

Approved Fred Kerr

Date 2/10/84

MINUTES OF THE SENATE COMMITTEE ON AGRICULTURE AND SMALL BUSINESS

The meeting was called to order by Senator Fred Kerr at \_\_\_\_\_  
Chairperson

10:00 a.m./~~p.m.~~ on Friday, February 3, 1984, 19\_\_ in room 423-S of the Capitol.

All members were present except: Senator Ross Doyen (E)  
Senator Ed Reilly (E)

Committee staff present: Raney Gilliland, Research Department

Conferees appearing before the committee:

Dr. Charles Deyoe, Head of Grain Science & Industry, KSU  
Dr. Kurt Feltner, Associate Dean of Ag and  
Associate Director, KSU Ag Experiment Station  
Professor John Wingfield, Grain Science Department  
Gerald Riley, Kansas Wheatgrowers Association

Senator Arasmith moved the February 2, 1984 minutes be approved,  
seconded by Senator Allen. Motion carried.

Senator Kerr stated there is concern about foreign matter being in grain  
and called on the KSU staff to present their views.

Dr. Deyoe stated they are concerned about our grain quality at the  
other end. He stated the KSU Grain Science Department can speak with  
expertise. He turned the meeting over to Dr. Feltner who stated Kansas  
wheat has held high prestige for its high quality. They work closely  
with the Kansas Wheatgrowers, Kansas Wheat Commission and ag economists.  
He introduced Professor Wingfield who has been with the Grain Science  
Department since 1977. Mr. Wingfield stated he had 27 years experience  
in the milling industry. He stated dockage is hard to understand.  
(Note complaints from Germany, France, Holland, Switzerland in Attach-  
ment 1.) He noted that some complaints have come from other countries,  
but the major complaints are from Europe.

Attachment 2 defines dockage as material other than wheat that can be  
readily removed from wheat by a Carter Dockage Tester; it sets out  
how much is in Kansas wheat; how accurate the dockage tester is; how  
the dockage is removed; and the cost of a dockage removal unit, which  
is expensive.

Attachment 3 sets out the wheat quality concerns in the U.S. Mr.  
Wingfield stated the following is needed at this time:

1. Continued efforts to disseminate information that will help the  
producer and elevator operator in making a decision on the  
profitability of cleaning wheat before sale or resale.
2. Revise the Grain Standards so as to include Dockage into the  
Foreign Material test for grading wheat.
3. Conduct a broad study of the world wide wheat marketing picture  
to determine the exact impact on each buying country of U.S.  
wheat quality, or lack of it, with proposed solutions to any  
problems encountered.

FGIS certification is on the vessel as it leaves the port--they have  
nothing to do with what happens after it leaves the dock.

Mr. Wingfield stated there is growing concern relative to infestation  
of the grain. Much of the insect infestation in wheat is internal and  
cannot and is not recognized by present FGIS procedures. He feels it is  
important that a quick and accurate method for the detections of internal

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON AGRICULTURE AND SMALL BUSINESS

room 423-S, Statehouse, at 10:00 a.m./~~p.m.~~ on Friday, February 3, 1984, 19   

infectation be developed and included in the grain standards, before further damage in the reputation of U.S. and Kansas wheat quality might result.

Answering Senator Karr's inquiry, Mr. Wingfield stated there is a study being made in North Dakota; we have offered to exchange information--it is a total problem. Mr. Wingfield also stated there has been a proposal to make a change in the standards. Most complaints come from Europe since they have a high tariff and demand high quality. He stated he inquired when in Russia how U.S. wheat compared with wheat from Canada and received the answer "equal to or better", but stated this came from high echelon.

Answering Senator Kerr's inquiry if he feels there is any intentional effort to add materials to wheat which result in these complaints, Mr. Wingfield stated traders could understandably bring wheat up to the #2 limits. On dockage, he has not made up his mind, but stated more studies should be given to the wheat. He feels a committee of knowledgeable, interested legislators, qualified technical people and grain science people should study the issue and perhaps be sent overseas and sit down with the buyers to ascertain what, if anything, is wrong and what can be done.

In answer to Senator Kerr's inquiry as to what he thought about the proposed red wheat class, Mr. Wingfield said it will become a discount class with a discount price.

Dr. Feltner stated since 20% of this country's wheat comes out of Kansas the leadership should come from Kansas. He stated a 1¢ bushel difference means \$5 million.

Dr. Deyoe said they feel the U.S. standards are very good, but an improvement can be made. We have to identify what our problems are, but we cannot completely change the system. He feels the issue is a serious one for producers.

Mr. Riley stated the Kansas Wheatgrowers are interested in quality production as it is shipped overseas. He is interested in where we are going to go and if all countries would pay for high quality wheat.

The meeting was adjourned.

#####

SENATE

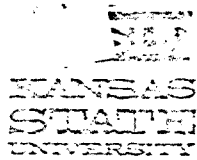
AGRICULTURE AND SMALL BUSINESS COMMITTEE

10:00 a.m., Room 423-S

Friday, Feb. 3, 1984

Date

NAME	ADDRESS	ORGANIZATION
Don Jacka	Topeka	Ks STATE BOARD OF Agriculture
Ed. Fastrop	Topeka	Ks S.B. OF Ag Marketing Div.
Steven Graham	Hutchinson	Ks. Wheat Commission
Gary M. Bothwell	Topeka	KSGID
Sam Redn	Topeka	KSGID
Margaret R. Wolfe	"	"
Randy Toth	"	Ks. Co-op Council
Rocky Crenshaw	"	Council of Farm Wives
J. J. J. J.	Manhattan	Kansas State University
John Blythe	Manhattan	Kansas Farm Bureau
Charles Deane	Manhattan, Ks	Kansas State University



Department of Grain Science  
and Industry

Shellenberger Hall  
Manhattan, Kansas 66506  
913-532-6161

Attachment 1, 2/14

MEMO

To : Dr. Harvey Kiser  
Dr. L. D. Schnake  
From : Mr. John Wingfield  
Date : July 18, 1983  
Subject: European Complaints of U.S. Wheat Quality

As the above subject directly relates to the study on dockage, it should be of interest.

Dr. Deyoe has provided me with a number of documents relating to poor quality U.S. wheat in Europe, which he in turn received from Nicolaas Konijnendijk of U.S. Wheat, Rotterdam. I have abstracted them for your convenience.

/ Semoulerie de Normandie  
Roven, France (Durum and Spring)

This company has the "outright impression" that from 5% to 8% dust has been added at the U.S. elevators. There is a big difference between the certificate and reality. Laborers avoid these cargos at the port due to health reasons.

Nick inspected a durum cargo at Gent and sent samples for analysis, June 1982.

Dust	3.5-5.0%	(1st Cleaning)
	5.0-8.0%	(2nd Cleaning)
Other Classes	5.8%	White Wheat
	2.1	Soft (Red?)
	<u>7.9%</u>	
Damaged	2.7%	Disease
	.4%	Heated
	<u>3.1%</u>	
Impurities	.5%	Weevily
	7.0	Broken
	4.0	Shrunken
	1.3	Black Point
	4.2	Germinated
	.9	Other
	<u>17.9%</u>	

Atch. 1

MEMO  
July 18, 1983  
Page 2

Ergot Trace

Total amount of undesirable material using 5% dust average is 33.9%!

A report from the same company in November 1981 showed the following for a shipment of Hard Amber Durum from Duluth.

Dust	3.0	(Ave.) Max. 8.0%
Other Classes	6.0	Yellow Berry
	.6	Soft
	<u>6.6%</u>	
Damaged	.2%	Insect
	.3%	Other
	<u>.5%</u>	
Impurities	2.4%	Disease
	5.2	Broken
	6.8	Shrunken/Broken
	6.1	Black Spots
	3.6	Germinated
	.2	Other
	<u>24.5%</u>	

Total amount of undesirable material 34.6%

They again comment that the grain quality received is not reflected by the certificate of grade. They ask for a method of obtaining grade at port of arrival for making claims.

2. Bremer Rolandmuhle  
Bremen, Germany, January 1982

Letter refers to the 100% levy the EEC has on dust/dockage/foreign material in high quality imported blending wheats. They understand that cleaning wheat in the U.S. would raise the price to European buyers, but feel every D. Mark paid as levy for "offals, dust dockage and foreign materials" is lost for the exporter as well as for the importer. (Assume he refers to loss of market for exporter, loss of product for importer.)

3. Einfuhrhandel Mannheim  
 Mannheim, Germany, January, 1982  
 (Winter-Spring-Durum)

They feel that "dirt" averages 4% even though the U.S. certificate shows 1% dockage. The dust, dockage and foreign material has no value to the German mills. They do not feel the inspection certificate reflects the poor quality wheat they receive. They figure their loss as follows per ton.

