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EXPORT GRAIN QUALITY STANDARDS

HEARING

BEFORE THE

SUBCOMMITTEE ON AGRICULTURE AND TRANSPORTATION

OF THE

JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

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TUESDAY, AUGUST 26, 1986

EXPORT GRAIN QUALITY STANDARDS

TUESDAY, AUGUST 26, 1986

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON AGRICULTURE AND TRANSPORTATION
OF THE JOINT ECONOMIC COMMITTEE,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m., in the embassy room, Hickory House Inn, Huron, SD, Hon. James Abdnor (chairman of the subcommittee) presiding.

Present: Senator Abdnor.

Also present: Robert J. Tosterud, deputy director.

OPENING STATEMENT OF SENATOR ABDNOR, CHAIRMAN

Senator ABDNOR. The meeting will come to order. This is a hearing of the Subcommittee on Agriculture and Transportation of the Joint Economic Committee and fully recorded and kept for the record, and it's a very timely meeting and a very worthwhile one. I want to welcome everyone to today's meeting and in particular our witnesses, some of them have come from quite a way out.

The subject of today's hearing is complex and controversial. It concerns the general issue of U.S. competitiveness in agricultural export markets. South Dakota grain farmers know first hand the results of the Nation's poor performance in maintaining its share of export sales. Since 1982, U.S. wheat exports have declined 48 percent according to the Department of Agriculture. In 1985, 55 percent of all U.S. wheat sales, and therefore, 55 percent of the total wheat farm income now come from export purchases.

The economic recovery of American agriculture and South Dakota's agriculture is directly tied to improving our competitive position in world markets. If we intend to sell grain in the foreign export market, we have to be competitive, and in doing so our farmer's income has to be protected by the target price. This, in essence, is the primary objective of the 1985 farm bill, to reverse the trend in exports.

Assistant Secretary Peter Myers at the annual Farm Fest at South Dakota State University stated and I quote: "Wheat and corn orders are over last year's already." Now, that's the orders, that's not the delivery or sale. But a low demand and a low price for a product can also be the result of poor quality and that's why we're here today.

We've heard many examples as to how American farmers have been and continue to be disadvantaged in the promotion and the sale of products in international markets; the high value of the dollar, trade barriers, foreign subsidies, just to mention a few.

Given the huge surplus of grain in the world today, it's a buyer's market. A successful sale of grain requires competitive quality as well as price.

The amendment that I offered to the 1985 farm bill has brought about a study which is designed to ultimately yield recommendations to promote export grain sales by protecting the quality of grain exported from the United States. And I chose the Office of Technology Assessment, an agency of the Congress, to perform this study not only because of its excellent reputation with the Congress, but because of the technology aspects of this issue. I and many others, I would suspect, are concerned that our grain handling practices as well as our quality standards may be following the same road traveled by the U.S. auto industry, recognizing too late the changing preferences and the needs of the customers.

The Office of Technology Assessment has informed me that they are capable of handling this controversial project and they intend to provide us with its report, with recommendations to Congress, within 18 months after they start.

My amendment that set this about calls for first evaluating the competitive problems the United States faces in international grain markets that may be attributed to grain quality standards and handling practices rather than price. Second, identifying the extent to which the U.S. grain export quality standards and handling practices have contributed toward a recent decline in the U.S. grain export. Third, performing a comparative analysis between the grain quality standards, practices, and technology of the United States and the major grain export competitors of the United States.

And finally, evaluating the consequences of the U.S. export grain sales, the cost of exporting grain and the prices received by farmers should the U.S. export grain elevators be subjected by law or regulation to changes in quality standards.

Now, I anticipate that today's witnesses will address these issues as well as others. The testimony and the findings of this hearing will be provided to the Office of Technology Assessment to aid them in their study. And again, I thank you for coming, and I want to get right on with the witnesses.

Incidentally, to my right is Steven Censky who is a member of my staff. Our first witness is Joe Halow, executive director of the North American Export Grain Association, Washington, DC. I've worked with Mr. Halow a number of times over the years; Lowell Hill, who is a professor, Department of Agricultural Economics at the University of Illinois; and Merlyn Groot from——

Mr. GROOT. Manson, IA.

Senator ABDNOR [continuing]. Manson, IA, who has been very, very involved in this issue and one of the real farmer experts in the field. So, gentlemen, we welcome all three of you to the subcommittee and, Joe, I guess we'll let you start off. You have to leave first, I guess.

STATEMENT OF JOSEPH HALOW, EXECUTIVE DIRECTOR, NORTH AMERICAN EXPORT GRAIN ASSOCIATION, INC.

Mr. HALOW. Thank you, Senator. I appreciate the opportunity to present the views of my association here at this meeting. My name is Joe Halow. I'm executive director of the North American Export Grain Association. The 33 members in our association consist of both farmer cooperatives and private stock companies. They're the chief exporters of grain from the United States, and their firms are obviously touched by anything that has to do with the quality of the grain and the flow of the grain from the United States to our overseas customers. And in this regard they're obviously very disturbed by the recent complaints about grain quality and a lot of discussion about grain quality in the United States.

As some of you may know, our organization was the leading or the driving force that started the grain quality workshops which met and worked through the first part of this year in trying to come to some kind of solution or actually some kind of remedy to the grain quality problems that were announced to the United States or abroad. And some of the recommendations made by this committee have already appeared in the Federal Register. Since the sessions on grain quality, the group has met also to consider some problems on wheat classification, and they're going to continue to meet from time to time throughout the next several years, probably twice annually, to discuss any facet or any problems that may come up with regard to grain quality. Incidentally, in the group we have all people from, you know, everybody who has anything to do with the export of grain. That includes some farmers through the grain exporting firms, so we feel that we do have a complete cross section of the entire grain exporting industry.

We found it somewhat difficult to comprehend the continued discussion on grain quality and the continued complaints that there have been about grain quality, but we feel that obviously this is another issue, another factor that people have taken on with regard to the decline in U.S. grain exports. For a while, of course, it was a strong dollar, and at the present time you don't talk about the strong dollar any more. And I guess they picked up on grain quality and will continue with grain quality.

But I used to be in Great Plains—I was in Great Plains Wheat for 10½ years. During the time I was there we never had real problems with grain quality, but, of course, we have a bullish market and grain was being exported without much problem and certainly no complaints on U.S. grain quality.

I've never said or would never say that there are not times where there is not a problem with a specific lot of grain or a specific shipment of grain, and there are also times when there might be problems with an entire crop. For example, say, 2 years ago we had problems with the corn crop which was harvested because of a long and unusually warm and humid fall and early winter. And the corn went out of condition on shipment after it was inspected, actually after it was loaded on the vessel and before it arrived at its destination.

And likewise last year we had problems with soybeans which were also harvested under similar circumstances where the crop

was too wet, and actually some of the soybeans were snowed on and they were harvested after the snow melted and the farmers had a chance to pick them. So you can imagine that they weren't the very best, but these constitute an exception rather than the rule on quality, you know, which I would say is still very good in the United States.

The United States prides itself on quality and we have actually almost any quality that anybody could want. We have the greatest variety of grains that anybody could want and the greatest variety of wheats that anybody could want, in fact, anything anybody could want, a complete showcase.

And you know, I've already mentioned, of course, the fact that quality problems are a product of the weather, as a matter of fact, weather and geographic conditions. And if the weather conditions are good, favorable to the crop, the crop is generally favorable.

At the present time we're having problems with the crop being harvested in North Dakota and also in Minnesota. What those quality problems will result in, I don't really know, but the grain will be harvested and it will have to be marketed abroad. Nobody throws the grain away and you can't really afford to. It's a matter of that it becomes a problem of the grain exporting firms to try to market the grain and market it properly.

I should also add that the grain is always weighed and inspected, of course, by the Federal Grain Inspection Service before it is shipped, and as such it is attested to and certified by them as being up to the grade and quality which was purchased by the buyer.

It is interesting anyway to note here that despite the problems that we had with soybeans last year that soybean exports are the only grain—if you don't mind, I'll call soybeans as grain—as a matter of fact, soybeans were the only grain of which the United States shipped more this year than it did last year, as a matter of fact, despite the fact that there had been a lot of complaints on the quality.

And this would suggest that there is something besides quality which is cutting back into our exports of, say, with corn and wheat. If you look back at it, you can fairly well determine that it's price. U.S. wheat prices were about $30 to $40 a ton higher than the other prices of wheat in the world markets. And you can't imagine that anyone would want to buy U.S. wheat that costs $120 a ton as compared to European wheat that costs $80 a ton, the difference is just too much.

And there are countries, of course, which are forced to buy the grain and they will buy it, but they also want it to be perfect. And of course, nothing is perfect. You know, mother nature doesn't really produce perfect specimens, or no two specimens are alike, it just doesn't happen. As a matter of fact—and you can find fault with any shipment if you wanted to. I mean since nothing is perfect, you can find fault with it if you want. And if the price is high, people do find fault with it.

At the present time our wheat exports have picked up. Our wheat exports have been something like one-half of what they were last year. They picked up a little bit this year, but that's really because of the Export Enhancement Program. And there are a lot of questions about the Export Enhancement Program, but export

wheat is going only to those destinations which the USDA selects, leaving the other nations seriously offended and buying more and more of their requirements from competitors of the United States.

But we're selling more wheat abroad and that's going out because, of course, the price is reduced as a result of the Export Enhancement Program which gives the exporters the subsidies or pays the farmers essentially the difference between the lower price and the much higher U.S. price.

There have been a lot of allegations that the United States ships dirty grain. We feel that those who continue to speak publicly of dirty U.S. grain are doing not only U.S. agriculture but the entire Nation a great disservice. It's somewhat difficult to counter an argument posed by someone who insists that the United States ship cleaner grain or better grain. You always strive for a better product.

But again, I'd like to point out that nature doesn't produce perfect products. As a matter of fact, you know, when a farmer harvests grain, of course, you get straws and stuff, wheat seeds, and so forth in the grain. And in Canada that's all cleaned, but the farmer pays for the cleaning whether he knows it or not. The Canadian Wheat Board deducts the cleaning cost from the final payment to the farmer about a year and a half after he sells the grain.

This doesn't happen in the United States. The farmer commits his price for his grain when he delivers it to the elevator and that's that. No one has any recourse to the farmer. He loses all responsibilities for the grain. And the exporter, of course, cannot afford to clean it either, nor can anybody here in the United States. And as I say, in Canada, whether the farmer knows it or not, he pays for it. If the U.S. farmer were to be held liable for it, we could have cleaner grain if the farmer would clean it.

But the grain, again, I'd like to express, is shipped from the United States in accordance with the standards, not only the standards, but in accordance with the contract terms which are closed between the seller and buyer, and it is certified again according to the buyers' specifications. And when it arrives at the foreign destination, if it is out of condition or something it's the grain exporter who has to bear the brunt.

The Federal Grain Inspection Service might have the responsibility, but it doesn't have any of the liability and it never pays. I mean it might say something is No. 2. If the customer who gets it says it's No. 3 or No. 4 and talks about the exporter for it, the Federal Grain Inspection Service doesn't come across. The exporter has to pay, despite the fact that he counts on the certificate issued him by the Federal Grain Inspection Service.

I'd like to add here that both FGIS and the General Accounting Office have investigated grain fault complaints, and both of them have come through and their findings indicate that the grain in the interior has at least as much dockage in it as the grain does when it's exported. In fact, they found that exported grain usually has less dockage in it than does the grain in the interior.

The report from the GAO indicated that export grain on an average contained about 0.76 percent dockage, whereas the average of the interior grain contained 0.91 percent dockage. This suggests strongly that it is somehow either cleaned as it passes through the

elevators or that it is mixed with some clean lots of grain, or that the exporters ship only the cleaner grain.

If United States insists on shipping grain which is freer of dockage, it has been suggested that the country elevators could probably clean it more economically than it could be cleaned by the grain exporters. In order to add facilities, Mr. Harvey Kiser, an agricultural economist at Kansas State University has determined that the exporter would have to add to—or substract from—the price, depending—either subtracting the price you pay to the farmer or have to add it to the price that he gets from the buyer, 10 to 50 cents a bushel. A country elevator could do it more simply at a cost of about 1 cent a bushel, says Mr. Kiser.

And he also makes a point or he claims to make a point—I guess it's an exaggeration—but he says that he does not think that this would increase the quantity of grain sold from the United States at all, certainly not initially, although he hopes, of course, it would make the buyer so happy with U.S. grain that they would want to buy it and continue to buy it. I would say that they would want to continue to buy it if the price were competitive with the price of other wheats.

