottom quarter) response range while the vertical line indicates the mean (average) response of all the observations. The date indicated is the median date (the middle observation after listing the dates in ascending order.)
2. Please indicate your answers on the same questionnaire, but in ink.
3. Feel free to make any comments which you feel are appropriate in the space provided.
4. You will notice some of the questions have additional sections. Please answer the new sections also.

*The - - - line indicates the initial response.

SOFT WHITE WHEAT

in the

PACIFIC NORTHWEST

- I. The price of Soft White Wheat could get low enough to become competitive with feed grain prices and compete with feed grains for livestock feed.

1. Possibility of price becoming competitive

very
unlikely

very
likely

1 2 3 ~~4~~-----~~5~~ (circle one)

2. Impact it would have on the Soft White Wheat Industry

very
unimportant

very
important

1 2 3 ~~4~~-----~~5~~ (circle one)

3. When might this take place? (Give three dates: the first date should be the earliest you consider possible; the second should be the date you consider most likely; and the third should be your most pessimistic estimate.)

Possible (probability = 10%) 1972 1972

Most likely date (probability = 50%) 1972 1972

Virtually certain (probability = 90%) 1973 1973

4. Do you think this change will be permanent?

very
unlikely

very
likely

1 ~~2~~-----~~3~~-----4 5 (circle one)

5. If it is not a permanent change, how many years do you feel the price of Soft White Wheat will remain competitive with feed grain prices? _____

6. Comments:

II. In the near future, the United States may have to face more severe competition with Australia and other producing countries of Soft White Wheat for the export market.

1. By 1975, what percentage of wheat volume in the Soft Wheat importing countries will be supplied by Australia and other countries? (Give percentage of volume)

Possible percentage _____

Most likely percentage _____

Virtually certain percentage _____

2. By 1980, what percentage of the wheat volume in the Soft Wheat importing countries will be supplied by Australia and other countries?

Possible percentage _____

Most likely percentage _____

Virtually certain percentage _____

3. Comments:

III. Listed below are several issues related to the futures market (or the commodities market) and the Soft White Wheat.

A. A futures contract may be established specifically for Soft White Wheat.

1. Possibility of the above happening

very
unlikely

very
likely

1

2

3

~~4~~-----5

(circle one)

2. Importance of the impact the contract may have

very
unimportant

very
important

1 2 ~~3~~ | ~~4~~ 5 (circle one)

3. Possible date contract may be established (give three dates).

Possible (probability = 10%) 1972 1972

Most likely date (probability = 50%) 1974 1974

Virtually certain (probability = 90%) 1975 1975

4. Do you consider there are enough (or will be enough) interested people in the industry to use the new contract once it got established?

very
unlikely

very
likely

1 2 ~~3~~ | ~~4~~ 5 (circle one)

5. Do you think it would be an attractive contract to the speculator?

very
unlikely

very
likely

1 2 ~~3~~ | ~~4~~ 5 (circle one)

6. If the new contract is established, do you think the volume of trade will be

insufficient

sufficient

1 ~~2~~ | ~~3~~ 4 5 (circle one)

7. Comments:

B. Exporters and millers need some way in which they can reduce their price risk.

1. Will this ever come about?

very unlikely
very likely

1 2 3 ~~4~~-----5- (circle one)

2. Will the impact be

very unimportant
very important

1 2 3-----~~4~~-----5- (circle one)

3. Time impact will be felt

Possible (probability = 10%)	<u>1973</u>	<u>1973</u>
Most likely date (probability = 50%)	<u>1973</u>	<u>1973</u>
Virtually certain (probability = 90%)	<u>1975</u>	<u>1975</u>

4. Comments:

C. The producers should have some reliable market in which they could hedge their product.

1. Does such a need exist?

very unlikely
very likely

1 2 3-----~~4~~-----5- (circle one)

2. Impact of good hedging availability

very unimportant
very important

1 2 3-----~~4~~-----5- (circle one)

3. Do you think producers understand the mechanics of hedging?

very
unlikely

very
likely

~~1~~ ——— | ~~2~~ 3 4 5 (circle one)

4. There is a floor price available to the farmers because of the loan price to program participants. Does this make hedging

less
desirable

more
desirable

1 ~~2~~ ——— | ~~3~~ 4 5 (circle one)

5. Comments:

- D. Being able to hedge would make borrowing money an easier task for the producer (also miller and exporter of soft white wheat).