	<u>Breadwheat</u>	<u>Durum</u>
1. 4% dust (no value) DM	28.00	34.00
2. Cost of cleaning	3.00	3.00
3. Levy/freight	10.40	15.20
	<u>41.40</u>	<u>52.20</u>
4. Less 1% maximum dockage rebate. CIF Rotterdam	<u>4.50</u>	<u>4.50</u>
Net loss/ton	DM 36.90	47.70
U.S. Equiv./ton	\$ 16.40	21.20
/bu.	.45	.58

4. Wilhelm Werhahn Mills  
 Neuss, Germany, 1981-82

<u>Wheat Source</u>	<u>Dust/Weed Seeds</u>	<u>% Defects</u>			<u>% Total (Beatz)</u>
		<u>Germinated</u>	<u>Broken</u>	<u>Other Grains</u>	
U.S. (Durum) #3	1.1	5.9	8.6	2.0	17.6
Canadian (Durum)	1.0	.9	4.4	.4	6.7
French (Durum)	.2	1.0	4.8	1.1	7.1
U.S. (Winter)	.2	1.4	3.6	3.6	8.8
U.S. (Spring)	.8	.4	3.2	3.3	7.7

(Continued)

Wheat Source	% Defects			Other Grains	% Total (Beatz)
	Dust/Weed Seeds	Germinated	Broken		
English	.2	.1	.6	.6	1.5
French	.3	.1	2.0	1.0	3.4
Belgian	.2	.1	2.2	1.2	3.7

5. Statens Kornforretning  
Oslo, Norway

U.S. is the only exporting country in the world where dockage is permitted to be shipped together with the grain. They would prefer to pay a higher price for precleaned grain instead of paying freight on dockage, incurring the expense of cleaning out the dockage, having exposure to increased risks of dust explosions, and finally having to dispose of the dockage.

Report dockage of mostly 1.5% for Northern Spring. No indication of how this number is obtained or how it compares to other wheats.

6. Graanhandel "Trigo"  
Bavel, Holland

Sometimes clean out 5 to 6% in elevator before delivering U.S. wheat. Percentage of dust found in USA No. 2 Northern Spring and USA No. 2 Hard Red Winter is "enormous". Have skepticism about accuracy of log books on dockage certification. Feel that the certificates are not in order. Have lost customers.

Invoice for cleaning #2 H.R.S. wheat, where wheat was purchased from a silo in Dordrecht that was sent to a "cleaning company" before it could enter the mill. This cleaning company evidently removed about 12.6% dockage having a value of only 37% of the wheat value. Total cost to the buyer was Dfl. 354.39 on 10050 kg of wheat.

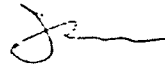
(Wheat sold at Dfl. 80 per 100 kg  
Screenings at Dfl. 30 per 100 kg.)

MEMO  
July 18, 1983  
Page 5

One might fuss with some of this on technical grounds, but the truly crushing commentary on U.S. wheat quality are the huge discounts of up to 60¢ per bushel against U.S. spring and winter wheats compared to comparable protein Canadian wheats. This discount is of the same magnitude, shown for defect levels in U.S. wheat. (See Mannheim example.)

I feel we should rethink some of our statements in the Dockage report based on the above information.

When can we meet?

  
\_\_\_\_\_  
John Wingfield

/dks

cc: Dr. C. W. Deyoe ✓





Eidg. Getreideverwaltung  
Administration fédérale des blés  
Amministrazione federale dei cereali

2	3	4	5
---	---	---	---

3003 Bern,  
Mattenstr. 15

10th March 1983

K

CE1/616111  
FRANCO Bern

RECEIVED			
17 MARCH 1983			

Mr. Lewis Lebakken, Jr.  
Regulations and Directives Unit  
Federal Grain Inspection Service  
USDA South Building, Room 1676

WASHINGTON D.C. 20250

U. S. A.

Votre signe  
ostro segno

Schreiben vom  
communication du  
ricezione del

Notre signe  
ostro segno

Schreiber  
specialiste  
incaricato

Standort/Objet  
Oggetto

073 - be/bg

New regulations regarding the official certification  
of "Dockage" for wheat exported by the United States

Dear Mr. Lebakken,

By the report for January 1983 on the wheat situation in the United States (U.S. Wheat Review), delivered by the European Office of U.S. Wheat Associates Inc. in Rotterdam, the reader's attention is drawn to the fact that the U.S. Federal Grain Inspection Service is trying to find and establish new regulations in respect to the determination and certification of dockage for wheat exports by the United States. As our Administration itself from time to time imports U.S. wheat and, therefore, has gained some experience in this matter - especially with No. 2 Northern Spring Wheat with a protein content of 14 or 15 % - we should like to make the following comments.

Your proposition, which in the end aims at a further limitation of dockage and at a certification which corresponds better to the effective content is certainly valuable and will be welcomed by all importers of U.S. wheat. The new practice will not only lead to an improvement in the quality but will also help the importers of such wheat to save money. Although, the buyer up to now was granted a certain refund for dockage on the cif-value of the cargo, he still had to bear the transportation costs from the European sea port to the final inland destination and the additional expenses for the financing (insurance, customs duty and other border levies etc.) on the practically worthless dockage, which could make up quite a substantial amount of money. For these reasons, we would prefer to buy wheat which has been cleaned before being graded and, as a result would be free of dockage. It is a fact that such a change of your policy would cause the exporter some expenses. But, on the other hand, we are persuaded that such a practice would be profitable in the long run, especially if one takes into consideration that a higher price could be asked for pre-cleaned wheat which contains a minimum of dockage. We are also convinced that for example U.S. Northern Spring Wheat, which is free of dockage, would be much more competitive com-

pared to Canada Western Red Spring Wheat. At present, No. 1 Canada Western Red Spring Wheat, 13,5 % protein, for shipment in April/May, is offered at a price of US\$ 195.-- per ton on the basis cif Antwerp/Rotterdam/Amsterdam. On the same basis No. 2 U.S. Northern Spring Wheat, 14 % or 15 % protein, costs US\$ 169.-- or US\$ 175.-- per ton respectively. The difference in price compared with Canadian Wheat, therefore, is not less than US\$ 26.-- or US\$ 20.-- per ton respectively, a difference which is considerable. If U.S. wheat for example, would be cleaned prior to its exportation, we could save the money for cleaning the wheat before putting it on stock in Switzerland. Cleaning however is absolutely necessary, as the wheat is kept on stock by the Administration and is part of our basic reserve stocks. Reserve stocks are normally attributed to the mills for processing only after a few years of storage.

We hope very much that with our frank position in this matter, we can render you good services.

With kind regards,

yours very truly,

SWISS FEDERAL CEREALS  
ADMINISTRATION



A. Brugger  
Director

Copy is sent to:

- U.S. Wheat Associates Inc.  
Coolsingel 6  
3011 AD-Rotterdam/Netherlands
- Embassy of the United States  
Agricultural Department  
Jubiläumsstrasse 98  
3005 Berne/Switzerland

FOREIGN MARKET DEVELOPMENT REPORT

SWITZERLAND / GERMANY

TRAVELLERS:

Nicolaas E. Konijnendijk, Marketing Specialist

Dr. Joel Dick, Department of Cereal Chemistry & Technology  
North Dakota State University

ITINERARY:

FRANKFURT-Germany (Konijnendijk only), March 13-14, 1982

ZURICH-Switzerland, March 14-17, 1982

DETMOLD-Germany, March 17-19, 1982

DUSSELDORF-Germany, March 19-22, 1982

MANNHEIM-Germany, March 22-23, 1982

FRANKFURT-Germany, March 23-24, 1982

PURPOSE:

To accompany Dr. Joel Dick, Durum Wheat Quality Specialist of the Department of Cereal Chemistry and Technology, North Dakota State University to the International Durum and Pasta Meeting in Detmold, Germany.

To make visits to other main flour milling and semolina industries in Germany and Switzerland.

Dr. Joel Dick visited the main milling industry in Switzerland. Due to a big difference in import levies between breadwheat and durum in Switzerland, US\$ 145 p.t. for breadwheat and US\$ 15 p.t. for durum, local feed prices were, for a while, higher than the durum, therefore good demand existed for durum. Imports of durum were on the increase in Switzerland and due to the heavy competition of the Italians on the decrease in Germany.

Dr. Joel Dick's presentation at Detmold about "Wheat Sprouting" was very well received at the International Durum and Semolina Convention. The Institute's "Arbeitsgemeinschaft Getreideforschung" took care of Dr. Joel Dick's presentation for translation into German and passed it out during the convention. Questions raised by the participants were all answered by Dr. Dick to the satisfaction of all. As Dr. Seibel, the manager of this international meeting, said, "It is very important to work together on an international basis to solve this sprouting problem", and thanked the North Dakota State University for their work in this field. Many new and useful contacts were made for future use.

German durum millers are facing a dark future in durum milling due to the heavy and, as they state, unfair competition by the Italians allowed by the Commission in Brussels. Moreover they complained about the quality of U.S. wheat, which is definitely lower than Canadian or French wheat due to impurities in the U.S. wheat. Dr. Dick requested laboratory figures and received copies of laboratory tests of samples from arrived vessels. The copies give a picture from 1980, 1981 to 1982 and show big differences in total defects (Besatz). In 1981 Canadian had total defects ranging from 5.5 to 6.6%, French wheat from 8.5 to 9.9%, whereas U.S. wheat showed a 14 to 22.6%. A summarized copy of the mill's laboratory analysis is attached to this report.

Mr. Scharf of the Wilhelm Werhahn Mills in Neuss informed that despite of the price discount they fear the rivals coming from the U.S., informed the travellers but due to the regulations in the EEC they only need highest quality and are willing to pay for it, but with U.S. wheat you are never sure what quality you receive. On our question as to why they do not complain they informed Dr. Dick that they had given up complaining 4 to 5 years ago because contract is final at loading. We informed the millers we visited to make, immediately after arrival in Rotterdam, a sample representing the whole cargo and if it does not represent the wheat they bought to file a complaint.

A visit was also made to a German trader in Mannheim and they informed the travellers that the winter crops in Germany in barley and wheat has suffered and they expect a crop damage of between 8 to 10%. This trader had a flour contract with the USSR for delivery of 50,000 tons of flour in January and February. This flour stored in several ports is still not loaded into Russian vessels. Also is the trader not receiving any information when the vessels will arrive. The flour is not yet paid and the cost for storage is enormous, all this put together is bringing this company into a bad financial situation. But as he said, "We received this information before, many other contracts are delayed by the Russians due to severe money problems."