I personally, quite frankly, have become very tired of hearing continued discussions indicating that the United States produces and ships an inferior quality. As I said, I worked in Great Plains, and for 10½ years I visited a lot of foreign buyers, and they never complained about U.S. quality.

I had one complaint one time from someone in Europe, in Germany, who complained—I asked him to send us copies, a sample from which he had made his determination. The guy said, yes, he'd send it. He never sent it. He never sent the sample with a breakdown so you could determine that the grain was defective. He never did. As a matter fact, I guess maybe they're still waiting for it, but it would be almost 16 or 17 years ago and it's never arrived.

I've indicated that the United States ships the most complete assortment of wheats, you know, in the world. It also ships the greatest amount of corn from anywhere else in the world and it's been the leading soybean exporter in the world.

The allegation that Canada and Australia have shipped better quality grain is really not true, and that they supposedly get a premium for their grains and ship better quality is also not true. When I was in Great Plains Wheat I determined over and over again that the U.S. spring wheat, for example, was regarded more highly than the Canadian spring wheat, despite the fact they paid more for U.S. grains than the Canadian wheats. The Canadians have an announced board price, and they also have a price at which they sell. They usually sell at lower—they don't announce the price at which they sell, but they do announce the price at which the board posts.

Since U.S. grain qualities have not changed basically, actually what has changed basically? And the nations who have felt obliged to buy wheat from the United States are doing it almost unwillingly, and when one pays more for something he expects it to be perfect. He is more apt to complain then about factors which he would otherwise ignore. He is even more apt to complain about it if he is furthermore invited to do so.

And I frankly feel that buyers are being almost invited to complain about U.S. grain. I mean when you have a visit by the Federal Grain Inspection Service, the oversea monitoring branch, the Federal Grain Inspection Service, which is one of my favorite hobbyhorses as a matter of fact, but if you have somebody from an organization called oversea monitoring and it calls on you, what do you expect them to talk about? As a matter of fact, they expect you to talk about quality. And you keep asking somebody about the quality of a given product, if he's paying more for it he will some day complain about it.

If you keep talking about how bad the quality of U.S. grain is, you soon convince the people and you soon have them all complaining about U.S. grain. I think we're doing U.S. agriculture a tremendous disservice by continuing to talk publicly about U.S. grain quality and continuing to suggest that it is bad. I really think U.S. grain quality is actually quite good. I don't think we should complain.

Actually, one time I heard somebody from the U.S. grain inspections system asking a buyer from Africa, South Africa as a matter of fact, who was a fairly significant wheat importer from the United States, he said, I only have one question to ask you: What do you think of the quality of U.S. wheats? He said, well, I think they're fine. The guy looked at him and he said, well, that's different.

As a matter of fact, this sort of thing, it sticks. If you continue to do it, you'll soon convince somebody that the grain is bad. And it is not bad. It's actually quite good grain.

And I think the grain quality problems maybe actually have started in the United States. We have, for example, the sheer fact that we don't have much storage space and the farmer has been permitted to store his grain as he will and still gets his payments. And a lot of it is going to be stored on the ground. I wonder what will happen when you start getting complaints about dirt being in the grain and the fact that the exporters—I mean it's always there for some reason.

I've indicated that there are exceptions. The exporters attempted to call attention to the fact that the 1984 U.S. crops were bad. They were almost laughed at, and they turned out to be quite bad. I'd like to call attention to the carryover. Some of it is not in the most perfect storage, and when it comes out of storage some of that may be bad, as a matter of fact, and this will go into the mainstream of agriculture and U.S. grain that will be shipped.

We may have problems with some of the stored grains, and this issue has been discussed already so long, with the entire industry's recommendations on it now before the FGIS. I feel we should stop promoting the very bad publicity we began by discussing this issue publicly and begin to concentrate on the real reasons for the decline in grain exports from the United States. If we expend further time and further energy on the quality issue, we'll be wasting time and effort which we should use in attempts to try to regain the markets which we have lost. It's a difficult enough job as it is. I don't know that we can do it very quickly, but I think we should concentrate on the real problem and stop chasing after something which is really not going to yield U.S. agriculture anything.

I think with that, I'll stop. If there are any questions, I'll attempt to answer them.

[The prepared statement of Mr. Halow follows:]

PREPARED STATEMENT OF JOSEPH HALOW

My name is Joseph Halow, and I am the Executive Director of the North American Export Grain Association. The 33 Members of our association, consisting of both farmer cooperatives and private stock companies, are the chief exporters from the United States, and their firms are obviously touched by any disruption in the flow of U.S. grain to overseas customers. In this regard they are obviously disturbed by the continued negative discussion of U.S. grain qualities as grains are exported or as they are received.

As you may know, our organization was the driving force in creating the Grain Quality Workshop group, which worked throughout the first part of the year, studying U.S. grain qualities, and it has made its recommendations to the FGIS, some of which have already appeared in The Federal Register. Since the sessions on grain quality the group met to consider problems because of classification of wheats. It plans to continue to meet on a regular basis. The group is composed of representatives of the various facets of the grain trade, from the farmers through the grain exporters, so we feel it does represent a complete cross-section of the grain exporting industry.

Under the circumstances, it is somewhat difficult to comprehend the continued fascination with the topic of U.S. grain quality in certain quarters. We all know that grain is a product of nature and, since nature does not always produce perfect specimens, there are occasions when there may be some problem with

the crop. There are likewise occasions when there may be problems with a particular shipment, but we should point out that this is the exception rather than the rule. The United States sends many shipments into the export market---not nearly as many as we once did or as we would like---but there is rarely a problem with the grain. Two years ago there was a problem with the U.S. corn, because of a long and unusually warm and humid fall and early winter. The corn was virtually all harvested before there had been a frost, much of it too wet. The early harvested corn moved virtually directly from the field to the export vessels and, after a long voyage, arrived at destination with some problems. There was, likewise, a problem with soybeans last year for very similar reasons: The soybeans were harvested under very adverse, wet weather conditions and, as a result, there were problems with some of the shipments. There were virtually no problems with wheat, and to the best of our knowledge, there has not been a valid complaint problem with wheat during the year. As I have already mentioned, however, ~~this is~~ large problems with weather-damaged grain are the exception. Normally U.S. weather is not so unfavorable during the fall, and it could be another 20 years before the United States might harvest such a corn or soybean crop.

It is interesting to note here that despite the problems with U.S. soybeans in shipments this past year soybeans were the only grain of which the United States shipped more this year than it did last year. Shipments of wheat, with which there were no complaints which could have been upheld by the FGIS, declined drastically from those of the preceding year. All of this proves---or at least points to---something else as being the cause for the declining U.S. exports. And that factor is that U.S. wheat is no longer competitively priced

as compared to wheat from other exporting countries. In some instances the price difference has been as much as $30.00 to $40.00 per ton in favor of the competing wheats, which means a difference between something like $120.00 per ton for U.S. wheats, compared to about $80.00 per ton for European wheats. Who would not seriously consider European wheats before he would buy U.S. wheats? At the present time the United States is moving more wheat than it did during the 1985/86 shipping year, but this is virtually all moving under the subsidies granted by the Export Enhancement Program. It is going only to those destinations which the USDA selects, leaving the other nations seriously offended and buying more and more their requirements from competitors of the U.S.

With regard to allegations that the United States ships "dirty" grain, we feel that those who continue to speak publicly of "dirty" U.S. grain are doing not only U.S. agriculture but the entire nation a disservice. It is somewhat difficult to counter an argument posed by someone who insists that the United States should ship "cleaner" wheat or "better wheat," since obviously that is what everyone would want. The exporters also would like to ship cleaner grain and would ship it if grain came without dockage. They could, furthermore, have the dockage removed for the importer if the importer were willing to pay for it; but most of them are not. The grain which is shipped from the United States is shipped in accordance with the standards. It is weighed and inspected by Federal Inspectors before it leaves the country and, actually, as it is removed from the control of or contact with the exporter. It is certified according to the buyers' specifications. If when it arrives at destination the buyer indicates that it is not according to the certificate, the loading sample is again

checked. And in each instance the FGIS has usually certified that the complaint is not upheld by their reexamination. Whatever exceptions there have been have been treated quietly and, usually, satisfactorily.

I should add that both the FGIS and the General Accounting Office have investigated the U.S. grain shipments and their findings indicate that the grain is at least as free of dockage when it leaves the United States as it has been when it is delivered to the country elevator. Actually, the FGIS study, performed during 1985, indicated that export grain contained about one-fourth of one percent less dockage than the average of the grain found in the interior. Their report indicated that export grain, on an average, contained about .76% dockage, whereas the average of the interior grain contained .91% dockage. This suggests strongly that it is somehow either cleaned as it passes through the elevators or that it is mixed with some clean lots of grain, or that the exporters ship only the cleaner grain.

If the United States insists on shipping grain which is freer of dockage, it has been suggested that the country elevators could probably clean it more economically than it could be cleaned by the grain exporters. In order to add facilities, Dr. Harvey Kiser, an agricultural economist at Kansas State University has determined, the exporter would have to add to---or subtract from---the price as much as 10 cents to 25 cents per bushel. A country elevator could do it more simply, he added, at a cost of about 1 cent per bushel. It is interesting to note, however, that Kiser makes a point which our members have continued to stress: That if the United States were able to produce and sell

grain with the changes proposed by those who keep complaining about its quality it would not sell any more grain into export. Kiser exaggerates slightly, for he indicates that it would make the customers happier so they would want to buy more grain. I would add to that comment only that they would buy more grain only if the price were more competitive.

I personally have become very tired of hearing the continued discussions suggesting that the United States produces and ships an inferior quality. In my 10 1/2 years of experience with Great Plains Wheat I visited many overseas buyers in many parts of the world and I always found that U.S. qualities were among the best. The list of various classes of wheat and various grains shipped from the United States is unequalled by any other country in the world, and the qualities of U.S. wheats were preferred to similar wheats shipped from competing countries. The allegation that Canada and Australia ship better wheat and, therefore, receive a premium for it, was very definitely untrue during my period with Great Plains Wheat, and it is even less factual at the present time. German millers paid a premium for U.S. wheats over Canadian wheats, because they liked the U.S. qualities better. They did not mind that the U.S. wheats contained more dockage, since they cleaned this out, putting it into their mill feed operations.

Since U.S. grain qualities have not changed basically, what has? In the first place, the prices of world grains have dropped very sharply as compared to the prices of U.S. grain. Those nations who have felt obliged to buy wheat from the

United States are doing it almost unwillingly, and when one pays more for something he expects it to be perfect. He is more apt to complain then about factors which he would otherwise ignore. He is even more apt to complain about it if he is, furthermore, invited to do so. Buyers are not normally asked if they have any complaints on U.S. grain, but when they are visited by members of an FGIS overseas monitoring team, what else do they discuss with the team but the grain's qualities and conditions of shipment? In the early days of the FGIS the teams not only asked them what they thought of U.S. qualities but suggested that they should feel free to express their opinions. The officials even furnish them with printed complaint forms! Under such circumstances what can a buyer lose by formulating a complaint? Nothing, and he may even be able to exact some price concession from the seller! I once heard a member of the U.S. grain inspections system indicate he had only one question he wanted to ask of the monopoly buyer from South Africa and that was if he was satisfied with the U.S. wheat quality. When the buyer indicated it was very good, the Government official looked at me and commented aloud, "Well, that's different!"

Then too the buyers are visited by well-meaning farmers and representatives of farm groups from the United States, and they are frequently asked what they think of the U.S. grain which they receive and at times if they are satisfied with the quality. This takes place overseas as well as when the buyers visit the United States. It is obvicusly difficult---if not impossible---to control, but it should be noted that continuation of such questioning and such publicity to any such issue will attract more complaints. If one keeps suggesting long enough to a buyer that the quality he is receiving is poor he will soon be con-

vinced that the United States produces and ships nothing but poor quality. And I insist that that is not the case.

I have indicated that there are exceptions: An exporter attempted to call attention to the fact that the U.S. corn shipments from the 1984 crops could cause problems but was largely ignored. We should here like to call your attention to the fact that the very large U.S. carryover, wheat and other grains, is being stored in many facilities, some of them better than others. There may be problems subsequently with some of this grain when it comes out of storage and is prepared for shipment. The exporters are particularly concerned about grains which the Government is permitting farmers to store on the ground, for it will be almost impossible to avoid some quality problems with such grains, not to mention the possibility of having dirt mixed with it when it is lifted from the ground and moved either to export or into an elevator.