1. Would it make credit easier?

very
unlikely

very
likely

1 ~~2~~ - - - - - | ~~3~~ - - - - - | ~~4~~ 5 (circle one)

2. How necessary is additional credit?

very
unimportant

very
important

1 2 ~~3~~ - - - - - | ~~4~~ - - - - - | ~~5~~ (circle one)

3. If a commodity futures contract were established, how long would it take before hedging could be used as an effective instrument of credit? (give number of years)

Possible time lag (probability = 10%) _____

Most likely time lag (probability = 50%) _____

Virtually certain time lag (probability = 90%) _____

4. Would producers need an educational program in the mechanics of hedging if they are to use the market effectively?

very
unlikely

very
likely

1 2 3 4 ~~5~~ (circle one)

5. Would loan officers need an educational program in the mechanics of hedging if they are to utilize the market effectively?

very
unlikely

very
likely

1 2 3 4 ~~5~~ (circle one)

6. Comments:

IV. Wheat imports could increase in Indonesia and Malaysia despite the Green Revolution.

1. Possibility of the above happening

very
unlikely

very
likely

1 2 3-----~~4~~-----5 (circle one)

2. Impact it will cause

very
unimportant

very
important

1 2 3 ~~4~~-----5 (circle one)

3. When could the increase take place? (give three dates)

Possible (probability = 10%) 1973 1973

Most likely date (probability = 50%) 1975 1975

Virtually certain (probability = 90%) 1980 1980

4. Comments:

V. The Midwest may develop an export market for its red wheat.

1. Possibility of issue happening

very unlikelyvery likely1 2 ~~3~~ ~~4~~ 5 (circle one)

2. Significance of the impact caused by the issue

very unimportantvery important1 2 ~~3~~ ~~4~~ 5 (circle one)

3. Time impact may be felt

Possible (probability - 10%) 1974 1974Most likely date (probability = 50%) 1978 1978Virtually certain (probability = 90%) 1980 1980

4. Comments:

VI. Demand of Soft White Wheat can be affected by many factors.
Listed below are a few of these factors.

A. Continued economic development of countries now buying wheat has made their buyers sophisticated, thus causing their demand to change from Soft White Wheat to a Hard wheat.

1. Could this change be coming about?

very unlikelyvery likely1 2 ~~3~~ ~~4~~ 5 (circle one)

2. How important would the change be?

<u>very</u> <u>unimportant</u>				<u>very</u> <u>important</u>		
1	2	3	4	5		(circle one)

3. List three dates as to when this change may take place

Possible (probability = 10%)	<u>1974</u>	<u>1974</u>
Most likely date (probability = 50%)	<u>1977</u>	<u>1978</u>
Virtually certain (probability = 90%)	<u>1980</u>	<u>1980</u>

4. Comments:

B. Exports of Soft White Wheat may expand as new markets are established as some of the underdeveloped countries (still consuming primarily rice) become more developed.