Greece, who has become a member of the EEC recently, is increasing its durum production. Several German millers showed us good durum semolina. Trading with Greece traders seems, up to now, a bit difficult. The crops in Greece were, before entering the EEC 376,000 tons in 1979 and 631,000 tons in 1981. The yield was 1.9 tons per hectare in 1979 and 2.4 tons per hectare in 1981. Vitreous kernels in 1979 was 84% and only 65% in 1981. Expectations are that the yield will soon overtake the quality.

#### PERSONS CONTACTED

##### SWITZERLAND:

Mr. A.W. Brunner, General Manager, Coop Mühle, Zürich  
Mr. Ackerman, Director Research, Coop Mühle, Zürich  
Mr. Alois Gamma, Gebr. Bühler, Uzwil  
Mr. Ernst Schefer, Director, Gebr. Bühler, Uzwil  
Mr. Christian Lippuner, Assistant Manager, Gebr. Bühler, Uzwil  
Mr. Josel Mauser, Vice President, Gebr. Bühler, Uzwil

##### GERMANY

Mr. Peter Werle, Einfuhrhandel Mannheim, Mannheim  
Mr. Krelges, Hildebrand Mühle (Kampffmeyer), Mannheim  
Mr. Reifenstuhl, Hildebrand Mühle (Kampffmeyer), Mannheim  
Mr. Schneider, Park Mühle, Mannheim  
Mr. Trocktenhengst, Park Mühle, Mannheim  
Mr. F. Lorenz, Director, Ludwigshafener Walzmühle, Ludwigshafen  
Mr. Roll, Director Research, Ludwigshafener Walzmühle, Ludwigshafen  
Mr. Richard Zadow, Director, Wilhelm Werhahn Mühle, Neuss  
Mr. Reinhold Scharf, Wilhelm Werhahn Mühle, Neuss  
Ms. Marjatta Korkman, Cereal Chemist, Vaasa Mills, Helsinki/Finland  
Mr. Fajer Fajerson, Agr. Professor/Director, Plant Breeding Station, Stockholm/Sweden  
Prof. H. Bolling, Federal Research Institute for Cereal Industry, Detmold  
Prof. W. Seibel, " " " " " " " "

and many more seminar participants, of which a list is available.


  
N.E. Konijnendijk  
Marketing Specialist



FOTO					
CIRC.					
SUBJECT: Quality Complaint - Hard Amber Durum U.S. No. 3					
24 MARI 1983					

Dear Mr. Konijnendijk,

with reference to recent conversations and exchange of letters we had with you, we enclose a table which clearly shows the completely unsatisfactory qualities of recent arrivals at our mill of Hard Amber Durum U.S. No. 3. As a result of the time passed-by we, unfortunately, are no longer in a position to file the requested claim on the official form-sheet. We have learned too late of the possibility to file a genuine quality complaint on an official form within a given period, at a time when, according to the terms, the samples in the U.S. probably have already been destroyed. Nevertheless, we have compiled the figures so that you may convince yourselves to what extent the deliveries obtained deviated from the data in the certificates! The analyses are for the arrivals towards the end of 1982, which we had needed to fill up our winter supply.

You can imagine that we - and certainly the other durum-mills, too - will analyse and control with special care the new arrivals after the re-opening of the St. Lawrence shipping season. Should then again such grave deviations from the certificates and, hence, poor qualities show up, we will immediately file complaints. At this occasion we would like to emphasize again that the given due-terms are too short considering the long transportation time. If the assertions by the Americans that they would like by all means to deliver good qualities are true, they should in the first place be ready to extend the due-terms so that justified claims can be settled to satisfaction. We are not interested in obtaining any (later) price compensation for inferior quality, but would like to obtain the quality ordered at the negotiated price. If we take into consideration that according to the 1977 quality requirements for durum wheat total defects, for instance, should not surpass 8%, your recent shipments are far away from this objective.

We are looking forward with interest to your further news in this matter.

Sincerely,

(signature)

Enclosure

Blatt 2

zum Schreiben vom 3.3.1983

an U.S. WHEAT Associates, inc., 3011 AD-Rotterdam

---

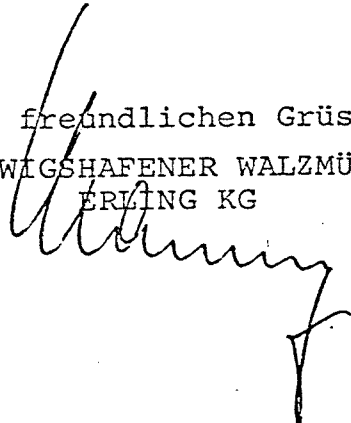
die die Amerikaner von sich gegeben haben - sie wollten unbedingt gute Qualitäten liefern - wahr sind, dann müssen Sie als erstes bereit sein die Fristen zu verlängern, damit berechnete Reklamationen auch einwandfrei erledigt werden können. Uns geht es nicht darum, für schlechtere Qualitäten irgend welche Preiserstattungen zu bekommen, sondern wir wollen die bestellte Qualität auch zum vereinbarten Preis erhalten. Wenn wir berücksichtigen, dass nach den Qualitätskriterien für Durumweizen von 1977 zum Beispiel Defects (total) 8 % nicht überschreiten dürfen, dann sind Sie mit den letzten Lieferungen weit davon entfernt.

Wir sehen Ihren weiteren Nachrichten mit Interesse entgegen.

Mit freundlichen Grüßen

LUDWIGSHAFENER WALZMÜHLE

ERLING KG



Anlage

Einfuhrhandel Mannheim  
Germany

Re: Quality of U.S. Breadwheats and Durum

Dear Sirs,

Referring to the Mannheim Seminar in the Wartburg hotel in October of last year you were able to convince yourselves that the German millers objected with regard to the bad quality as well as for the U.S. Breadwheat NSW 2 14% protein, HRW 2 - 13% protein as also the U.S. Durum wheat number 3.

The arrivals at the mills of U.S. wheat compared with the Canadian wheat are showing that U.S. wheat is much more unclean. The dust, dockage and foreign material are of no value to the German mills.

Not only our mills in Germany have complained, but also at the discharge in Rotterdam, as you can note at the enclosed discharge information letter of the company Palte & Haentjes in Rotterdam of December 17, 1981.

The amount of dirt averages approximately 4%, but the dockage shown in the Inspection Certificate gives in most cases only 0.5 - 1%. We are of the opinion that it is your responsibility to stop this.

These grains, which have no value, is only a loss for the mill and consists of:

	<u>Breadwheat</u>	<u>Durum</u>
1) 4% wheat of no value taking into consideration that the mill price is between DM 700 - Breadwht/ DM 850 Durum per ton.	DM 28.00	DM 34.00 p.ton
2) Aspiration costs	3.00	3.00
3) Levy freight paid for grains which are not usable. DM 260 for breadwheat and DM 380 for durum	10.40	15.20
	<u>DM 41.40</u>	<u>DM 52.20 p.ton</u>
We receive a max. Dockage of 1% at CIF Rotterdam of	4.50	4.50
	<u>DM 36.90</u>	<u>DM 47.70</u>
TOTAL LOSS	US\$ 16.40	US\$ 21.20

The losses of these millers have been discussed at the Seminar. It is also necessary that the Inspection Certificates have to be changed.

We ask you kindly to do your utmost for the interest of the German milling industry but also of the exporters of U.S. wheat, as the demand of the German millers for Canadian wheat is increasing.



Hans P. Erling  
Bremer Rolandmühle

6 Jan. 82

Dear Mr. Nicolaas,

Herewith we gladly confirm the several conversations with you and your organization.

I have the opinion that the amount of dust and dockage and foreign material in the wheat imported from the U.S. increases the costs unnecessarily.

It is known in the interior market in the U.S. that the contents of dockage of the delivered quantities is subtracted and you can consider that the feed value of the dockage is about equal to the cleaning costs.

If the dockage and foreign material is taken out of the grains immediately at the loading in the U.S. the wheat for the receivers in Europe will raise the price. - But if you leave the dust, the dockage and foreign material in the grains the EEC tax officials put also levy on this as they declare the dust/dockage/foreign material as being wheat and the full amount of 100% levy has to be paid. This concerns in particular high quality wheats which are charged with another levy on top.

The U.S. wheat is imported by the European millers only for their very good blending possibilities. For other purposes it is too expensive due to the high levy.

From this results automatically that the cleanings and the wheat off-falls of the imported wheats are of the same value of our domestic wheats. Due to this every D.Mark paid as levy for off-falls, dust, dockage and foreign materials is lost as well for the exporters as for the importers.

Oscar Goldstein

Semoulerie de Normandie

Sir,

We have to inform you that we have been particularly discontented with regard to the quality of durum which you have delivered to us during the last whole year.

We know that the crop conditions in 1980 were not good but we got the impression that the exporters have increased the bad wheat quality by adding dust and waste products which you normally do not find in the wheat. We have also found at certain moments, during the discharges, wheat with a dust content of between 5 and 8 percent, which, please note, does not reflect to the total discharge but we can say an average amount of dust has been 3 percent.

We send you enclosed a wheat analysis made on vessel "Anchises" loaded at Duluth on October 16, 1981 and we have found specially 6.8% small grains, 6.1% spotted grains and 3.6% germinated wheat.