The issue has already been discussed so long, with the entire industry's recommendations on it now before the FGIS. We should stop promoting the very bad publicity we obtain by discussing the issue publicly and begin to concentrate on the real reasons for the decline in grain exports. If we expend further time on the quality issue we will be wasting time and effort which we should use in attempts to regain the markets we once had. It is a difficult enough job as it is.

Thank you.

Senator ABDNOR. Yes. Thank you for that statement.

Mr. HALOW. I'll ask you to forgive me. I can hardly speak.

Senator ABDNOR. Let me ask you this, Mr. Hill, are you under the same time constraints?

Mr. HILL. No.

Mr. GROOT. Not as much.

Senator ABDNOR. Can I ask Mr. Halow a few questions?

Mr. GROOT. Sure.

Senator ABDNOR. Because I know he wants to catch that 3:10 plane, and I appreciate the fact that he came all the way out here. We did talk about a lot of factors and there are a lot of factors that affect the export market and I think, though, I've been hearing about grain quality at the same time I heard about the high dollar. Mr. Gillis is the head of the Commission in Washington?

Mr. HALOW. Yes.

Senator ABDNOR. I've had business with him before I did this. We had the thought maybe we'd just slam through some legislation quickly. He came to me and visited with me about this. Would you agree with his statement that if we brought everything up to No. 1 wheat we'd have a hard time selling it?

Mr. HALOW. I think so. I don't think——

Senator ABDNOR. I don't know how other countries do it. I never got that answered. But they don't want to offer exclusively No. 1 grain. I'm not saying I agree with him.

Mr. HALOW. They wouldn't want No. 1 wheat actually at No. 2 or No. 3 price. Obviously, everybody wants it cleaner, but this is essentially what it would——

Senator ABDNOR. Do other countries have No. 1 grain?

Mr. HALOW. Canada does, but you can't really tell how Canada markets its grain because the Canadians market at prices which they don't announce. If the Canadian Wheat Board is the sole buyer and sole seller of grain, they can quote any price they want to and they do.

Senator ABDNOR. Off the subject of grain cleaning or quality. Are they complaining now because of what we've done or trying to regain exports? Are they one of those that are complaining like Australia is?

Mr. HALOW. I think so, but I don't think I'd pay much attention——

Senator ABDNOR. I have no concern for those countries. I mean Australia has been very vocal to me personally and in the newspaper, and I have a hunch that Canada maybe in their own way are not liking it either. But it's high time something was done.

Mr. HALOW. I just can't imagine that a competitor would be happy if the United States became more of an aggressive exporter.

Senator ABDNOR. I could care less whether they're happy or not, but we have to get those markets back. In that respect, in your judgment, and you're in the business, what are the two most important actions that need to be taken to improve our competitive position in the world agricultural market?

Mr. HALOW. Actually, I think you have to separate two issues in agriculture. You have to separate the domestic problems in agriculture, the farmer whose income is really very bad, and make sure that the farmer is guaranteed his income, but at the same time

keep that separate in anything that you do for agriculture because grain prices must be lower. The farmer should be given something. They should be considered separate issues. You cannot take action to help farmers if you're trying to make prices, you know, less expensive in the United States.

Senator ABDNOR. Wouldn't you say that's what we're trying to do here in the market today?

Mr. HALOW. Yes.

Senator ABDNOR. That's the intent in——

Mr. HALOW. Yes.

Senator ABDNOR. We recognize that farmers could never accept the kind of prices it takes to compete. At the same time and on the other hand, we recognize that if we're not going to be competitive we're not going to be in the business. So you do have two separate reasons and that's the reason for the high target prices occurring now.

Mr. HALOW. Another thing, I would recommend, quite frankly, that all customers be treated equally. We're treating customers with discrimination. You know, the Export Enhancement Program is run almost completely by the USDA. It's almost a quasi-wheat board determining who should get grain. The only way they'll buy it is subsidies that are granted on the Enhancement Program. The Soviets still offer the greatest potential of purchasing grain from the United States. We could probably sell more grain to the Soviet Union if we would offer it to them at a competitive price, but we don't. I would venture to say the longer the Soviets do without U.S. grain, the harder it is to get back into that market because you get accustomed to doing without it.

Senator ABDNOR. Too many places willing to sell it to them. It isn't like it used to be. We got everybody in the export business. I'd make an added comment that I was one of those really involved in trying to get this export program to all countries. I'm not too sure what the President did in designating only Russia to be eligible for it. It may have done more harm than good because more and more of our supply of grain sales are going to the Far East and they say, what the heck, why give it to Russia if you're not giving it to a good customer like me. The only thing that I can see that it may serve as a pilot program to show that it can increase farm exports. What do you think of marketing loans then to try to improve exports?

Mr. HALOW. The USDA seems to think they will be too expensive. I wonder who they could consider or compare with a $30, $40, or $50 million bill to help finance agriculture. It would be the quickest way. One way they help the farmer, they give it to the farmer, and yet the stocks are still here. The other way, they remove the stocks and the farmer would be better off and the farmer would get his income through the price of the grain rather than through a check from the Government.

Senator ABDNOR. I included marketing loans in the most recent crop bill that I introduced because it has to go together that way. I'm getting off the grain standards. You really don't think, while we're talking about these factors as far as selling grain, you personally don't feel that this quality issue is quite the issue that some people think.

Mr. HALOW. I think the quality issue, at the present time it is a problem, but that's been because it's been discussed so much. If people would stop talking about it, the issue would die. I think it's an issue of a problem in the United States much more so than it is abroad.

Senator ABDNOR. One last question, because you're in the business, all of your major grain exporting companies, multinational corporations, that is, they provide the same service to our competitors. In your judgment, is this an advantage or disadvantage to the American farmer?

Mr. HALOW. The grain exporting firms are both, of course, international corporations and also cooperatives, farm cooperatives. Some of them are based in the United States. Some of the grain exporters are stationed in the United States and don't ever do any business anywhere else, so it's quite difficult to say they would provide the same service to U.S. competitors. I think if the U.S. farmer—well, actually first of all, anybody who exports immediately becomes an exporter and immediately becomes suspect. So that I think no matter who is exporting, it's a benefit of the farmer.

Senator ABDNOR. Very good. You have a plane to catch. We thank you very much for your coming all the way out here. You're an excellent witness and we appreciate it. The machine went off right at the right time.

[Brief pause.]

Senator ABDNOR. Now, we won't be under the gun with our next two witnesses. Merlyn, go right ahead. You're being very kind, Mr. Hill.

STATEMENT OF MERLYN GROOT, FARMER, MANSON, IA

Mr. GROOT. Thank you. My name is Merlyn Groot and I operate a 550 acre grain and livestock farm near Manson, IA. I appreciate the opportunity to comment on the subject to export grain quality.

My interest in grain quality over the last decade has been based partly upon a personal conviction that serving a market with quality products is ultimately in the best interest of both buyers and sellers. My first involvement in grain quality began in the mid-1970's while serving as president of the Iowa Soybean Association. Discussions between farm groups and representatives of grain firms and the Standardization Branch of the USDA were held regarding possible changes in grain standards.

During 1978–79, I served on the USDA Grain Inspection Advisory Committee which had as one of its responsibilities a review of the U.S. grain standards. In 1979, while serving as the American Soybean Association president, I participated in the NSPA/GAFTA discussions, which is the Processors and Grain and Feed Trade Association of Europe, which developed two new quality export contracts for North American soybean meal in international trade. During the past months, I represented the Iowa Farm Bureau in the NAEGA task force on grain quality because of the Grain Quality Conference scheduled September 4 and 5 in Ames, IA. While I have been involved with farm organizations, my statement is entirely my own view based on observations and past experience.

And in my comments I would like to address the question of grain quality in a broad interpretation, beyond the grain standards specifically, to include areas that affect the condition and quality of grain.

While many people may think of grain quality in terms of loading at export ports, the condition of grain quality is affected by each step of the market from field to foreign destination, and there are responsibilities involved in each step.

(*a*) The conditions caused by weather vary each year; damage from hurricanes, frost and hail are samples of conditions beyond human control.

(*b*) Grain quality is affected also by the manner of harvest and storage both on farms and in commercial warehouses. Changes in methods of harvest and storage and length of time of storage have played a significant role, particularly in corn. It appears to me that long-term storage of grain under Federal farm programs requires much more management and different factors than the short-term storage which occurred during the 1970's when changes in methods of harvesting were taking place at the same time. The very large amounts of grain now going into long-term Commodity Credit Corporation storage justifies concerns for maintaining the condition of the grain and the level of quality when it is removed to enter the market channels.

(*c*) Various types of transportation and the number of elevations of grain affects its ultimate quality. Recent studies have been made on this subject and would be of interest to this subcommittee. I think Mr. Hill is probably going to spend much of his testimony on that very subject and I'm very pleased that he's here.

(*d*) The role of the export elevator receives the most attention and publicity regarding export grain quality. It is not my intention to diminish the opportunities and responsibilities involved there nor do I intend to make it a scapegoat for all problems. I believe the recommendations of the NAEGA task force are a step forward and should be supported. State of the art technology and sophisticated equipment existing in new and remodeled export elevators enables those facilities to be very accurate in loading out shipments of grain. My understanding is that grain received at an export elevator is graded, screened to uniform level FM and placed in storage. When a cargo is loaded out for shipment, grain is drawn from one or more bins and taken to shipping bins to await a Federal Grain Inspection Service grade. If it is within the specifications of the cargo contract it is loaded onto the ship, and if not, it is returned to the storage bin area. Therefore, I can only assume that the buyer should expect to receive what is specified in the contract.

(*e*) Overseas buyers need to recognize the technology that exists and adjust contract specifications to meet their needs. To expect that grain shipments will significantly exceed contract terms may no longer be realistic and will likely lead to dissatisfaction.

This briefly expresses some of my impressions that I've had. I would like to conclude with the following points:

(1) Needed changes should be done in a manner of prudent business judgment because ultimately everyone from farmer to foreign buyer will have to live with them.

(2) In most cases, changes by administrative action and trade practice will be preferable to legislated mandates.

(3) The proposed study of the "cu-sum" loading plan for ships needs to be done to determine if contract specifications can be exceeded and if so, whether tolerances need to be reduced.

(4) While outlawing all blending of grain may be impractical, I believe discussions need to take place whether sample grade grain, which does not meet even the minimum requirements for a numerical grade, can any longer be justified to be mixed with other grain if it materially affects the quality of the final product.

(5) With NIR testing of grain being recommended as an information option available to export contracts, we need to begin now to prepare ourselves for this type of technology if its use becomes widespread. That technology has the potential to affect each aspect of grain production and marketing beginning with plant genetics.

(6) The procedure of responding to quality complaints of oversea customers needs to be reviewed. Responding in the most timely manner possible should serve the interest of everyone involved.

That concludes my statement. I thank you again and I will attempt to answer any questions.

Senator ABDNOR. Thank you, Mr. Groot. We're the ones to thank you for coming over from Iowa to give us the benefit of your years of work in this area. When you were with the USDA Grain Inspection Advisory Committee, is that Dr. Gillis' group?

Mr. GROOT. That specific group was, I think, a temporary committee. That was mandated in the legislation that created the FGIS originally. And part of that act specified that an advisory committee was to be assembled from various parts of agriculture to aid in the transition from the private to the Federal inspection agency. One of those responsibilities also was in the act, it did mandate a review of the U.S. grain standards along with that. So the two primary responsibilities in that group was to smooth the transition from private to Federal inspection and to review the standards themselves.

Senator ABDNOR. Here in South Dakota we've had a young man on that commission for the last 6 years. I guess that's the length of one term?

Mr. GROOT. Yes. It is on a regular rotating basis now, I understand. I'm no longer—I completed my term in the first 2 years and then it was reestablished.

Senator ABDNOR. Did you feel you accomplished something in that advisory capacity, did any one pay any attention to you?

Mr. GROOT. As far as the transition, we were able to, on some occasions, smooth the transition, of the inspection itself, particularly for those who were in—were in the specialty type exporting, particularly the containerized, which we had some problems in the inspection, getting it available.

In respect to the grain standard review, we spent some time, and what we accomplished at that point basically was simply an airing of views. We did have some proposals discussed. There were some initial proposals that went as far as being published in the Federal Register, but at that point it was new enough and there was—there was a lack of understanding enough at that point that that is about as far as it went. What seemed to happen is that there began to be

an impression out in the country among farmers that this somehow was going to create a second discount or additional price discount on top of the one existing at that time, which was incorrect. The proposal was to review and maybe change and update, you know, the standards and how it reflected in the market channel. That was not the perception that was received out in the country, and actually it fell apart, I guess, frankly, at the farmer level because of the misconceptions.