1. Possibility of the issue happening

<u>very</u> <u>unlikely</u>				<u>very</u> <u>likely</u>		
1	2	3	4	5		(circle one)

2. Seriousness of the impact caused by the issue

<u>very</u> <u>unimportant</u>				<u>very</u> <u>important</u>		
1	2	3	4	5		(circle one)

3. Time impact may be felt

Possible (probability = 10%)	<u>1974</u>	<u>1974</u>
Most likely date (probability = 50%)	<u>1975</u>	<u>1975</u>
Virtually certain (probability = 90%)	<u>1980</u>	<u>1980</u>

4. Comments:

C. Wheat trade may develop with mainland China.

1. Possibility of trade developing

very unlikelyvery likely1 2 ~~3~~-----~~4~~ 5 (circle one)

2. How important would this trade be?

very unimportantvery important1 2 ~~3~~-----~~4~~-----~~5~~ (circle one)

3. When could this trade begin (give three dates)?

Possible (probability = 10%) 1973 1973Most likely date (probability = 50%) 1975 1975Virtually certain (probability = 90%) 1980 1980

4. Comments:

D. Only a small number of countries import Pacific Northwest Soft White Wheat and these countries are becoming more self-sufficient in producing their own food grains. (Green Revolution)

1. Possibility of the above happening

very unlikelyvery likely1 2 ~~3~~-----~~4~~-----~~5~~ (circle one)

2. Seriousness of the impact

very
unimportant

very
important

1 2 ~~3~~-----|-----4-----5-- (circle one)

3. Possible time when this may come about

Earliest possible (probability = 10%) 1973 1973

Most likely date (probability = 50%) 1977 1977

Virtually certain (probability = 90%) 1980 1980

4. Comments:

VII. Farmers should try to develop (through the experiment station) a lower protein content in the Soft White Wheat produced in the Pacific Northwest.

1. Is this possible?

very
unlikely

very
likely

1 2 ~~3~~-----|-----4-----5 (circle one)

2. How important would lower protein be?

very
unimportant

very
important

1 2 ~~3~~-----|-----4-----5 (circle one)

3. Time impact may be felt

Possible (probability = 10%) 1973 1973Most likely date (probability = 50%) 1975 1975Virtually certain (probability = 90%) 1978 19774. Do you think a price premium should be offered for the lower protein wheat? YES 10 NO 7

5. Comments:

VIII. Listed below are several factors which may take place (or have taken place) as a result of the dock strike.

A. The United States losing its reputation as being a dependable source of Soft White Wheat.

1. Possibility of situation developing

very unlikelyvery likely1 ~~2~~ ~~3~~ 4 ~~5~~ (circle one)

2. When will this be felt? (Give three dates as before)

Possible (probability = 10%) 1972 1972Most likely date (probability = 50%) 1972 1972Virtually certain (probability = 90%) 1972 1972

3. Comments:

B. Foreign buyers may (or are) switching their imports of Soft White Wheat to other countries.

1. Possibility of this happening

very
unlikely

very
likely

1 2 3 ~~-----~~ 4 ~~-----~~ 5 (circle one)

2. Seriousness of switch, as far as U. S. is concerned

very
unimportant

very
important

1 2 3 ~~-----~~ 4 ~~-----~~ 5 (circle one)

3. Dates as to when the switch may take place

Possible (probability = 10%) 1972 1972

Most likely date (probability = 50%) 1972 1972

Virtually certain (probability = 90%) 1972 1972

4. Do you feel this loss could be permanent?

very
unlikely

very
likely

1 ~~2~~ 3 4 5 (circle one)

5. If the loss is not permanent, how many years do you feel it will last? _____

6. Comments:

C. Exporters may use SEABEE and LASH Systems and ocean-going barges to by-pass tide-water terminals.

1. Possibility of issue happening

very unlikelyvery likely

1 ~~2~~-----~~3~~-----4 5 (circle one)

2. Seriousness of the impact caused by the issue

very unimportantvery important

1 ~~2~~-----~~3~~-----4 5 (circle one)

3. The time the impact could be felt

Possible (probability = 10%) 1974 1973Most likely date (probability = 50%) 1975 1975Virtually certain (probability = 90%) 1980 1980

4. Comments:

IX. New hybrid varieties may be introduced to the producer.

1. Possibility of the introduction of new varieties

very unlikelyvery likely

1 2 3 ~~4~~-----~~5~~----- (circle one)

2. New varieties could be

very unimportantvery important

1 2 ~~3~~-----~~4~~-----~~5~~----- (circle one)

3. Give three dates as to when the introduction may take place.

Possible (probability = 10%)	<u>1975</u>	<u>1975</u>
Most likely date (probability = 50%)	<u>1977</u>	<u>1976</u>
Virtually certain (probability = 90%)	<u>1980</u>	<u>1980</u>

4. Comments:

X. Irrigation systems may be set up on existing dry land wheat acres causing more concentrated production per acre. In the previous round, did you assume the land would be planted to something other than white wheat once the irrigation system was set up?