We can say that the wheat which has been delivered last year do not has the respected American average standard and the grading certificate, which we have received does not represent at all the reality of the wheats which we have received.

As the inspection certificates of American grains have to be considered final after the grains are loaded, it is obvious that it is unnecessary that we present a claim at the moment that the vessels arrive in one of the European ports.

We wish that the inspection of American grains face once a rigorously controle when the vessles are leaving and that they will take samples on arrival at Europe to render account that there are not added substitutes between leaving the Elevator and the wheat received at arrival in Europe.

We count on you that you will pass on our claims to the American authorities and hope that we will find a clear improvement and we can maintain our purchases from the U.S.



(NORWEGIAN GRAIN CORPORATION)

		3	4	5
				K
17 JAN 1982				

U. S. Wheat Associates, Inc.  
 Coolsingel 6  
 3011 AD - ROTTERDAM  
 Netherlands

Your ref.

Our ref. OP/RT

OSLO, January 8th, 1982

Dear Sirs,

Re Dockage

Dockage in U. S. Wheat and Rye has always been a problem to our organization as importer and the Norwegian milling industry as user of the grain.

Why U.S.A. should be the only exporting country in the world where dockage is permitted to be shipped together with the grain has always been a great question to us. It has never been properly explained to us on which law or regulation it has its basis, even when the problem has been discussed in the U.S.D.A.

We should much prefer to have the grain cleaned by the shipper before loading, even at a higher price for the grain, instead of paying freight for the dockage, paying expenses for cleaning the grain at port of unloading and dispose of the dockage, and at last but not at least, there is the increased risk of dust explosion at the receiving plant when the grain is unclean.

We are aware that dockage is a great problem to many other importers and users of American wheat and rye and we should like to know if your organization could do anything to have the system changed.

Sincerely,

*Statens Kornforretning*  
 (NORWEGIAN GRAIN CORPORATION)

*Th. Wolden*  
 Th. Wolden

*Otto Poulsen*  
 Otto Poulsen

OFFICE ADDRESS: STORTINGSGT. 28  
 POSTAL ADDRESS: P.O. BOX 1367 -  
 VIKA, OSLO 1  
 NORWAY

TELEPHONE: (02) 41 45 00  
 TELEX: 21 458  
 TELEX CHARTERING: 17 524  
 TELEGRAPHIC ADDR: KJENFORRETNING  
 POSTAL ACCOUNT: 25 29 05 74

BANKING ACCOUNTS:  
 SPANDENES BANK A.S. 4701 05 07 75  
 FELLESAKOUNTEN A.S.

January 6, 1982

Telex 54849  
Telefoon 076 - 55 51 87  
- 65 74 23  
Beurs Rotterdam 010 - 13 11 05  
K.v.K. Breda  
Bank: A.B.N. Rotterdam  
Rek.nr. 50.03.37.004

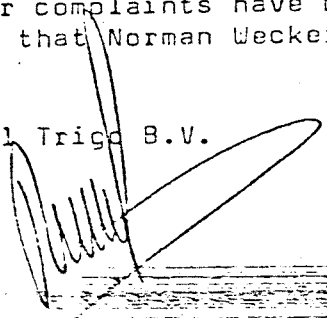
U.S. Wheat Associates, Inc.  
Coolsingel 6  
Rotterdam

	1	2	3	4	5
RECEIVED					
- 3 JAN. 1982					

Gentlemen;

Following your request we repeat by this letter the many, many complaints, we passed on to you during the last year. The percentages of dust found in USA No. 2 Northern Spring Wheat as well as USA No. 2 Hard Red Winter Wheat are enormous. This causes problems for the bigger mills, because it happens that the cleaning department is unable to do its job properly. As you know, we store US Wheats directly from the seagoing vessel into the elevator in Dordrecht (this elevator is operating only wheat for us) and we deliver the US Wheats by truck in parcels varying between 5/40 tons to smaller mills, not only in Holland, but also in Belgium and France. We are confronted regularly with complaints about the percentages of admixture and dust, because of the fact that these small mills don't possess such a perfect cleaning system as the bigger mills. Because of dust reasons we have lost already various customers in the Netherlands and Belgium. When we should decide to clean the wheat in our elevator, we have to clean out a percentage of about 5/6 so we should have to increase our prices heavily and that is impossible by means of competition. We have a strong feeling that the dockage certificates we receive as a part of the documents presented, are not in order. Since a longer period we request the ship log inspection sheets of the seagoing vessels and when we compare the results on these sheets with the respective percentages mentioned on the inspection certificates, it is frequently doubtful whether they are correct. Once FGIS corrected the inspection certificate, but it was the first and the last time. Until now nobody gave us a good explanation how to ascertain the correct dockage percentage on the inspection certificate coming out the ship log inspection sheet. Furthermore, we expressed complaints about the falling numbers of USA Spring wheat. We have been confronted with falling numbers varying of 90/140, with exceptions 200 when the vessels were loaded at Gulf ports. We lost customers because of the delivery of such a poor quality. The shipments coming in at this moment show falling numbers between 250/350, so we count on good qualities. That is not true, a vessel arrived at the end of December at Ghent with an Atlantic falling number 168, so it is hard to have confidence. Until now we don't have the feeling that our complaints have been seriously been searched. We sincerely hope that Norman Weckerly can do something about it.

Graanhandel Trigoo B.V.



kantoren: Daalakker 13, Bavel, tel. 01613-1720  
Zwijnsbergenstraat 149, Breda

Attachment 2, 2/3/

Interim Summary  
Copy

Not for Publication

A VIEW ON THE ECONOMICS OF REMOVING  
DOCKAGE FROM WHEAT

by Roxane Fridirici, Harvey Kiser  
L.D. Schnake, and John Wingfield<sup>1/</sup>

<sup>1/</sup> Research Assistant, KSU; Associate Professor, Department of Economics, KSU; Agricultural Economist, National Economics Division, Economic Research Service, U.S. Department of Agriculture, Manhattan, KS; Associate Professor, Department of Grain Science and Industry, KSU; respectively.

Kansas Agricultural Experiment Station  
Kansas State University  
Manhattan, Kansas  
Contribution number \_\_\_\_\_

Atch. 2

## CONTENTS

SUMMARY

INTRODUCTION

PART I--METHODOLOGY

PART II--OFFICIAL DEFINITION AND DETERMINATION OF DOCKAGE

Definition of Dockage

Method of Determination of Official Dockage

PART III--HOW DOCKAGE IS CONSIDERED IN THE MAJOR EXPORTING COUNTRIES

In The U.S.

In Canada

In Australia

Other Countries

PART IV--PRO'S & CON'S ON "DOCKAGE" REMOVAL FROM VARIOUS VIEWPOINTS

From The Importer's Viewpoint

From The Farmer's Viewpoint

From the Country Elevator's Viewpoint

Experiences with "Dockage" Removal at Country Elevators

From The Terminal Elevator's Viewpoint

From The Export Elevator's Viewpoint

PART V--ESTIMATED PARTIAL COSTS OF CLEANING U.S. WHEAT

At An Export Elevator

The Port Elevator Modeled

Equipment requirements

Labor requirements

Equipment Investment

Partial Fixed Costs

Depreciation

Interest

Partial Variable Costs

Total Partial Costs

At An Inland Terminal Elevator

Estimated partial costs with a Canadian-type cleaning system

Estimated partial costs with an Aspiration-type cleaning system

At Country Elevators

Estimated partial costs at Country Elevators with a Canadian-type cleaning system

Estimated partial cost with an Aspiration-type cleaning system

APPENDICES

APPENDIX 1 - Summary of Grades of Screenings for Canada

APPENDIX 2 - Bushels of United States Wheat and HRW Wheat Exported  
in 1979, 1980, and 1981

APPENDIX 3 - Official Complaints Received on U.S. Wheat

APPENDIX 4 - Kansas Wheat Dockage Percentage and Weighted Average Percentages of Dockage, 1973-1981

APPENDIX 5 - A Review of Equipment Used to Remove "Dockage" and Some of the Estimated Associated Costs At Country Elevators

Example Investment Costs For Twelve Different Cleaners

Example Fixed Costs

Depreciation

Interest

Insurance

Taxes

Example Variable Cost

Maintenance and Repair

Electricity

Labor

Other Costs

APPENDIX FIGURES 5.1 to 5.6

APPENDIX 6 - An Itemization of Possible Added Costs Related to Utilization Possibility of Cost Offsetting Contributions from Dockage Removal

APPENDIX TABLE 6.1 - A schedule of Laboratory Fees for Nutritional Analysis Provided by One Laboratory

APPENDIX 7 - Removing Dockage from Wheat Using Combine Screener

APPENDIX TABLE 7.1 - Cost Estimates for Combine Mounted Cleaners

APPENDIX FIGURE 7.1 - Combine Mounted Centrifugal Screener

APPENDIX FIGURE 8.1 - Carter Dockage Test

GLOSSARY

ACKNOWLEDGEMENT of Persons or Companies Contacted

REFERENCES

## SUMMARY

Price premiums do not cover the cost of removing all dockage from wheat before it is prepared for processing. Therefore, offers to sell wheat for export without dockage are not made except upon the request of the buyer (importer). Even then, most contracts require only a minimum dockage, not dockage free.

What is dockage? Official Dockage is material other than wheat that can be readily removed from wheat by a Carter Dockage Tester. This tester is a mechanical device approved by the government for this purpose. Dockage also includes shrunken and broken pieces of wheat kernels that cannot be recovered by rescreening. Most dockage has some economic value as livestock feed and is identified as Aspirated Grain Fractions or cereal grain by-products if incorporated in livestock feed.