That's why I think your hearing here and some of those like it can assist in this in that the farmers are now, I think, able to more understand that they are also going to have to be affected by changes that are made, and we need to do that on a basis by which everybody can live with. That was basically my reason for my first concluding point, that we do need to make these changes in view of prudent business judgment because they will be under considerable scrutiny by everyone and they do need to stand up on their merits, not just with the grain trade, but by everybody, because we're all going to have to live with them.

Senator ABDNOR. Correct me if I'm wrong, but it seems to me that since I offered this amendment into the farm law that there has actually been some changes made, has there, I think through a voluntary basis, but maybe through a pressure basis incorrectly, because this thing is in the making?

Mr. GROOT. You know, we could use one specific illustration as a result of this and that is that was another advantage of the NAEGA task force because it was not just an industry group, it was broad based, I think most—many farm organization commodity groups. I sat in as a representative from the Iowa Farm Bureau in the soybean area, because that's been my background, and one of the recommendations that task force came out with specifically that has been adopted as an administrative action by the FGIS is the review of the interpretive line slides on soybeans, and that is to begin, I think, September 1.

There is some benefit to ongoing discussion and I think there is more—a better understanding all across the board that we're all going to be affected and we all need to take a look. So there are some of these things that are happening. There are some in wheat. I'm less familiar with wheat. There also are some—things in corn in the broken kernel and foreign material area which are recommendations coming out of that task force also. So yes, there is some action.

Senator ABDNOR. To your knowledge, these exporters do not have these other ingredients, the cracked wheat, the weed seed or—you hear all kinds of charges.

Mr. GROOT. The horror stories, I would have no way of documentation. From my experience, I have been on ships that were being loaded. I have also been through three export elevators. And this is basically my point that I've indicated, my understanding from touring the export elevators is that when they receive grain it is graded and some of it, at least in the one case of the export elevator, I was told they do screen it and have a basic level of foreign material. They tried to screen it down to 1 percent, I think it was on beans, I believe, at that point in that particular instance, as they receive it and it goes into storage.

Now, some bins probably have a higher level or they have different grades of grain as they store it. And as it is moved out of storage in the facility onto a ship, then grain is blended with various factors according to the specifications that are written in the contract. And so I guess you can argue both sides of that question that, yes there are various levels of grain that contain FM that would be blended to meet the specification. The horror stories of rocks and this type of thing, I've heard them like others of you have. I have no documentation as to their validity.

Senator ABDNOR. Let me ask you another question. You said one of the biggest problems we have is that grain is held for a long period of time. Assuming, I guess, in time it loses quality, particularly if it isn't stored just properly in every way for maybe 3 years before the farmer delivers it. Do you think a marketing loan—I've been quite sold on that over the last year—would help in this situation?

Mr. GROOT. The marketing loan?

Senator ABDNOR. Yes.

Mr. GROOT. I would tend—my personal belief is that I think the advantages of that outweigh the disadvantages. Now, obviously, there is some disadvantage to it. It does have a larger up-front cost, but it does move grain into market channels and that is probably one of its bigger advantages, that it does keep grain moving.

I believe and I'm not sure if it's called a marketing loan, but if I recall, I think rice and is it cotton that has some option like that available, or maybe it is called the marketing loan. And the information that I saw on this is that rice has enjoyed a very active market, whether—how much it enhanced their price or not, I do not know. But the program that I saw on this aspect of the rice program was that the operations were running very high. I think it was something like 90 to 100 percent. They were utilizing facilities, so the product was moving. And so it would seem like that would be one of the big advantages of a marketing option, that it would leave some discretion to the producers and would probably save some of the deterioration in storage, particularly on corn and keep the thing operating.

Senator ABDNOR. Do you think that if you had marketing loans in place that these other countries of the world would see we're serious enough that maybe the whole picture on grain exports might change? They know we're on that track. You can't tell me all these countries are making money cutting the price of grain like they are.

Mr. GROOT. I guess the proof would be in the pudding. We'd find out. My guess is that we—we probably would. I think one of my concerns is that if we do go the marketing loan, it needs to be fairly consistent across the board to all markets. And also we need to somehow have a very clear understanding in using that as a policy for our country throughout the entire administration, because if I understand the information that I've read, correctly, is that two countries, for example, Argentina and Brazil which have very large outstanding international debt obligations, some of that to the U.S. banks, have pointed reference to their ability or maybe possible inability to repay those loans if the U.S. expands its international market in competition with them.

And then I hear these stories of the State Department saying, well, we cannot allow our administration to expand export programs beyond a certain extent if it takes away market share from countries like Argentina and Brazil, because then it will cut into their ability to repay their bank loans to U.S. banks and then that jeopardizes the banking system of the United States. So I think if we go that route, we would need to have a very clear understanding that this is a national trade policy that everybody abides by.

Senator ABDNOR. We could almost add some of the agricultural program costs to foreign aid. We could make that figure a lot less if we quit worrying about other countries and what might happen with their economic conditions.

Mr. GROOT. The marketing loan does have a big up-front cost, but as you mention, you save a lot of that back in some of the indirect—indirect related costs that keep showing up at other steps.

Senator ABDNOR. Two last questions. Back to grain quality. Do you know of any great amounts of sales that have been lost because of the quality of our grain, lost to other countries?

Mr. GROOT. That would be difficult to document. One that I think we could specifically question as a potential one was the soybean shipment to the People's Republic of China which they complained very bitterly about, apparently, did have some quality problems in it. And certainly it did not help any. Some other instances may not have been the total cause of loss of exports, whether they have been the sole cause—I tend to think that if the damage was substantial above the contract specifications, it certainly wouldn't help us any.

Senator ABDNOR. I might ask the question on the multinational corporations. Do you think they provide the same service to all competitors and do you think this is an advantage or disadvantage for the American farmer?

Mr. GROOT. I think there are both. I think the disadvantage may be from the standpoint that it may be perceived—and I do not know if this is fact or not—it may be perceived by some people and questioned about the loyalty to serving U.S agriculture if they are serving other countries on an equal basis. You know, that, I think, is a question that some people raise.

The advantage may be, and that being from the standpoint of having several sources, they do have the advantage of serving a very large international market on a constant immediate basis in large volume. That indirectly, I think, could be used as an advantage to U.S. agriculture, because we have our potential here to serve a very large portion of the international market. And from that standpoint, I would say it could be an advantage to agriculture because they do have the resources, they do have the facilities.

In a comparison, one of the things that I regret seeing is that we have lost some of the smaller export firms that are serving specifically U.S. agriculture. I'm thinking of some of the cooperative type firms that did attempt to move into the export market in the 1970's. Some of those we have lost. And if we lose those, certainly, that is not helping agriculture if they only serve the U.S. market.

So I guess it can raise the question, Can a firm really survive if they don't have a broad base of resources to compete in the international trade? I guess it's a question I raise rather than a com-

ment. But I think as far as the international firms, at the present time, I woud say the advantages may outweigh the disadvantages.

Senator ABDNOR. I appreciate that. I couldn't help but think of one more question. You're a farmer. I'm glad I got you here. You're in the export business. Do you think that America can afford to let this export market get away from us, I mean, for the sake of the farmer now?

Mr. GROOT. I think when we look at the U.S. economy and the role that exports play and we look at the time period of the 1970's, and maybe we can't return to those types of days, but whether we do or whether we don't doesn't excuse making decisions of what needs to be in the business interests. This country and this economy needs the export business in the balance of trade. That may be separate from the farm economy itself. That is one reason we need an export business.

If we look at it from a domestic side, the numbers that I understand is that in our economy there are about 20 million people involved in all phases of agricultural production from farmers, truckers, grain elevators, railroads, barges, exporters, chemicals, seed and fertilizer, and so forth. If we shut that down and serve only a domestic market, then in terms of wheat we're looking at losing possibily 60 percent of our production capacity; in corn, 25 to 30 percent; and in soybeans, roughly 50 percent more or less.

In terms—in terms of an overall figure, I've heard that this would involve shutting down approximately 20 percent of our ag economy if we write off the export market. Well, if we take 20 percent of 20 million jobs, that means we potentially think in terms of adding 4 million people to the unemployment roles. I don't think we can afford that. We need—agriculture needs those people employed as consumers of meat, milk, and eggs that we produce.

And so my position is that we need the export market and we need to do the best job we can to serve and expand that market to the best of our ability.

Senator ABDNOR. Thank you very kindly, Mr. Groot, for coming all the way from Iowa and giving us the benefit of your expertise. I kept you here quite awhile, and poor Mr. Hill, the one we're waiting to hear from, too, has had to sit and wait, but it's now your time, Mr. Hill. You have the slides. Very good.

STATEMENT OF LOWELL D. HILL, PROFESSOR OF AGRICULTURAL ECONOMICS, UNIVERSITY OF ILLINOIS, URBANA-CHAMPAIGN

Mr. HILL. My name is Lowell Hill. I'm professor of agricultural economics at the University of Illinois, specializing in grain marketing and since 1969 have been conducting research and educational programs on this issue of grain quality. Much of the motivation for the grain quality workshop report which you've all heard about and in fact the motivation for these congressional hearings has been the complaints—the complaints and publicity about complaints of foreign buyers. Now, not every complaint can be taken at face value nor can we change our standards every time a buyer requests us to do so. However, for too long, the knee-jerk reaction to

foreign complaints has been one of four, and we've heard, I think, every one of those here today.

One, they get what they pay for. Two, if you aren't satisfied, find another shipper. Three, high prices and unfavorable exchange rates encourage foreign buyers to complain. And four, it's all due to the weather and it would just disappear if we quit talking about it.

The responses of this type have done much to erode the confidence in U.S. grain quality and they generate the impression that the U.S. Government and the U.S. grain industry just simply does not care about our customers or their problems. We must differentiate between bargaining pressures and legitimate quality concerns.

Now, buyer dissatisfaction is not the only cause of lost export markets, but we cannot remain competitive in our world grain markets with an inferior product and unhappy customers. Several shipments of corn exports from the United States were monitored by the University of Illinois researchers from their origin to their destination. The factor of broken corn and foreign material increased at each handling from the farm to the export house. The increase after the corn left the export elevator was even more dramatic. The condition of this corn in the destination barges was consistently below quality at the time of loading. None of this quality loss can be attributed to the illegal or unethical actions of our exporters.

Senator ABDNOR. Is that typical?

Mr. HILL. That was the average for the whole vessel.

Senator ABDNOR. Do you call that exceptionally bad or would you say average?

Mr. HILL. No, that's average. We repeated this five, six times now in the last 10 years and we have received the same results every time. The repeated handling just simply tears this corn apart, not because it was blended that way to start with. It met the specifications at loading. It's what happens to it afterward.

One shipment of corn from New Orleans to Japan was monitored with temperature sensors in one hold. Under my personal supervision the vessel was loaded with corn that met the contract specifications and it looked pretty good as you see it being loaded in New Orleans there. The results clearly show that foreign complaints do have a factual basis. They're not just a function of the weather or the price.

This indicates that the temperature—and the blue line shows the outside air temperature. The red line and the black line going up show the increased temperature in the corn itself. Through the Panama Canal, air temperature rose and the corn temperature followed. From that point on, the air temperature dropped, but the corn was now heating on its own and the temperature skyrocketed. If we convert that 45° C, we're talking about 117° F. It was almost too hot to put your hand on [indicating].

Let's look at that vessel as it was being unloaded. Heating and mold were clearly present. You can see not only the foreign materials, but the molds and the insect activity that's been going on [indicating].

Senator ABDNOR. How many days was that?

Mr. HILL. Four weeks, which, again, is normal time from New Orleans to Japan. The breakage increased from 3.9 percent on the export certificate to 7.6 percent in the barge at Japan. Breakage, as you see in the ship, segregation during loading and unloading, mold and heating; these are the major complaints on corn quality [indicating].

I maintain that no reasonable person could look at the condition of this corn in the foreign buyer's plant and continue to insist that complaints by foreign buyers about low quality are caused by unfavorable exchange rates. That corn would have been just as moldy at $1 a bushel as it was at $3 a bushel. I object to people continuing to say there are no quality problems. This doesn't have anything to do with whose fault it is. I want to emphasize that. We're not blaming anyone, or right now I am not suggesting a solution. But you must accept that there is a problem.