YES 12 NO 5

1. Possibility of the above happening

<u>very unlikely</u>				<u>very likely</u>	
1	2	3	4	5	(circle one)

2. How important could the outcome be?

<u>very unimportant</u>				<u>very important</u>	
1	2	3	4	5	(circle one)

3. Time the impact could be felt

Possible (probability = 10%)	<u>1975</u>	<u>1975</u>
Most likely date (probability = 50%)	<u>1977</u>	<u>1977</u>
Virtually certain (probability = 90%)	<u>1980</u>	<u>1980</u>

4. Comments:

XI. The White Wheat Industry should try to develop new markets domestically.

strongly
disagree

strongly
agree

1 2 3 ~~4~~ | ~~5~~ (circle one)

XII. The White Wheat Industry should try to find some other uses in foreign countries for their product.

strongly
disagree

strongly
agree

1 2 3 ~~4~~ | ~~5~~ (circle one)

APPENDIX E

RED WHEAT CONTRACT

- Delivery Months: July, September, December, March, May.
- Grades Deliverable: At the contract price: No. 2 Soft Red, No. 2 Dark Hard Winter, No. 2 Hard Winter, No. 2 Yellow Hard Winter, No. 2 Dark Northern Spring, No. 1 Northern Spring, No. 2 Heavy Northern Spring, No. 3 Heavy Soft Red, No. 3 Heavy Dark Hard Winter, No. 3 Heavy Hard Winter, No. 3 Heavy Yellow Hard Winter, No. 3 Heavy Dark Northern Spring.
- At 1¢ premium: No. 1 Soft Red, No. 1 Dark Hard Winter, No. 1 Hard Winter, No. 1 Yellow Hard Winter, No. 1 Dark Northern Spring, No. 2 Heavy Soft Red, No. 2 Heavy Dark Hard Winter, No. 2 Heavy Hard Winter, No. 2 Heavy Yellow Hard Winter, No. 2 Heavy Dark Northern Spring.
- No. 1 Heavy grades carry an additional 1/2 ¢ premium.
- At 1/2¢ premium: No. 1 Heavy Northern Spring.
- At 1¢ discount: No. 3 Soft Red, No. 3 Dark Hard Winter, No. 3 Hard Winter, No. 3 Yellow Hard Winter, No. 3 Dark Northern Spring, No. 2 Northern Spring.
- All No. 3 grades must be equal to or better than No. 2 in all factors except foreign material, total defects and total wheats of other classes.
- Trading Units: 5,000 bu. round lots.

Price Quotations and Minimum Fluctuations: Quoted in cents and eights of a cent per bushel, with 1/8¢ per bu. (\$6.25 per round lot) as the minimum change.

Carrying Charges: \$3.00 per day per 5,000 bushel contract for storage, plus interest and insurance.

Commissions: (non-members) \$30.00 per round lot for traders in United States, Canada, Cuba, Puerto Rico, Mexico and Virgin Islands.

Daily Limits On Price Movement: 10¢ advance or decline from previous day's close.

Point From Which Delivery Can be Made: Exchange-approved grain elevators in the Chicago Rail Switching District.

Position Limits:

1. Daily Trading Limit 2,000,000 bushels in any one futures, or all futures combined.
2. Position Limit 2,000,000 bushels in any one futures, or all futures combined; positions of 200,000 bushels require reports.

Margins on Trades: Consult your broker.

Trading Hours: 9:30 A.M. to 1:15 P.M. Central Time.