Wheat farmers and their market promotion agencies such as the Kansas Wheat Commission strive to expand exports. Some foreign buyers have asked why wheat from the United States contains dockage. Our purpose here is to answer that question.

How much dockage is in Kansas wheat? Inspection records for the past nine years show average dockage in wheat delivered by country elevators to terminal elevators by rail has ranged between 0.49 percent and 0.62 percent, which on the average is insignificant. Although in some years, 11 and 15 percent of samples had 1.0 percent or more dockage. Between 32 percent and 55 percent of the shipments had under 0.5 percent dockage over the years 1973 to 1981. Therefore, much of Kansas wheat would grade zero dockage when the shipments arrive directly from the country elevator.

Most Kansas wheat does not contain enough dockage to warrant its removal before reaching domestic flour mills. Since wheat must be cleaned



and treated at the mill anyways, dockage might as well be removed at that time. In this way, the expense of double cleaning is avoided.

How accurate is the dockage tester? There are three sources that cause variations in dockage measurements. These are: variation from repeatability with the same Carter Dockage Tester machine, from sampling variation, and from measurement variation that occurs between machines. On the official grade certificate, the dockage content is rounded down to the nearest 0.5 percent as determined by the dockage tester machine. Thus, there is a tolerance for dockage in wheat shipments. The dockage level will be higher, in most cases, than what is certified on the official certificate. The amount of dockage could be as much as 0.49 percent more than the certified dockage percent.

How is dockage removed? Generally, dockage is not removed from U.S. wheat prior to receipt by the end user. Blending of various lots of wheat allows shippers to meet U.S. grades and standards for wheat. In exceptional years when light materials such as cheat end up in the harvested wheat, local elevators may use various grain scalping type devices or aspiration to remove the lighter material to meet wheat grades and standards. The most thorough system of removing dockage at export locations has been a system developed in Canada. The Canadian system was simulated at U.S. port and inland terminals for this study. The simulated system consists of a combination of 24 cylinder machines to remove dockage particles larger than wheat kernels and 26 screen machines to remove smaller particles.

This complement of 50 machines will clean approximately 15,625 bushels or about 425 metric tons per hour. The high grain throughput in U.S. port terminals was accommodated by using more complements of 50 machines or more

complements with the same ratio of cylinder and screen machines in the simulation. The throughput capacity of the cleaning system was matched to the loadout capacity of the simulated U.S. port elevator.

Each complement of 50 machines requires 74 electric motors. Each cylinder machine has one 5 horsepower and one 10 horsepower motor and each screen machine has a 15 horsepower motor. Dockage removal using this equipment is expensive, not only for power, but for depreciation, maintenance and labor.

How much does dockage removal cost? It was estimated that ownership and operation costs of equipment to remove dockage using the simulated Canadian system, 1983 costs, were 13.7 cents per bushel at port, and 4.1 cents per bushel at inland terminal elevators--excluding costs associated with cleaning buildings. Total costs would be substantially greater if fixed costs had been included to cover the costs for special buildings for the machines, storage space for dockage, insurance, taxes and land. These fixed costs were not included because no price premium now exists to cover even the variable costs for removing dockage. The extra costs would be reflected in lower farm prices if dockage removal were done at the port or inland terminal elevator using this equipment.

The variable cost of removing dockage at inland terminal and country elevators is much less using aspiration-type systems. These costs were estimated to be 0.3 cent per bushel at an inland terminal elevator, and from 0.25 cent to 0.95 cent per bushel at a country elevator. Additional labor is included in the higher country elevator estimate.

Finally, if it is economical to remove dockage at elevators near the production area, the marketing system would need to make adjustments to avoid the reintroduction of dockage material which is inherent in the

normal handling and shipment of wheat to port locations in the current system.

## GLOSSARY

- Besatz.....Material composed of "kernel dockage" which consists of broken kernels, other grains, and damaged kernels generally having nutritive value, and "Schwartz (black) dockage" consisting of weed seeds, chaff, etc. The term is used to evaluate grain for Europe.
- Cheat.....A grass, Bromus secalinus, having rough blades and wheat-like ears; also called chess.
- CIF.....Cost, insurance and freight is paid by the seller to the port or destination.
- Depreciation.....An allowance made for the decrease or loss in value because of wear, age, or other causes for machinery, etc. A 15-year depreciation schedule assumes that the machinery in question will have zero value at the end of the 15-year period.
- Dust.....Fine dry pulverized particles of matter usually resulting from the cleaning or grinding of grain, although any handling of grain can cause some amount of dust. These particles can become airborne during handling of the grain. Also know as "aspirated grain fragments" when removed from the dust removal system of an elevator.
- FAQ.....(Fair Average Quality) Exported grain where quality is guaranteed to be at least equal to the average of all such grain shipped during a specified period. U.S. exported grain is sold, however on a "certificate final" basis where the quality is certified at origin at the grain leaves the loading elevator spout.
- Glume.....The leaf-like plant structure found near the top of the stem or below the flower.
- HRS.....Hard red spring wheat
- HRW.....Hard red wheat wheat
- Lot of grain.....A quantity of grain submitted for sampling and official inspection by the Federal Grain Inspection Service (FGIS), USDA or by FGIS-delegated or by FGIS-designated agencies and such grain is in identifiable containers such as trucks, rail cars, barges, shipping bins, or ships. This lot of grain must be uniform in quality for a specific grade under the appropriate inspection plan, in order to be certified as one lot receiving a specific grade or being certified as being equal to or better in quality than the grade specified by the contract.

- Pellets.....Agglomerated feed, formed by compacting and forcing material through die openings by a mechanical process.
- Scalped or Scalping....Having removed larger materials from grain by screening.
- Screenings.....The undesirable, non-millable material separated from grain prior to milling or processing. This material consists of dust, hulls, foreign grain, weed seeds, cracked grain, rocks, etc. Also know as cleanings.

Nettoyage - French

Reinigung - German

Oymctka - Russian

Limpia - Spanish

Pulitura - Italian

Czyszczenia - Polish

Station Average.....A method used by country elevator operators under which all the wheat delivered by the farmers is considered the same quality, grade, and protein percentage based on a weighted average since most of the wheat delivered from a local area at harvest time is generally uniform. However, the wheat is inspected by the elevator operator and the wheat receives a price discount for moisture, foreign material and damage when the limits for each factor exceeds those set by the elevator operator.

Sublot of grain.....A portion of a lot of grain that is of a size/best suited for the size of the lot offered for inspection, the quality control of the elevator, the method of sampling, and the efficiency of inspection arrangement. The maximum size of sublots for a lot of grain in a ship, barges, or a unit train is established to ensure that the samples are statistically representative of the lot. The size of the subplot is not changed during the loading of the grain. The size of the subplot can range from 20,000 bushels to 60,000 bushels.

Terminal elevator.....An elevator located at a point of accumulation and distribution in the movement of grain. Often it receives grain by carload rather than truck load as at a country elevator. It is also in the business of storing grain for hire for others and is operated by a wholesale grain dealer as opposed to a country grain dealer.

## REFERENCES

- Boynton, R.D. "Feed Business Varies Among Midwestern Elevators" Feedstuffs, Vol. 53, No. 42, Oct 12, 1981.
- Kansas Department of Revenue. Statistical Report of Property Assessment and Taxation for Tax Year 1980 Division of Property Valuation PV-AD-3 State of Kansas.
- Paquette, Gerald, J. Personal Communications, Minneapolis, MN Sept. 8, 1981.
- U.S. Department of Agriculture Agricultural Prices, various issues, Crop Reporting Board, Washington, D.C.
- U.S. Department of Agriculture, Grain Inspection's Manual, Agricultural Marketing Administration, Washington, D.C. July 1, 1942.
- U.S. Department of Agriculture/Federal Grain Inspection Service. Personal communication with William C. Shuey, Feb. 25, 1982. Washington, D.C.
- U.S. Wheat Associates, Personal Communications with various regional offices. January 1981 to April 1982.

## BIBLIOGRAPHY

- Ackels, A.A., "Wheat Loss Control in Mill Storage Elevators" Grain Handling and Storage Association of Operative Millers. April 1965. pp. 2849-2854.
- Alf. Hannaford & Co. Pty. Ltd., Personal Communication. March 25, 1982.
- American Feed Control Officials, Inc., Official Publication, 1981. pp. 139 - 140.
- Allee, G.L., "Effect of Grain Source and 0 or 4% Added Fat on Performance of Finishing Pigs" Kansas State University Report to Congress 312, Swine Day '77, K.S.U., Manhattan, KS, 1978.
- Allee, G.L., "Performance of Pigs Fed Corn Sorghum, or Wheat with 0 or 4% Added Fat" Kansas State University Report to Congress 342, Swine Day '78 K.S.U., Manhattan, KS, 1978.
- Allen, R.D., "Feedstuffs Ingredient Analysis Table: 1981 Edition" Feedstuffs, Volume 53, No. 30 July 23, 1981.
- Anderson, S.L., Foley, K.M., Current Utilization of Grain Dust. The Andersons, R&D, Dept. Maumee, OH./National Grain & Feed, Washington, D.C. '3 March 1981.
- Anthony, W.E., "The Language of Grades" speech prepared for A Symposium on Biological Contamination of Grain and Animal Byproducts, Minneapolis, MN, February 17-18, 1969.
- Association of American Feed Control Officials, Official Publication 1981. AAFCO, Inc.
- Axe, D., Ilg, H., Bolsen, K., Behnke, K., "Grain Dust for Finishing Cattle" Cattlemen's Day 1980, Report of Progress 377 Agricultural Experiment Station, K.S.U. Manhattan, KS., March 7, 1980.
- Bale, M.D. & Ryan, M.E., Wheat Protein Premiums and Price Differential Technical Article No. 756, Montana Agricultural Experiment Station, March 1977.
- Behnke, K.C., Clark, H., Helmer, L., "Grain Dust Utilization in Animal Feed" Feedstuffs, Vol. 51, No. 11, 12 March 1979, pg. 31-32.
- Birmingham, S.C. & Hill L.D., "A Fair Average Quality for Exports" Cereal Science, Vol. 20, No.4, March 1979.
- Bolsen, K.K. Axe, D.E., Ilg, H.J., "Grain Dust and Commercial Taste Supplement Rations for Finishing Lambs" 1980 Sheep Day Report of Progress 387 Agricultural Experiment Station, K.S.U. Manhattan, KS, September, 1980.
- Bureau of Agricultural Economics. The Service of Federal Grain Standards Miscellaneous Publication No. 328, U.S. Department of Agriculture, Washington, D.C. December 1983.