FGIS has reported that the only one or two of the complaints by foreign buyers in the 1985–86 year were valid. This statement without some explanation creates a false sense of euphoria about quality. Valid in these reports means legal claim. Since nearly all U.S. grain is sold on origin grade, certificate final, the only "valid" complaint—valid in quotes—the only valid complaint is one where it can be proven that the origin grade was incorrect. That's very difficult indeed once the grain has been unloaded and subdivided between many buyers and several barges, separated from the origin inspection by thousands of miles and several transactions before the complaint can be registered. It's not surprising that there are not many valid complaints. Twenty percent BCFM, hot and moldy corn, 15 percent damage in beans at destination, these aren't "valid" in the FGIS use of that word.

However, real problems continue to damage our competitive position with our customers. We must identify these problems and work with buyers, shippers, and regulatory agencies to find economically viable solutions whether or not a court of law calls the complaints valid. So long as we deny that there are any quality problems we cannot expect to regain the goodwill or the confidence or the markets that we have lost.

We've also heard, well, this only happens once in a awhile and due to the weather and it's really just some recent publicity that caused all these troubles. Let's make a quick review of history. It doesn't take very long to see that the complaints in 1986 are not all that different from 1976. In fact, I went back a little further in congressional hearings and found this quote: "I'm informed that the European miller has ceased to buy American grain for his mill and the farmer for his stock. Grain in South America is received in good condition, that from the United States alone is bad." Sounds like a pretty current accusation, but if you look at that it's the hearings in 1908.

Well, the second complaint comes from the Chicago Board of Trade. "We have no doubt that some parties are in the habit of mixing screenings or damp and moldy wheat with that of sound and good quality, thereby injuring the standard of our grain abroad and consequently at home also." We just heard that we've been delivering good quality wheat all the time and it's only been the last few years that the problem has arisen. Well, the quote was not

1900, but 1859. These complaints have repeated themselves year after year since back in 1800. It's not just a new phenomenon.

My final quote criticizes the practice of blending screenings. "When will the month be over that we may market wheat, skipping the pressure, boosting the price and selling even the sweepings with the wheat." The date on that one is 1750 B.C. from the profit Amos, so if you want to know how far back it goes.

Many of the research reports demonstrate the physical and biological causes of quality deterioration. We know the causes and we know the cures. What we look at are economic incentives to encourage any improvement. Our grades and standards could provide the incentives for improving quality, but current grades often encourage a reduction in quality starting at the farm, penalizing those producers or elevator managers who deliver better than average quality.

The grain quality problem is not the fault of grain exporters and elevators pursuing illegal, immoral or even unethical practices. The problem is the grading system that allows—no, it actually rewards—illogical practices at lower quality. And the problem starts at the producer with economic incentives to do uneconomic things. Let me give you an illustration.

Before I do that, I think we have to look again at what is the purpose of grades and standards. And our task force report came up with four of them. I'm going to go very quickly on the assumption that you've already seen these. First, to facilitate merchandising. That can be handled very easily by any arbitrary numbers or factors.

Storability and storage life. The current grades do not identify storage life. Corn with only a few weeks of storage life remaining may well grade No. 1 and No. 2, but spoil within a few days after we put it on the vessel.

Current standards generally fail to provide information on the quantity and quality of procedures that can be obtained from the grades. Current grade factors do not measure oil or protein in soybeans. They don't measure starch or yield of grits or even the pounds of meat that can be obtained from a bushel of corn or soybeans. The value of a bushel of soybeans is largely determined by the oil and the protein it contains; yet, current grades do not measure either proper.

Current standards are sending the wrong signals to producers and grain handlers. They discourage selection of higher valued varities. They encourage higher levels of foreign materials. They encourage farmers and grain handlers to incorporate damage and moldy grain and they encourage the use of drying and marketing practices that we know are lower quality.

Let me provide an example to illustrate why I believe this criticism of the grades is justified. Let's pretend that a farmer is drilling 200 bushels of corn—this has to be Illinois—on an acre of land and is ready to harvest and deliver it to the elevator. He has two alternatives. Alternative one, he can set his combine to remove all the cobs and weed seeds and foreign material and deliver 200 bushels of clean corn. If the price were $2 a bushel—don't we wish it were—he would be paid $400.

But he has another alternative. He could also set the combine to deliver 3 percent foreign material, weed seeds, corncobs. The elevator will now pay him for 206 bushels, 200 bushels of corn and 6 bushels of foreign material. Since the standards allow 3 percent foreign material and the price per bushel remains the same at $2, the farmer receives a check for $412.

The first alternative of delivering corn would cost the farmer $12 per acre. Stated another way, the farmer can receive a premium of $12 per acre for delivering dirty corn. The system rewards farmers who do a poor job of harvesting and cleaning and penalizes those who use extra time, effort, and management to do top quality corn. We know how to deliver clean corn, but at present have failed to design a system to encourage any improvements.

The same incentive exists for moisture, for damaged kernels, for oil content and other factors. It encourages blending damaged soybeans with good beans at country elevators, subterminals, and the export house. We have designed a system to reward below average farmers and penalize better than average farmers. Failure to identify important quality factors such as oil and protein in soybeans creates the same incentives for lowering the quality at the farm, at the country elevators and export houses. Paying on average quality is another way for making above average farmers subsidize below average farmers.

I find it interesting that the early founders of uniform grades recognized the importance of these incentives to improve quality. Mr. Duvel, a USDA researcher, stated the issue even more dramatically in the congressional hearings on January 21, 1916, quote:

> That is because of the general system of grading which they have. They buy simply wheat. If you sell a good quality, you are selling yours at a discount of one or two cents to enable the elevator manager to pay the same price for your neighbor's poor wheat. The time is not far distant when good farmers will refuse to accept such treatment.

That was given before the House Ag Committee on January 21, 1916.

Unfortunately, good farmers are still accepting that bad treatment. So I will repeat the prediction made by Duvel, 70 years ago. We will not see this problem solved so long as good farmers—until good farmers refuse to accept such treatment.

If we examine the criterion of economic incentives, some of the needed changes in grades become obvious. I cannot predict all the economic consequences of changes in standards, but I can simply predict that there will be no change or no improvement until the economic incentives are changed in our current system of grades. We are not saying we should change grades because of foreign buyer complaints. We are saying we should change grades because they are creating improper incentives and are just not making good sense in trying to meet the needs of our customers domestically and abroad.

Expectations to improve quality appeals to pride in farmers producing quality. Threats of lost markets and even legislative prohibitions are going to have a very limited effect on farmers and merchandisers at home and abroad who respond to economic incentives, and therein lies our real opportunity for progress.

I'm going to suggest only three changes, and then I think you can see how the principles should be applied to cover a lot more:

(1) The Food and Drug Administration has ruled that increasing the moisture content of grain by spraying, aeration, or blending is adulteration; yet, farmers and elevators continue the practice.

The simple solution would be to remove the incentive. Using moisture to adjust the weight of all grain to an equivalent bushel at a base moisture would remove the profit from blending 12 and 20 percent moisture corn together or of actually spraying water to rewet. Moisture content would be selected on the basis of good management, not on an arbitrary number selected for No. 2 corn in 1914.

(2) If you object to the idea of blending moldy, damaged, low quality beans into good No. 1 beans, incentive holds a key. Blending is not done for fun. It's done for profit. Remove the profit opportunity and the practice will stop. Set damage limits at zero for No. 1 and start discounts at zero and export elevators and country elevators can no longer make money by blending rotten beans into good beans.

The current standards for No. 2 beans pretends that we can mix moldy beans with good beans at the rate of 3 percent, and suddenly the moldy beans are transferred into good beans worth the full price. That's what we sell them for. This game fools nobody. If those 3 percent moldy beans were worthless by themselves, the processors are going to lower the average price to all farmers and we're back to the problem with the average price concept again.

(3) We can apply that same example that I just gave on moldy beans to foreign material except that our grades that are defined keep the buyer from finding out if foreign material is really foreign material or merely broken kernels. It is inconceivable to me that we have accepted a system that identifies and weighs the coarse foreign material in the sample as a separate factor to broken grain and then goes to all the effort of adding the two together before we will record it on the inspection certificate. The separation of coarse foreign material from material passing through the grading sieve would provide important information to buyers. It would also provide the tools that we need to—from Champaign County to Japan, paying the transportation costs and then burning the excess foreign material at the Japanese plant. Identify the two foreign materials, set the grade limit near zero and we create an incentive to deliver a clean grade without legislative prohibition.

I believe, if you feel we have the time, I'd like to just discuss quickly a point about comparative standards with other countries.

Senator ABDNOR. Fine, but before you do. Do you have those quotes in your prepared statement?

Mr. HILL. Yes. Those quotes are there and there are in fact dozens more. I just tried to pick three points. Year after year, it's there in the record. Congressional hearings start dating back to the 1800's that show this again and again and again.

Senator ABDNOR. How long have you been on this subject?

Mr. HILL. I've been working with this since 1969 when we had farmers come to us and say, why are we being discounted on testability. We went into the history to find out what was test weight

trying to measure and found it was put into the corn standards in 1916 arbitrarily, let's try it for grades Nos. 1 and 2.

In 1918 they held hearings on that question, shall we add test weight for corn to grades 3, 4, and 5 or take it out of grades 1 and 2. The hearings document that about half the people said it doesn't mean anything in corn, it doesn't measure anything of value. Let's take it out. The other half of the people said, well, it hasn't done any harm and we got it in wheat, let's put it in. In their wisdom USDA put it in in other grades.

We continue to discount the farmers and we offer the foreign buyer the opportunity to discount us on the test weight factor even though neither Argentina, South Africa, Brazil, nor any other exporting country uses test weight as a grade factor.

Senator ABDNOR. Do other countries require higher standards than we do other than Canada?

Mr. HILL. No, they require different standards. And we look at Argentina, South Africa, and Thailand, those differences include the incentive. They do not have perfect standards, but neither do we and what we need to do is back up a moment and say, what would we like these standards to do and how can we best define them to meet that.

Senator ABDNOR. There are other countries shipping the same kind of grain we are.

Mr. HILL. An important question has been raised in the 1985 Food Security Act and a very important amendment as to what is the relative quality of grain from Argentina, South Africa, and other countries. We've heard repeatedly the statement that Argentine corn is harvested by hand. It's a flint variety that doesn't break. It is never artificially dried; therefore, we can't compete. So this leads us to the conclusion that, forget it, we can't do anything about it.

Those statements are in fact false. We did a study in Argentina identifying at each point in the market channel what was really happening, stayed there during their entire harvest period, to find out what they were doing and how they were doing it. The flint corn is beautiful on the ear and the flint variety does look different than ours. But they are growing some flint, some semi-dent, and some regular dent. Flint in the majority, but other types are grown as well. So that belies the first statement that they grow only flint corn [indicating].

Here is their hand harvesting operation. Every farm we were on, and we traveled the entire corn belt in Argentina, had anywhere from 1 to 28 combines running at the same time on their farm. They even had their trucks lined up at the elevator just like Illinois, so I guess it's the same kind of problem trying to unload. Almost none of the grain is dried and stored at the farm. It's delivered to the country elevator just as ours is in trucks. They have the same kind of scales we have at the country elevators, the same kind of moisture meters even being used to measure it. There was one difference. In most States the State government has responsibility for checking moisture meters to be sure that they are operated properly. In Argentina they went to a higher authority [indicating].

Every elevator had a drier, the same kind as ours, high temperature operation. And the stress cracks in the flint varieties of corn were just as frequent as they were in dent varieties. Any time it goes through a high temperature drier, we have anywhere from 80 to 90 percent of the kernels with stress cracks in them. The loading at the export house was just as bad as ours, not worrying about how much breakage you caused along the way.

And there is a sample of that Argentine corn that won't break. The average BCFM in that vessel—we sampled the entire vessel—as 5.6 percent BCFM. The difference that we see in all of these is not their technology. The difference is they have only three factors in their standards, broken corn, foreign material, and damaged, moldy kernels. BC and FM are separate. We're still trying to debate that 25 years after Argentina has already done it [indicating].

Plus, they pay 1 percent premium for No. 1 or No. 2. All the farmer has to do to get that premium is clean out the weed seeds. And in the combines we saw, many of them had cleaners and sackers right on the combine to sack up the weed seeds and keep it off. Every elevator had cleaners before the drier and after the drier to remove that in order to get the 1 percent premium. They delivered corn to the elevator that did not have the large proportion of dust in it that we have in U.S. corn because they never blended the broken kernels back in again to be ground up at the next step.

Senator ABDNOR. What did they do with them?

Mr. HILL. Kept them back at the local elevators and turned them back to farmers to feed. They had a market gain much like ours. The price of screenings in the United States is about 75 percent the price of corn. They quoted me prices in Argentina that showed me 75 percent the price of corn. So the screenings are there at the same price. The difference was the automatic premium that was built into their system.