- Bureau of Agricultural Economics. Use of Sieves and Cleaning Devices Under the United States Grain Standards General Field Headquarters Memorandum No. 149., U.S.D.A. Washington, D.C. 15 June 1936.
- Bushuk, W. "Wheat Grading Systems of the Major Wheat Exporting Countries: Argentina, Australia, Canada, France and U.S.A." Proceedings of the 10th National Conference on Wheat Utilization Research, U.S.D.A., S.E.A. ARMW-4.
- Canadian Grains Council "Market Specifications for Canadian Grains." Grain Handling and Transportation Committee, Winnipeg, Manitoba, April, 1977
- Canadian International Grain Institute Grains and Oilseeds; Handling, Marketing Processing Canadian International Grains Institute, Winnipeg, August, 1977.
- Caves, R.E. "Organization, Scale, and Performance of the Grain Trade" Food Research Institute Studies Vol. XVI No. 3, 1977-78 Standford University.
- Cotton, R.T., Walkden, H.H., White, G.D., Wilbur, D.A. Causes of Outbreaks of Stored-grain Insects. Bulletin 416 Agricultural Experiment Station, Kansas State University and U.S.D.A., Manhattan, KS. February, 1960.
- Deyoe, C.W., Waggle, D.H. & Farrell, E.P. "Analyses of Wheat and Milling Products and Their Nutritional Value" Feedstuffs Vol. 39, No. 17, pg. 26. April 29, 1967.
- Driscoll, J. L. & Niernberger, F.F. "Advantages and Disadvantages of a System of Grades for Grain" CED working paper U.S. Department of Agriculture, Washington, D.C. January, 1976.
- Farrell, E. P. and Ward, A. B. "Losses During Transfer of Wheat" AOM Bulletin Association of Operative Millers, Kansas City, April, 1965.
- Enchian, R. V., Kuznicky, D.D., Kohler, G.O. "Wheat Millfeeds in Livestock Rations: An Economic Analysis" Agricultural Economics Report 219 U.S.D.A. Econ. Res. Serv., A281.9, AG.84a. Washington, D.C. Jan. 1972.
- Federal Grain Inspection Service. "F.G.I.S. Hazard Alert System" U.S. Dept. of Agriculture Washington, D.C. 11 Feb. 81.
- Federal Grain Inspection Service. Historical Review of Changes in the Grain Standards of the United States U.S. Department of Agriculture Washington, D.C. 0-310-945/FGIS-147. 1980.
- Federal Grain Inspection Service, Unpublished data, Washington, D.C. March 17, 1983.
- Federal Grain Inspection Service, U.S.D.A. Report on the Adequacy of Existing Official U.S. Standards for Grain. Washington, D.C. April 1979.
- Foote, Duane, Grain Grading Cooperative Extension Service, Institute of Agriculture and Natural Resources. University of Nebraska, Lincoln July 1978.



- Freivalds, J., Grain Trade Stein & Dey, New York, 1976.
- Fuller, Stephen W. & Manuel, Milton L., Factors That Affect Country Grain Elevator Efficiency Bul. 550, Manhattan, KS., K.S.U. KS. Agricultural Experiment Station, 1972.
- General Accounting Office - Report to the Congress, Farmer-Owned Grain Reserve Program Needs Modification to Improve Effectiveness Volume 1, Chapter 3, "The Farmer-Owned Reserve Includes Some Grain of Questionable Quality," CED, 81-70, June 26, 1981.
- Gittinger, D.P., Economic Analysis of Agricultural Project Johns Hopkins University Press, Baltimore & London, 1972.
- Grain Marketing Symposium, Proceedings of Marketing Grain North Central Regional Research Publication No. 176 Purdue University, Lafayette, IN January 1968.
- Heid, W.G. Jr., "Grain Marketing -- A General Description" Proceedings of the NCM - 30 Grain Marketing Symposium, North Central Region Research Publication No. 176 Purdue University, Lafayette, IN January 1968.
- Heid, W.G. Jr., U.S. Wheat Industry Agricultural Economic Report No. 432 U.S. Department of Agriculture Washington, D.C., April 1980.
- Hill, L., Paulsen, M., Early, M., Corn Quality: Charges During Export Special Publication 58 Agricultural Experiment Station, University of Illinois, Urbana - Champaign. September 1979.
- Hoffman, K.J., & Hill, L.D., "Historical Review of the U.S. Grades and Standards for Grain" Illinois Agricultural Economics, Vol. 16 No. 1 January 1976.
- Johnson, P. R., Grennes, T., Thursby, M. "Trade Models with Differentiated Products." Proceedings of the Allied Social Science Assoc. Annual Meeting, Chicago, 29-31 August 1978.
- Kansas Crop & Livestock Reporting Service, Kansas Wheat Quality 1980 Kansas State Board of Agriculture, U.S. Dept. of Agriculture, Topeka, 1980.
- Kansas Department of Revenue Real Estate Assessment/Sales Ratio Study 1980. Division of Property Valuation. State of Kansas.
- Kansas Grain and Feed Dealers Association. 1981 Grain Elevator Appraisal Guide Kansas Appraisal Guild, Kansas Dept. of Revenue, Division of Property Valuations. March 17, 1980.
- Kansas State University "Swine Update" Vol. 2, No. 5, Fact sheet, K.S.U. Manhattan, KS. Sept. - Oct. 1981.
- Kansas State University "Wheat Grading Factors" Cooperative Extension Service, Manhattan, KS, August 1977.

- Kiser, H.L., "Comments on Measuring the Economic Impact of Changes in the Grain Standards; Criteria, Methodology, and Data Requirements" Kansas State University. Manhattan, KS July 24, 1980.
- Kiser, H.L. & Haque, E., A Feasibility Study of Converting the Bagged Grain Storage and Handling System for a Low-Cost Extrusion and Cooking Plant in San Jose, Costa Rica and Post-Harvest Soybean System Assessment Food and Feed Grain Institute, K.S.U. Manhattan, KS Jan. 25, 1980.
- Leidahl, R. "European Praises U.S. Grain Grading, suggest Ingredient Improvements" Feedstuffs Vol. 53, No. 12, March 23, 1981.
- Maness, J.E. "Study Reveals Trends, Most-Violated Clauses in OSHA Citations of Grain and Feed Facilities" Government and Grain National Grain and Feed Association Washington, D.C. July 25, 1981.
- "Solons seek Ban on Grain Dust Exporting" Washington, (AP) Thursday, Sept. 11, 1980 Manhattan Mercury B5.
- Martin, C.R. & Stephens, L.E. "Broken Corn and Dust Generated During Repeated Handling" Transactions of the American Society of Agricultural Engineers., Vol. No. 1 pp. 186-171, 1977.
- Martin, C.R. "Characterization of Grain Dust Properties" Transactions of the American Society of Agricultural Engineers, Vol. 24, No. 3, pp. 738-742, 1981.
- Martin, C.R. & Lai, F.S. "Measurement of Grain Dustiness" Cereal Chemistry, Vol. 55, No. 5 pp. 779-792. American Association of Cereal Chemists. 1978.
- Martin, C.R. & Sauer, D.B. "Physical and Biological Characteristics of Grain Dust" Transactions of the American Society of Agricultural Engineers, Vol. 19, No. 4 pp. 720-723, 1976. ASAE. ST. Joseph, Michigan.
- Miller, D.S., Pomeranz, Y., Converse, H.H., Brandenburg, N.R. Removing Garlic Contamination from Harvested Wheat. U.S. Dept. of Agr., Production Report N. 173. Washington, D.C. 1977.
- Milling & Baking News "Canadian Group Views Grain Grading System to Seek Efficiencies" (Winnipeg, Aug 18) August 19, 1980.
- Milling & Baking News "Technical Report: Milling and Grain Cargill updates Houston." March 30, 1982.
- Milner, R. Grain Marketing; Pricing, Transportation West-Camp Press Inc., Westerville, OH 1970.
- National Fire Protection Association, Inc. Grain Elevators and Bulk Handling Facilities 1980, NFPA 61B N.F.P.A., Batterymarch Park, Quincy, Mass. 1980.
- Nichols, T.E. Jr. Grain Standards and Discounts for Corn, Soybean, and Wheat The North Carolina Agricultural Extension Service, N.C. State University at Raleigh.

- Niernberger, F.F. "Economic Implications of Wheat Grades in World Trade" Cereal Foods World., Vol. 20, No. 9, Sept. 1975, pg. 390.
- Niernberger, Floyd, F. & Schnake, L.D. Grain Marketing in the United States, 1970-75 USDA Grain Marketing Research Center Manhattan, KS June 1976.
- Schafer, Werner, "Besatz" Cereal Science Today Vol. 8, No. 5 May 1963.
- Schnake, L.D. Grain-Dust Pelletting Costs and Capital Requirements for Stationary and Portable Plants U.S. Dept. of Agr. Washington, D.C. 1979.
- Schnake, L.D. Grain Dust: Problems and Utilization U.S. Dept. of Agr., Economics and Statistics Service. ESS-6 Washington, D.C. April 1981.
- Schnake, L.D. & Driscoll, J.L. Number and Physical Characteristics of Grain Elevators. U.S. Dept. of Agr. E.S.C.S. - 22 Washington D.C. May 1978.
- Schnake, L.D. and Watson, C.A. Diverter-Type Mechanical Sampling of Grain; A Cost Analysis U.S. Dept. of Agr., Agricultural Economic Report No. 273 Washington, D.C. January 1975.
- Shellenberger, J.A. "Grain Grades and Science" Cereal Foods World, Vol. 24, No. 2 February 1979.
- Shellenberger, J.A. "World Wheat Standards Compared" Cereal Foods World, Vol. 20, No.8, August 1975, pub. by A.A.C.C.
- Thompson, S.R. and Dahl, R.P. "The Economic Performance of the U.S. Grain Export Industry" Technical Bulletin 325 Agricultural Experiment Station, University of Minnesota, 1979.
- Topeka Capital Journal "Ban Sought on Mixing grain with Dust" Washington (AP) September 11, 1980.
- U.S. Department of Agriculture. Federal Grain Inspection Service Annual Report to Congress 1979 U.S. Dept. of Agr., Federal Grain Inspection Service, Washington, D.C. 1979.
- United States Department of Agriculture. Grain Grading Primer, Miscellaneous Publication No. 325, U.S.D.A. Washington, D.C. 1939.
- U.S. Department of Agriculture, F.G.I.S. Inspection Procedures. Grain Inspection Handbook, Book III, Washington, D.C. May 1, 1980.
- U.S. Dept. of Agriculture The Official United States Standards for Grain Federal Grain Inspection Service, Inspection Division, Washington D.C. January 1978.
- U.S. Dept. of Agriculture Service and Regulator Amendment, #22 U.S. Grain Standards Act. Washington, D.C. March 31, 1917.
- U.S. Department of Agriculture Study of Grain Inspection & Weighing at the Interior of the United States Office of the Inspector General Washington, D.C. May 1979.

U.S. Department of Agriculture. Wheat Situation World Food and  
Agricultural Outlook and Situation Board, USDA Washington, D.C., Feb.  
5, 1980, May, August, November 1980.

Wichita Eagle "Dust Threat to Exports, Agency Told" January 29, 1982.

Wilson, C.F. Grain Marketing in Canada, Canadian International Grains  
Institute, Winnipeg, Canada 1979.

may not exceed the limit for the factor "Defects (total)" for each numerical grade.

(d) **Distinctly low quality.** Wheat which is obviously of inferior quality because it contains foreign substances or because it is in an unusual state or condition, and which cannot be graded properly by use of the other grading factors provided in the standards. Distinctly low quality shall include any objects too large to enter the sampling device; i.e., large stones, wreckage, etc.

(e) **Dockage.** All matter other than wheat which can be removed readily from a test portion of the original sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual.<sup>2</sup> Also, underdeveloped, shriveled, and small pieces of wheat kernels removed in properly separating the material other than wheat and which cannot be recovered by properly rescreening or recleaning. (See also § 26.305 and § 26.307.) For the purpose of this paragraph, "approved device" shall include the Carter Dockage Tester and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(f) **Foreign material.** All matter other than wheat which remains in the sample after the removal of dockage and shrunken and broken kernels.

(g) **Heat-damaged kernels.** Kernels, pieces of wheat kernels, and other grains that are materially discolored and damaged by heat which remain in the sample after the removal of dockage and shrunken and broken kernels.

(h) **Moisture.** Water content in wheat as determined by an approved device in accordance with procedures prescribed in the Equipment Manual.<sup>2</sup> For the purpose of this paragraph, "approved device" shall include the Motomco Moisture Meter and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(i) **Other grains.** Barley, corn, cultivated buckwheat, einkorn, emmer, flaxseed, guar, hull-less barley, nongrain sorghum, oats, Polish wheat popcorn, poulard wheat, rice, rye,

<sup>2</sup>The following publications are referenced in these standards. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

(a) Equipment Manual, Gr Instruction 916-6, effective September 25, 1968, as amended, U.S. Department of Agriculture, Agricultural Marketing Service.

(b) Grain Inspection Manual, GR Instruction 918-6, effective August 28, 1972, as amended, U.S. Department of Agriculture, Agricultural Marketing Service.

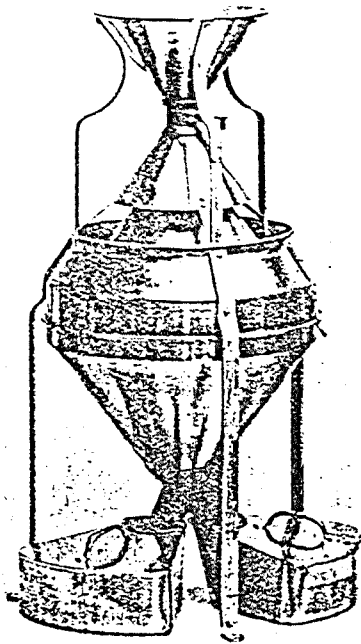


Figure 1  
BOERNER DIVIDER

General Operating Procedures:

1. Check the divider for overall condition and cleanliness.
2. Close the valve located at the bottom of the hopper.
3. Make sure the collecting pans are empty and placed under the discharge spouts.
4. Pour the sample into the hopper.
5. Open the valve quickly. If the sample is larger than the hopper capacity, more grain can be introduced into the flow during the dividing process.

Processing the Original Representative Sample.

The Boerner Divider is first used to process the representative sample into three representative portions: (1) work sample, (2) file sample, and (3) moisture portion.

Chart No. 1 - Processing Original Representative Sample

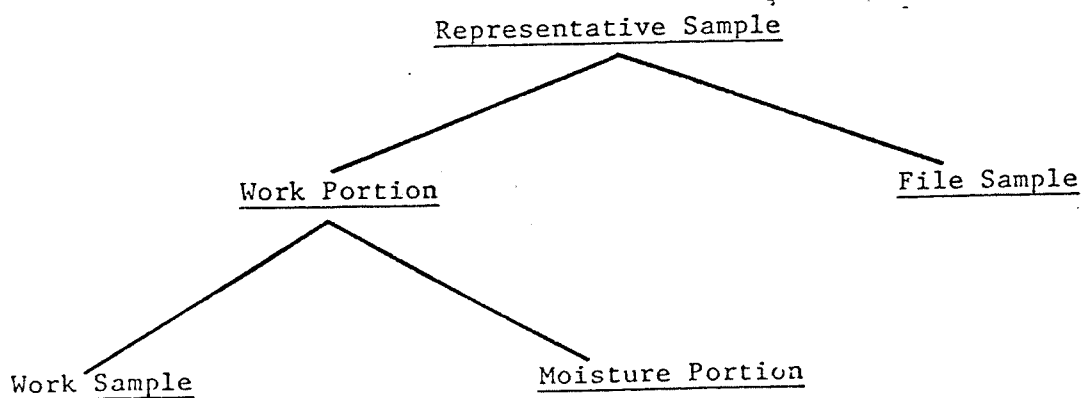
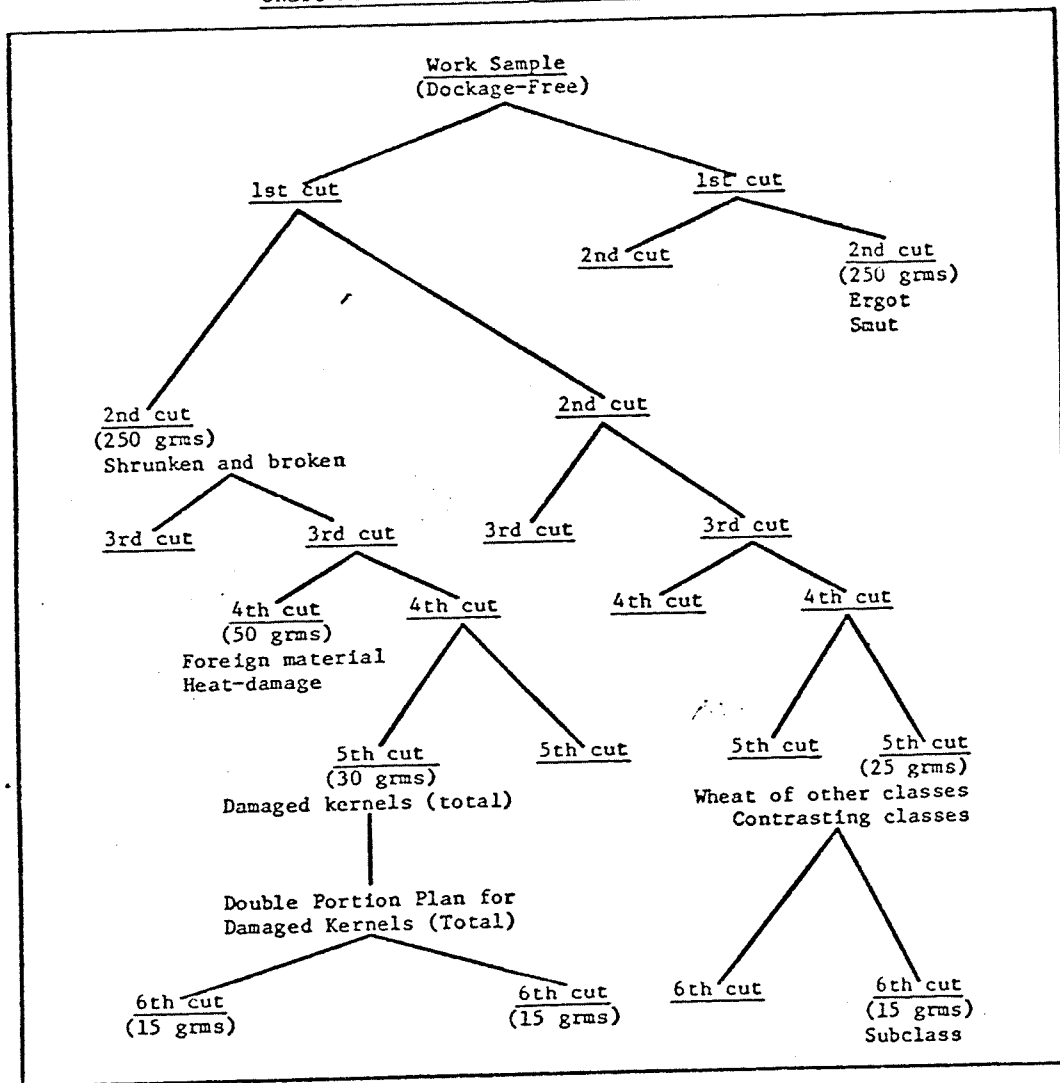