They have the moisture content not in the grade factor. As you know, we took it out of ours finally last year. The moisture was not a grade determining factor. It sat at 14.45 as maximum allowable for export shipped. Consequently, every farmer dried down to a safe storage level, every elevator dried to a safe storage level. Ours at 15.5 must dry lower than that to be sure it doesn't spoil in the summertime. And then we have people starting to—it's legal. It's not an illegal activity. It's perfectly legal to blend 30 percent and 15 corn.

I doubt you need additional examples. By now, you can anticipate other illustrations. If you go back to the purposes of standards, we can find out what's wrong with our standards. What's wrong with them is not the foreign complaints. The problem is they are not the right standards in the first place. If we never heard of foreign complaints, the standards need to be changed. The ultimate test of any change in the standards is one question: Is the value of the information about quality greater than the cost of obtaining it? And we have failed to ask that in any of the cases where we are looking at grades and standards. So to answer that question we must include the cost of lost customers and the increased value of a reputation for good quality that will allow us to

compete with producers of grain and oilseeds in free and open markets.

And the question earlier, are there any examples of where we actually lost customers. I will give you one that comes very close to home. The Kellogg Co., a U.S.-owned firm, has refused to buy U.S. corn for over 10 years because the quality was so poor they couldn't use it. Then when they finally ran out of corn from South Africa, they came back to us and tried to do it by special contract.

Senator ABDNOR. Can't they order corn a certain way?

Mr. HILL. Yes, and this is one of the responses we always get. Here is the problem. A year before they wanted the corn delivered they had to make a contract with some 50 to 100 farmers to grow the variety they wanted. They had to hire people to supervise the farmers to be sure they handled it, harvested it, and stored it in the proper way. Then they had to keep the identity of that corn preserved all the way from that to the final destination. The cost was about, if it covered all the cost, about a dollar a bushel. We were subsidizing it to try to get them to try one shipment. The cost is prohibited.

They don't have to do that with any other country. They would not have to do it with us if we measured the right factor. They measured the factors that are important to them instead of the numerical grade we're now giving them, and we have an entirely different attitude. Kellogg went to Argentina and the response they got immediately was, where would you like it delivered and in what quantities of low-temperature, dried corn that would deliver high yield of grits.

They produced this same question to the U.S. exporters and said, if you want that contract with somebody, it's not our problem. The whole attitude is different. Do we serve our customers or do we say, here it is. If you want it, come and get it. If you don't like it, you solve the problem, we're not going to solve it.

The distribution of profits between farmers, the grain industry and foreign buyers is determined by competition in a free market environment. Changes in the standards is really not going to alter that distribution. We're not taking money away from the elevators and giving it to the farmers or vice versa. But improving our grading standards will increase marketing efficiency, will expand our market demand and will increase the profits for all segments of the industry.

I thank you for your attention. I've gone on too long. But as you've detected, I'm fairly enthusiastic and committed that we can serve the markets in a better way than we are now doing if we can stop pointing fingers of blame at each other and say, how can we jointly sit down together and solve a problem.

[The prepared statement of Mr. Hill follows:]

PREPARED STATEMENT OF LOWELL D. HILL

An Economic Evaluation of the Grain Quality Problem

Lowell D. Hill

Validity of Foreign Complaints

Recent publicity on the grain quality problem and the National Task Force organized by NAEGA, as well as these Congressional Hearings have focused on the foreign complaints of purchasers of U.S. grains and soybeans and the responsibility of U.S. exporters for these problems. Not every complaint of foreign buyers can be taken at face value nor can we change our standards every time a buyer requests us to do so. However, in todays buyers' market we cannot ignore the concerns of valued customers. The following responses to foreign complaints have not improved our image with overseas customers. Many industry and USDA representatives claim that:

1. The complaints are responses to unfavorable exchange rates and high prices for U.S. grain. There is no real quality problem.
2. Only one or two of the complaints registered in the past year have been proven valid.
3. The complainers are just bargaining to lower the price and buy No. 1 corn at No. 3 prices.
4. Foreign processors can buy any quality they want if they are willing to pay the price.

I would like to respond to these statements. Each contains an element of truth but taken literally, they are seriously misleading. We are not going to remain competitive in world markets if we continue to insist there are no problems.

1. Research by the University of Illinois to monitor quality losses has demonstrated repeatedly that there are real problems of

quality in the foreign markets, not just perceived ones. Several shipments of corn from U.S. ports were monitored from origin to destination. The factor of broken corn and foreign material (BCFM) increased at each handling from the farm to the export house. The exporter adjusted BCFM to the contract limit but the increase after the corn left the export elevator was dramatic. Condition of this corn in the destination barges was consistently below quality at the time of loading. Table 1 compares the BCFM shown on the export certificate with that found in the vessel and barges at destinations for four of these shipments. None of this quality loss can be attributed to illegal or unethical actions by our exporters.

Table 1. Changes in Broken Corn and Foreign Material in the Export Channel

	Average BCFM		
Destination	Origin Certificate	Ocean Vessel	Destination Barges
Rotterdam	3.7	5.6	8.0
Manchester	3.5	5.9	6.2
Mexico	2.4	4.1	4.8
Japan	3.4	5.0	7.7

One shipment of corn from New Orleans to Chiba, Japan, was monitored with temperature recorders in one hold. Under my personal supervision the vessel was loaded with corn that met the contract specifications on every factor -- actually better quality than the contract required on most factors. The results clearly show that foreign complaints have a factual basis. Temperature of the corn rose to 115° F. due to mold and bacterial action. Heating and mold were clearly present. Breakage increased from 3.4 to 7.7 percent. Breakage; segregation during loading and unloading; mold and heating; these are the major complaints on corn quality. No reasonable person could look at the condition of this corn in the foreign buyer's plant and continue to insist that complaints by foreign buyers about low quality are caused by unfavorable exchange rates. That vessel of corn would have been just as moldy at $1.00 per bushel as it was at $3.00 per bushel. I have seen no scientific evidence to prove that the number of foreign complaints rise and fall with exchange rates.

2. Let's examine the second response often given to minimize the importance of foreign complaints.

   FGIS has reported that only one or two of the complaints by foreign buyers in 1985-86 were valid. This statement without some explanation creates a false sense of euphoria about quality. "Valid" in these reports means "legal claim". Since nearly all U.S. grain is sold on origin grade, certificate final, the only "valid" complaint is one where it can be proven that the origin grade was incorrect -- very difficult indeed once the grain has been unloaded and subdivided among many buyers and separated from the origin inspection by thousands of miles and several

transactions before the complaint can be registered. Twenty percent BCFM, hot and moldy corn, 15 percent damage at destination are not considered "valid" complaints in the legal sense of that word. However, that does not mean that there are no problems. We must respect the concerns of our customers and work with buyers and shippers and regulatory agencies to find economically viable solutions whether or not a court of law calls the complaints "valid". So long as we deny that there are quality problems we cannot expect to find a solution or to regain the good will, confidence, or lost markets from our customers.

3. It is true that some buyers negotiate for discounts or lower prices or try to refuse to honor a contract by claiming poor quality. However, this does not explain many of the problems that have been documented for many years. The automatic response that all complaints are bargaining techniques is not a good psychology for maintaining customer satisfaction or competing successfully in a highly competitive world market. Mold, heating, breakage and segregation in the hold of a vessel are the result of physical relationships, not the result of unsatisfactory prices.

4. It is true that foreign buyers can readily specify any grade that they want and historically they have not been willing to pay premiums for No. 1 or No. 2 corn above No. 3. This is not surprising because grade is not the same as quality and frequently does not reflect value. We do not find domestic buyers willing to pay premiums for No. 1 corn in most cases either. The reason is because No. 1 corn will produce no more starch, corn flakes, or

even feed value than No. 2 or No. 3. The factors that determine our numerical grades were not developed for the purpose of reflecting value to the user.

Deficiencies in the Current Grades

It is important at this time to emphasize that foreign complaints are not a good basis for setting standards. We should also recognize that illegal blending by exporters is not the cause of the quality problems. Conversely prohibition of blending will not solve export quality problems or restore our market share. The problem is with the way we measure quality and the incentives created by the standards to lower quality throughout the market channel. The problem is not that exporters are abusing a good system but that exporters are properly using a system poorly designed to meet the needs of a sophisticated market. There are several basic problems with our current grades.

1. The lack of accuracy even to the point of deliberately misrepresenting what the value of the grain might be. There are many examples but the best illustration is the reporting of wheat dockage rounded down to the nearest half a percent. The proposal for change that is now in the Federal register indicates that even U.S. industry and FGIS have recognized the impropriety of this procedure. A second example of our lack of accuracy is that we measure coarse foreign material separately from the material going through a 12/64-inch sieve in the corn standards but rather than reporting that information we combine the two together as one factor so that the buyer is unable to determine if he has purchased weed seeds or broken corn.

2. Numerical grades do not reflect value to the user. I will provide only two of many possible examples. The test weight of soybeans has been demonstrated to bear almost no relationship to oil and protein content of the soybeans. Yet it is in the grades. Oil and protein content is essential information in determining value, yet this information is not in the grades. We omit information on the important factors but include information on one that is almost irrelevant.
3. Many of the factors and factor limits in the current standards are arbitrary and have been changed many times with no scientific justification for what the best value of that limit will be. For example, heat damage in corn differs by one tenth of one percent between No. 1 and No. 2. Statistically it is impossible to accurately differentiate between .1 percent and .2 percent heat damage given the sample size dictated by grading standards. Test weight in corn and soybeans also suggests some degree of arbitrariness in selecting the numbers. No. 1 corn must have a test weight of 56 lbs. per bushel. Since 56 pounds is also the legal weight of a bushel of corn this seems to be a logical choice. However, if we look at the soybean standards we find that they too have a 56 lb. test weight for No. 1 soybeans but the legal weight per bushel for soybeans is 60 lbs. The logic has suddenly disappeared.
4. The incentives provided by the standards are counterproductive in many cases. For example, by omitting oil content of soybeans we create an incentive to breed for high yields regardless of the effect upon oil content. If University researchers could design a

soybean variety with no oil but it would yield 100 bushels per acre, farmers would rush to buy the seed. They would receive the same price per bushel for these high yielding beans as their neighbors providing beans with 20 percent oil content, even though the difference in value would be very large. This would then create an incentive for all farmers to move to the low quality, high yielding soybean variety. While this example is exaggerated those incentives are in fact present and most plant breeders will admit that they are selecting for yield with no regard to quality of the product. Consider a second example of inappropriate incentives. Grades that allow 3 percent BCFM without a discount create an incentive for farmers to deliver corn with at least 3 percent BCFM. There is no incentive to remove this foreign material at any point in the market channel. Regulatory prohibitions and voluntary guidelines on blending will not be effective so long as the grades and discounts reward those who increase foreign material and damage levels and penalize those who deliver lower foreign material and damage.

Purposes of Grades and Standards

The National Task Force recognized the lack of incentives for improving quality and revised the purposes of grain grades to correct this deficiency.

1. Define uniform and accepted descriptive terms to facilitate trade.
2. Provide information to aid in determining grain storability.
3. Offer end users the best possible information from which to determine end-product yield and quality.
4. Create the tools for the market to establish quality improvement incentives.

Of the four objectives for grades, objectives 3 and 4 are clearly the most important, yet they are the objectives least served by our current standards.

Quality of Argentine Corn

Quality problems are not unique to the U.S. marketing system. Argentina has long been used as an example of good quality corn with the explanation that Argentina farmers harvest their grain by hand, use natural air for drying, and their flint variety is so hard it does not break during handling. Fortunately for the U.S. producers none of these statements are true. In the commercial Corn Belt nearly all corn is harvested by corn combine. Corn is harvested at moisture levels above the base, requiring high temperature dryers at every elevator we visited. Flint varieties are hard but so is glass. Both subjected to extremes in temperatures will develop internal stress cracks. We found that breakage, stress cracks, and BCFM in the loaded vessel were all comparable to the quality that we have found in U.S. dent varieties. The difference between Argentine corn and U.S. corn is that their standards provide an incentive for removing dirt and weed seeds at the farm, for removing broken corn in the market channel and for drying to safe storage levels without the incentives or opportunities for reblending.

Changes Needed in the Grades

Several changes are needed in our grades but in general these can be more efficiently handled through the regulatory process than through legislation. The Task Force report "Commitment to Quality" identifies several of these needed changes such as separating broken kernels from foreign material in all grains and measuring quality

characteristics that reflect intrinsic value. Some equipment already exists for the market to pay on this basis. We need research to develop more.

Suggestions for Legislative Action

It is also important to recognize those areas where Congressional action is needed. I will list only 3:

1. Establish the 4 purposes of standards recommended by the Task Force. Until FGIS establishes grades on economic criteria, little improvement can be made. Once FGIS is committed to those 4 purposes of standards legislative action to change grades will be unnecessary.
2. Don't legislate prohibitions on processes but establish criteria for product quality. Legislating the process requires enforcers to be present at all locations at all times. Establishing product quality requirements permits the market to handle all of the discipline required to generate better quality.
3. Enforce uniform measurement of all factors. This is especially true for moisture meters which currently differ widely in commercial use among states. Only the Motomco meter must be calibrated to a uniform national standard. All other brands are subject to state regulation which frequently leaves the calibration entirely in the hands of the manufacturer.

The Fallacy of Average Quality Pricing

My final point is to reemphasize the danger of paying average prices for average quality. Failure to differentiate between the good and the bad not only on current grade factors but on all factors that reflect value eliminates any incentive for improvement. Failure to

identify important quality factors such as oil and protein content of soybeans creates incentives for lowering the quality at the farm, at the country elevator, and at the export house. Paying on average quality is another way for making above average farmers subsidize below average farmers. I find it interesting that the early founders of uniform grades recognized the importance of this average quality fallacy.

> The Secretary of Agriculture in his annual report for 1913 explained the problem created by the lack of incentives. "The system [of paying average price for all qualities] has placed a premium on poor and careless farming at the expense of good farm methods and practices." [Who is Who in the Grain Trade, Vol. 3, No. 5, Jan. 5, 1914, p. 14]
>
> Mr. Duvel, a USDA researcher stated the issue even more dramatically in the Congressional Hearings on January 21, 1916. "That is because of the general system of grading which they have. They buy simply wheat. If you sell a good quality, you are selling yours at a discount of one or two cents to enable the elevator manager to pay the same price for your neighbor's poor wheat. The time is not far distant when good farmers will refuse to accept such treatment." [Page 427 Hearings before the Committee on Agriculture, House of Rep. Friday January 21, 1916. Washington, D.C.]

I will repeat the prediction made by Dr. Duvel 70 years ago. We will not see this problem solved until "good farmers refuse to accept such treatment."

Summary

I doubt that additional examples are necessary. By now you can anticipate other illustrations of the role of grades in creating incentives. Grades are not neutral in the pricing system. Marketing practices with their associated costs and profits have been developed in response to opportunities created by the standards. If all sectors of the industry can agree on the incentive or disincentive desired with respect to quality, I believe we can readily reach agreement on the changes in standards required to meet these goals. The ultimate test of any change in standards is the question: "Is the value of the information about quality greater than the cost of obtaining that information?" to answer that question we must include the cost of lost customers and the increased value of a reputation for good quality that will allow us to compete with producers of grain and oilseeds in free and open world markets.

The distribution of profits between farmers, the grain industry, and foreign buyers is determined by competition in a free market environment. Changing grades does not change the competitive balance. However, improving our grading standards will increase marketing efficiency, will expand our market demand and will increase the profits for all segments of the industry.

GRAIN QUALITY, GRADES AND STANDARDS

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2. Soybean Kernel Damage (illustrated brochure of damages to soybeans)

3. Corn Leaf Blight Information Series -- No. 6
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5. AE-4268 -- Changes in Test Weight of Corn During Drying
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28. AE-4454 -- Proceedings 1977 Corn Quality Conference. February 1978

29. Quality Attributes of Argentine Maize. M. R. Paulsen and L. D. Hill. Presented at 1984 Summer Meeting, ASAE, University of Tennessee, Knoxville, June 24-27, 1984

30. Damage During Handling of Shelled Corn and Soybeans. Glenn E. Hall. September 1983

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14. Breakage Susceptibility of Exported Corn At Origin and Destination.
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Senator ABDNOR. I apologize to all of you gentlemen for not having somebody here from the Office of Technology Assessment. I felt they should have been here and I thought they were coming. It was my fault. They did have a problem, but I would have helped them straighten that problem out, I'll tell you, if I would have known they were not going to come. I regret that. All this information has to be very worthy of consideration.

Mr. HILL. I'm working closely with them and they do have copies of all these publications. They are aware of the research. And I should add, it's not just my own research. There is a regional research team composed of 14 universities with many scientists that have been working. Unfortuantely, there are two of us that are economists. The Office of Technology Assessment is also working with that group to start with what they have and not go back and try to reinvent the wheel.

Senator ABDNOR. Are they doing the study themselves or are they bringing in people to do it?

Mr. HILL. I can't speak for them. I think in general they bring in outside experts because they do not have in-house people either with the time, the funds, or the expertise to do that job. I would assume that they will work with other people.

Senator ABDNOR. You are getting some input into it?

Mr. HILL. Yes, and of course Mike Phillips from OTA was invovled in this workshop on grain quality so he has been present. Do you have a copy of that?

Senator ABDNOR. He has submitted a statement.

Mr. HILL. Maybe I should leave you this copy, too, if you don't have what the so-called NAEGA committee produced.

Senator ABDNOR. Very good. Well, I thank you, Mr. Hill. Did you work with Dean Bentley?

Mr. HILL. Yes. Dean Bentley was very supportive in the early days back when it was even less popular than it is now, and I think Dean Bentley got a few calls suggesting that I could do my thing better if I got out of grain quality. Unfortuantely, Dean Bentley said that university professors do whatever they darn please and——

Senator ABDNOR. Dean Bentley was born and raised out here in western South Dakota and I see him in Washington once in awhile. Well, listen, we thank all of you people and I wish we even had more time. But I have good South Dakota input, maybe if you didn't have to rush, you'd like to hear comments on. I don't know if I'd like to be the one to follow up. Maybe the statements are altogether different, but it should be an interesting panel. If you don't have to leave, we urge you to stay, but I can well understand if you can't.

Mr. HILL. I will stay and if there are other questions from anybody along the way——

Senator ABDNOR. Fine. Our next group of witnesses are Mike Held, South Dakota Farm Bureau; Leland Swenson, South Dakota Farmers Union; and Vince Jensen, president of the Ipswich Farmers Elevator who is representing the South Dakota Elevator Association. So, gentlemen, I guess I would ask you to come over here if you will. You've been waiting a long time.

[Brief pause.]

Senator ABDNOR. We'll proceed. Mr. Held, go ahead.

STATEMENT OF MICHAEL HELD, ADMINISTRATIVE DIRECTOR, SOUTH DAKOTA FARM BUREAU

Mr. HELD. Thank you, Senator. I am Michael Held, administrative director of the South Dakota Farm Bureau. The South Dakota Farm Bureau Federation represents 6,800 member families and I can assure you that the Farm Bureau is vitally interested in efforts to upgrade the quality of grain marketed all the way from producers through the export channels. This topic has received considerable discussion and increased attention over the past number of years at meetings of our members at the county, State, and National levels.

There is concern amongst our membership that the Grain Standards Act as we've known it no longer is sufficient to provide a description of the grain quality that is useful to buyers of grain for food and feed uses, either domestically or abroad. Changes in the variety of characteristics and grain handling technology and many other things have led to complaints from foreign buyers about grain qualities and its end-use characteristics.

Farm Bureau members' concerns have been prompted by an awareness that at least part of the export market the United States has lost in recent years is due to our failure to provide a commodity as good or better than that offered by competing export countries.

I wish to emphasize that our primary focus in revising grain standards will be to more accurately reflect grain quality and to improve returns to producers of high quality grains. All changes must be practical and serve the best interest of U.S. grain producers. As was said here before very well, changes must be made in a businesslike manner. Any changes to the U.S. grain standards must be evaluated carefully so that the integrity of grain quality can be preserved and improved. At the same time, the expense associated with inspection and quality assurance changes must be held to acceptable levels.

Adoption of all the new technology may be impractical and a revision of grain standards that would prohibit some commonly practiced handling techniques could possibly reduce returns to producers——

Senator ABDNOR. Just a minute.

[Brief pause.]

Mr. HELD. Adoption of all the new technology may be impractical and a revision of grain standards that would prohibit some commonly practiced handling techniques could reduce returns to producers who deliver grain that is not of the very highest quality grade. Therefore, the standards revisions must reflect the need for grain handlers to utilize some blending practices while at the same time assuring consumers a desirable and useful product in the marketplace.

Senator Abdnor, the South Dakota Farm Bureau would like to commend you for your efforts in making a study of the grain standards and quality issue a part of the 1985 farm bill. Your recognition of the need to conduct this study and the followup with appro-

priate action is a tremendous service to grain producers and to all U.S. agriculture.

One concern Farm Bureau has with the language in the 1985 farm bill is the wording, to restrict blending to 1 percentage point difference in moisture content. We feel there needs to be a little more tolerance as it relates to blending of similar quality grains that differ only in moisture content. We would suggest that something in the area of 4 percent variance would be a more workable level.

There are many other issues that need to be addressed as they relate to dockage, broken corn, and foreign material, grain classes and the presence of infestation, just to name a few. I will not address these today in the essence of time, but with your permission we would like to submit for the record the statement that Dean Brown, director, Feed Grains, Soybean, and Wheat Department, AFBF, made to the Wheat, Soybeans, and Feed Grains Subcommittee and the Departmental Operations, Research, and Foreign Affairs Subcommittee hearing at the University of Illinois which was conducted last month in July. Mr. Brown is a member of the grain quality task force which issued the report "Commitment to Quality: A Consensus Report."

I would like to reemphasize the fact that resolving this very important issue is not easy. Farm Bureau's main focus will continue to be to analyze any proposed changes in grain quality standards from the perspective of their net results on grain producers as well as to reflect quality to the end user.

The survival of the grain export business is dependent upon volume, integrity of our grades, price, reliability of the supplier, and quality. The quality issue, while only a component of the export decline, must be addressed to minimize or eliminate those adverse occurrences which are within our control.

In closing, Farm Bureau commends you, Senator Abdnor, for your active role in focusing attention on the grain quality issue and seeking proper and reasonable solutions as timely as possible. We appreciate the opportunity to present our views.

[The statement referred to follows:]

STATEMENT OF THE AMERICAN FARM BUREAU FEDERATION BEFORE
THE WHEAT, SOYBEANS AND FEED GRAINS SUBCOMMITTEE AND THE
DEPARTMENTAL OPERATIONS, RESEARCH AND FOREIGN AFFAIRS SUBCOMMITTEE

REGARDING GRAIN QUALITY

Presented by
Dean A. Brown, Director.
AFBF Feed Grains, Soybean and
Wheat Department

University of Illinois
Urbana, Illinois
July 21, 1986

The American Farm Bureau Federation (AFBF), representing over 3 million member families in 49 states and Puerto Rico, is vitally interested in efforts to upgrade the quality of grain marketed by producers and exporters.

Voting delegates at AFBF's Annual Meeting adopted the following policy pertaining to grain standards and pricing:

> "We support strengthening and enforcing federal standards that will reflect the quality of grain sold in world trade. We propose that USDA....conduct a comprehensive study to identify the changes in grading procedures and standards needed to insure that class and grade will accurately indicate the appropriate end use for each lot of grain,...We strongly support development of new, more realistic grain standards to improve the present U.S. Grain Standards Act. Revised grain standards should indicate clearly and give assurance that we will provide clean, identity preserved grains for our customers at home and abroad....The objective of improving grain standards must be to enhance sales and improve returns to producers. New standards should be developed soon and should be strictly enforced. We believe the Farm Bureau, USDA and the grain trade should work cooperatively to improve grain standards which accurately

reflect the importance of test weight, protein content, insect infestation levels, moisture, dry matter basis and foreign material in determining quality, grading and pricing factors for soybeans, wheat and feed grains....The practice of adding foreign material, other grains, screenings....to a shipment of wheat (or other grains) to meet a certain grade should be prohibited."

Our policy for several years has been directed to encouraging changes in grade standards and marketing practices which would improve the quality and ultimately improve the marketability of our grains. Considering the world supply and demand situation and the intense export competition among grain and oilseed producing countries it is imperative that steps are taken to improve marketing conditions.

Farm Bureau's interest and concern for grain quality goes beyond the boundaries of our producer-members' farms, for many of our members are directly involved in the management of cooperative grain elevators as members of boards of directors. In addition, several state Farm Bureaus provide grain marketing services through affiliated companies organized as cooperatives or marketing corporations.

Grain quality has been a concern of producers for many years. However, only in the last year or two has it been possible to establish meaningful dialogue among the various groups within the grain industry. The current cooperative efforts have been prompted

by an awareness that at least a part of the export market the United States has lost in recent years is due to our failure to provide a commodity as good or better than that offered by competing export countries.