Chart No. 7 - Dividing the Work Sample



NOTE: The sample weights on this chart are approximate.

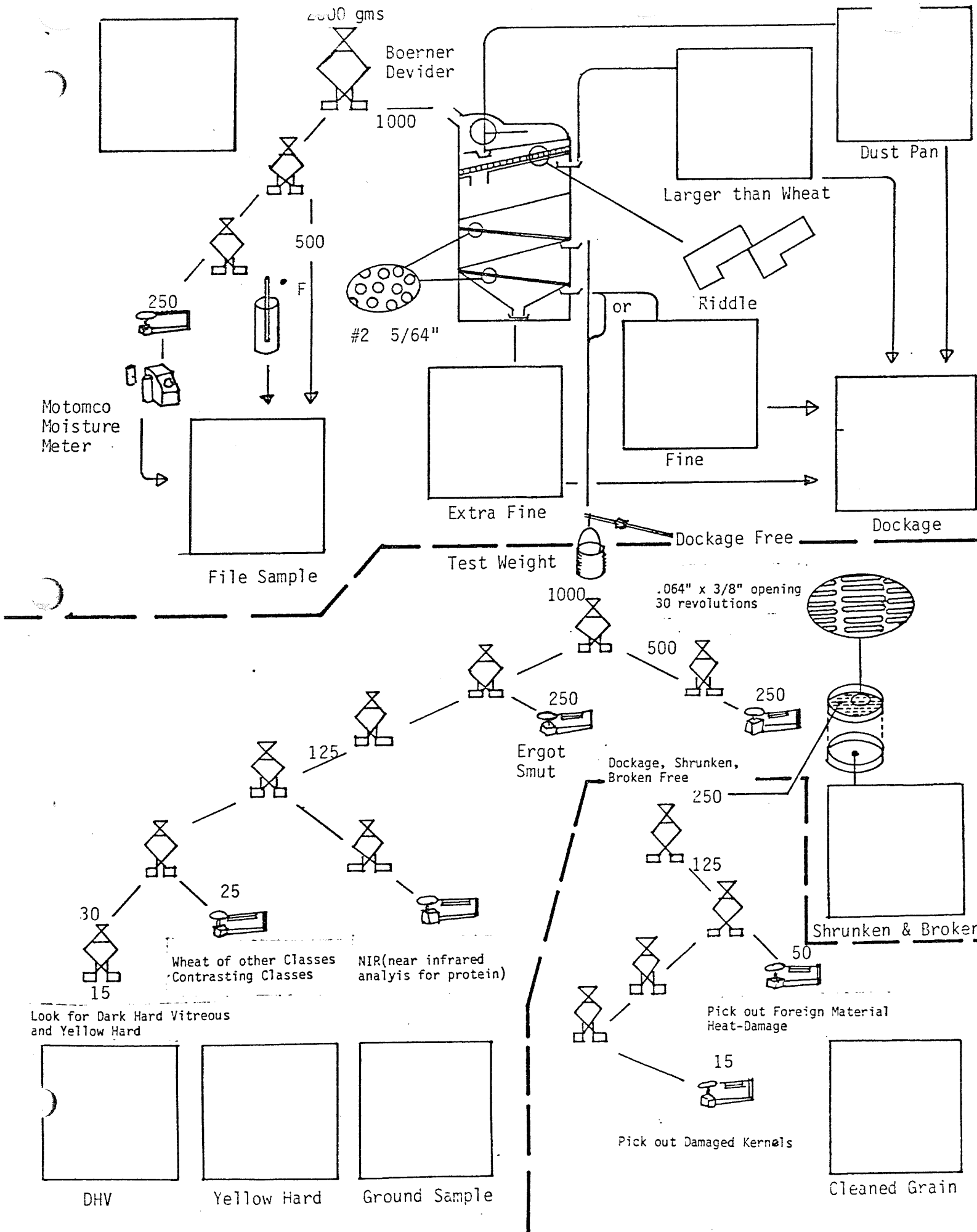
2.22 CLASS

Wheat shall be divided into the following seven classes with subclasses:

1. Hard Red Spring Wheat. ALL VARIETIES OF HARD RED SPRING WHEAT. THIS CLASS SHALL BE DIVIDED INTO THE FOLLOWING THREE SUBCLASSES:

a. Dark Northern Spring Wheat. HARD RED SPRING WHEAT WITH 75 PERCENT OR MORE OF DARK, HARD, AND VITREOUS KERNELS.

GRAIN GRADING - WHEAT





## Wheat Quality Concerns in the World Market

Maintaining the quality of wheat grown for the domestic and foreign flour millers is of growing concern.

The tremendous growth of the export wheat market, which now accounts for over 60% of all Kansas wheat grown, has been based on a combination of price, credit policy and grain quality. It is very difficult to weigh the impact of wheat quality on a given wheat purchase agreement, and the impact varies considerably from country to country. Some countries import wheat to boost the poor quality of their domestic crop. These countries are very concerned about the quality of the wheat purchased. Our own domestic market is very quality conscious. Other countries must buy wheat mainly to fill stomachs and are forced to buy wheat at the most favorable terms, with quality being only a low secondary consideration.

The message from our overseas customers is mixed. Many millers, however, are unhappy with the amount of foreign material in U.S. cargos.

Foreign material - material other than wheat - is part of the U.S. grading standard. Number 2 grade wheat, the most common grade sold, allows up to 1.0% to be present. Additional foreign material may be present in the form of dockage. The amount of dockage in a shipment of wheat is determined by a contractual agreement between the buyer and seller and does not affect grade. Most shipments will contain approximately 1% of dockage. Dockage is deducted from the gross weight of a shipment in calculating the cost, but the buyer must pay freight, handling, storage and cleaning costs. In some areas of the world, such as the European Economic Community, a tariff equal to wheat is charged against this non-wheat material. In some countries the foreign material removed by the flour mill has an economic value, in other countries

it must be literally thrown away.

Is Kansas losing sales of wheat because of this foreign material? The traders say "not so." They point out that any attempt to change the standards or to force cleaning of wheat by legislative means will only mean reduced prices to the producer. They point out that, despite some customer dissatisfaction, the overseas buyer will not pay more for cleaned grain. Many of the complaints on foreign material come from flour millers who receive only a portion of the original cargo. Due to a segregation by density, foreign material may be concentrated into certain portions of a ship's cargo during rehandling and high concentrations of non-wheat material may end up in the smaller river going barges that are purchased by the inland miller.

As the study made for the Kansas Wheat Commission indicates there are selective opportunities for U.S. grain producers and elevator operators to profit from cleaning wheat. It is selective, because many factors enter into the economics of wheat cleaning and what is profitable at one location may not be profitable at another.

In my opinion, what is needed at this time is:

1. Continued efforts to disseminate information that will help the producer and elevator operator in making a decision on the profitability of cleaning wheat before sale or resale.
2. Revise the Grain Standards so as to include Dockage into the Foreign Material test for grading wheat.
3. Conduct a broad study of the world wide wheat marketing picture to determine the exact impact, on each buying country, of U.S. wheat quality, or lack of it, with proposed solutions to any problems encountered.

Another quality factor that is becoming more and more of a concern is

hidden insect infestation. The domestic and foreign miller must produce flour that is substantially free of insect parts. Although the cleaning systems of mills removes the largest part of infestation before milling, it is not perfect. Present grain standards only recognize wheat quality deterioration by insects if they are present in the live state or if excessive loss of the external part of the wheat kernel is evident. Much of the insect infestation in wheat is internal and cannot and is not recognized by present F.G.I.S. procedures. It is most important that a quick and accurate method for the detection of internal infestation be developed and included in the grain standards. If this is not done, it might be expected that further damage to the reputation of U.S. and Kansas wheat quality might result.

Department of Grain Science and Industry  
Kansas State University