In September 1985, AFBF hosted a national meeting attended by representatives from all of the major grain commodity organizations, grain elevator operators, processors and millers, exporters, importers, USDA and state university grain marketing specialists. The purpose of the meeting was to discuss issues related to grain standards marketing practices and ways in which the quality of both domestic and export grain might be improved. We also explored the economic feasibility of making changes - both in terms of the cost of changes and the economic rewards. The participants arrived at two conclusions:

(1) that many of the problems delineated were complex in nature, requiring comprehensive review and study before satisfactory solutions can be developed; and,

(2) that those in attendance pledged to resolve their differences and work together for changes that would upgrade the quality of grain.

One of the results of the conference was the development of an Ad Hoc group consisting of representatives of virtually all aspects of the grain industry - with the exception of domestic processors. This group met for 6 monthly two-day sessions, beginning in January.

The result is a series of recommendations and proposals which we trust will lead to changes in grain grade standards, regulations, and industry practices. The report of this committee, "Commitment to Quality" has been distributed to members of both House and Senate Agriculture Committees in recent weeks.

The report addresses a wide range of issues relating to quality, from plant breeding where many of the quality factors are influenced by the manner in which plant characteristics are selected for breeding purposes, to the manner in which grain is handled by the exporter. Farm Bureau supports the intent of all the proposals and recommendations contained in the report. However, we are disappointed that definitive time tables for completing the research and study associated with resolving several issues are missing. For instances:

(1) efforts should be made by FGIS to implement the changes proposed for sorghum grade standards so that they will be effective with the 1987 crop (outlined on Page 7 of report);

(2) the representative sampling and barge loading plan, outlined on pages 9 and 10 (of report), should be implemented in the next six to eight months, so as to be in place with the harvesting of the 1987 crops, including winter wheat;

(3) the impact study associated with the proposed separation of broken corn and foreign material, should be given top priority, with the objective of being able to make adjustments in the present grade factor - "Broken Corn,

Foreign Material" (BCFM) effective for the 1987-88 marketing year for corn.

Farm Bureau suggests that this latter proposal be modified, to provide an alternative to the present BCFM factor. An impact analysis should include the financial costs associated with such an alternative. The proposal calls for identifying Broken Corn as a new factor, based on the fraction of a corn sample passing through a 12/64-inch round-hole screen, but not through a smaller screen (either an 8/64-inch or a 6/64-inch round-hole). This should be left "as is." The proposal also suggests that the portion passing through the smaller screen, plus coarse handpicked foreign material, would be a non-grade-determining dockage (discount) factor, similar in concept to wheat dockage, and listed on the certificate to the nearest 0.1 percent. Farm Bureau would like to this see modified so that the impact study will also appraise all the costs and benefits associated with separately identifying coarse handpicked foreign material as a non-grade-determining dockage (discount) factor, but identifying the portion passing through the smaller screen as a grade-determining Foreign Material factor.

This alternative will then be more consistent with the proposal concerning broken grain and foreign material in grain sorghum. It also would make additional capital investment and operating costs for cleaning unnecessary. A great majority of the grain elevators are equipped to (and do) remove dockage - the coarse foreign particles - but not the smaller particles. If these smaller

particles are treated as foreign material, the industry - including producers - may voluntarily determine whether or not to remove them. Buyers, however, can make an appraisal of the value of the broken corn content separate from the negative price effect of the foreign material and determine their bid offers accordingly.

The blending issue, whether it concerns similar lots of grain with varying moisture, foreign material or damaged kernels cannot be readily resolved by passing legislation to make such practices illegal, particularly if Farm Bureau policy concerning the prohibition of adding foreign material or screenings to a shipment of grain, is implemented. The impossibility of enforcing a mandate against blending is obvious. Even a system for monitoring the marketing of grain to uncover abusers would be costly and virtually unworkable. Any solution to resolve quality problems which may result from blending practices lies in reducing the tolerance levels within the grade standards, such as: (1) establishing a "food grain" grade for grains that are exported, with low tolerances for foreign material and damaged kernels; and (2) at the other end of each grade spectrum, a "utility" grade.

Problems associated with prohibiting the recombination of grain dust with grain, is one that deserves close and immediate attention, particularly as it applies to the inland handling of grain. Larger elevators, more recently constructed and relatively close to a ready market for the dust, are not likely to reintroduce the dust to grain. However, mandating such a procedure for all elevators may be quite

costly, and producers would bear the costs. Inasmuch as grain dust impairs the appearance of grain and is a frequent cause for quality complaints, it is imperative that this issue be readily resolved.

Farm Bureau wholeheartly supports the recommendation that state and federal agencies should adopt the same set of moisture meter calibrations for each grain, to make all meters used in the trading of grain agree with FGIS-approved meters. Perhaps this is an area where federal legislation, either in the form of a resolution or a law, would be in order. Congress most certainly, should take the appropriate action to encourage state agencies and the National Bureau of Standards to adopt meter calibrations which will give results consistently in agreement with those of federal inspectors using Motomco meters.

Farm Bureau also is in full accord with recommendations concerning end-use value tests, wheat classification, insect infestation, research and development, control of corn breakage, foreign complaints, educational programs and continuation of Grain Quality Workshop efforts, as covered on pages 21 through 28 of the "Commitment To Quality" report. Bringing many of these recommendations to fruition will require dedication by Congress to properly fund the research and impact studies needed and a re-alignment of priorities of the USDA within the ERS/AMS and FGIS agencies.

Farm Bureau has urged the FGIS administrator to undertake the necessary action to prohibit the addition of foreign material, other

grains, screenings, or wheat of other classes to a shipment of wheat to meet a certain grade. Sufficient criminal penalties for violations should be established and swiftly administered to deter such practices by anyone in the grain marketing chain.

In addition, AFBF has requested that FGIS complete its efforts to revise the classification of red wheats and implement its decision as quickly as possible. The dilemma facing the industry continues to mount with the harvest of the 1986 crop. In spite of the fact that wide differences of opinion exist among the wheat industry, including producers, everyone agrees that a solution is needed as soon as possible. As a result, implementation of a solution by FGIS should be given highest priority. At present we would favor action which will preserve the identity of both Hard Red Winter and Hard Red Spring wheats in all cases where the distinction is visually discernible in wheat being marketed. This may require adding a class for those varieties or mixtures of wheat being marketed which are not as readily distinguishable as either Hard Red Winter or Hard Red Spring. This approach would be preferable for producers marketing wheat in a distinct classification rather than receiving a "mixed wheat" class for their commodity. On the other hand, it is imperative that classification provides for the identity preservation of both high quality Hard Red Spring and Hard Red Winter wheats and that it be accomplished as early as possible under the requirements of the Grade Standards Act.

Finally, AFBF has asked FGIS to take the appropriate measures

necessary to reduce the tolerance levels of "wheat of other classes" (presently 3% for U.S. No.1, 5% for U.S. No.2, and 10% for U.S. No.3) in order to improve the quality of wheat in both the domestic milling and export markets, and to upgrade the identity of wheat classes. We recommend that Soft Red wheat and Hard Red wheat be considered as "wheats of contrasting classes." Such changes are needed to reduce the opportunity for grain traders purposely mixing one class of wheat, with a lower market price, with another of a higher price in an effort to minimize the cost of an outbound shipment.

In closing, Farm Bureau commends the House Subcommittees for their active role in focusing attention on grain quality, and seeking appropriate solutions to the issues raised as rapidly as possible.

We thank you for the opportunity to express our views.

Senator ABDNOR. Thank you, Mr. Held. We appreciate the input. I think I'm correct in saying none of the three of you are under time restrictions, so I can let you all go on one at a time and maybe have a discussion. Go ahead.

STATEMENT OF VINCE JENSEN, PRESIDENT, SOUTH DAKOTA FARMERS ELEVATOR ASSOCIATION

Mr. JENSEN. Vince Jensen, Ipswich, South Dakota. I'm president of the South Dakota Farmers Elevator Association and manager of the Ipswich Farmers Elevator. All of the rest of these fellows have spoken on grain quality and exporting, but a variety of wheat giving FGIS some real problems today is coming out of North Dakota, a variety called stoa. And in these you load wheat on a barge in Minneapolis and ship it to New Orleans. And stoa wheat and other wheat varieties have the same characteristics as winter wheat. It gets to New Orleans, and the FGIS inspectors at New Orleans will grade it as mixed graded wheat or winter and spring mixed and the character of the wheat on the barge was all spring wheat.

And the North Dakota Breeders Association and NDSU has harvested a variety called stoa, which the FGIS had a hearing, I think, in March of this spring and quite a crowd attended at Minneapolis at the Grain Exchange. And there is a lot of dissension on certain varieties of wheat that our plant breeders are breeding today, and this is giving the Federal grain inspectors a problem with honoring these grades.

So, if you would have seen the pictures of this thing, there is kernels in these varieties that show up and will look like winter wheat. Here in South Dakota, spring wheat has been our majority of wheat raised. Winter wheat is moving in fast into the State of South Dakota. But if we lose the characteristic of spring wheat and have to have a mixed grade, which is being proposed by the FGIS and other people in the grain trade, this could cost farmers 20 cents, 30 cents a bushel by having this type of quality of grading under mixed grain standards.

So, I feel that in our export market if we load a vessel when a foreign buyer has bought a Hard Red Spring wheat and then it gets to the destination and has a grade of mixed grain on the boat, this is just like having too much foreign material in corn or too much damage in soybeans. It's still a big factor that is plaguing South Dakota farmers. And with out economy today, I feel that the new changes will come in 1988 if they're proposed and made into law.

But as far as—I'm nobody to talk to corn and soybeans, but as far as wheat, I think we have to have something straightened out for the South Dakota farmers that are producing good Hard Red Spring wheat. So, Senator Abdnor, I think that's all I have.

Senator ABDNOR. Thank you, Vince. I was wondering, has that been an increasing problem?

Mr. JENSEN. Increasing problem. I maybe should back up a little bit. In North Dakota and some areas of South Dakota our protein content has been lowered drastically in the last few years. Some of our varieties, even with good fertility, is 13 and 14 protein where

maybe our area was a 15, 16, or 17 producing area. Well, from 13 to 17, that's been a dollar a bushel or more, Jim, in premiums. And the University of North Dakota has had areas where they've had 8 and 9 protein, 10 protein wheat, spring wheat, and that has entered in some areas of South Dakota.

So the stoa variety is the one—is the one that they're really documenting now that it has these—when you take these kernels under a microscope and put them on a screen, there is characteristics of winter wheat classes that are being bred up. It's supposed to be 2 to 3 percent higher protein wheat than a lot of our other varieties. And this is a lot of value to farmers. If we could raise our protein to 2—at least 2 percent—would be a very good boost for our economy of agriculture today.

Senator ABDNOR. It's interesting. I'll tell you something, we're going to go on with Maynard Whitmyre who is representing the Farmers Union. I want to hear from him. But when we're through, I'm going to ask Mr. Hill to comment on that just to see where it's at on the study list. There is a problem. Maynard, happy to have you.

STATEMENT OF MAYNARD WHITMYRE ON BEHALF OF LELAND SWENSON, PRESIDENT, SOUTH DAKOTA FARMERS UNION

Mr. WHITMYRE. Thank you, Senator Abdnor. I'm substituting, so I didn't dress up for the event, but I appreciate the opportunity and am glad that you are holding this hearing. Leland Swenson had to go to another meeting, so I will read his statement.

Leland Swenson is president of the South Dakota Farmers Union, our State's largest farm and ranch organization. His home and office are located in Huron.

Mr. Chairman, American family farmers and ranchers produce top quality products. Grain grown here in South Dakota and throughout our Nation is equal in quality to that grown anywhere in the world.

Farmers are, therefore, justifiably outraged when they hear reports of U.S. grain exports arriving overseas containing rocks, dirt, and every other conceivable variety of foreign matter.

The following position was adopted by delegates attending the 1985 South Dakota Farmers Union State Convention in Huron last October 11 and 12.

We urge Congress to review the adequacy of the grain inspection system with emphasis on the following:

(*a*) To prohibit conflicts of interest between inspectors and grain traders.

(*b*) To provide penalties including revocation of licenses, suspension of operations for given periods of time or permanently, fines and imprisonment. The export of grain handling licenses of any firm found guilty of adulteration of grain moving in international trade shall be revoked for a period of not less than 10 years.

(*c*) To provide grain inspection personnel to spot check U.S. grain at foreign ports to determine whether it is of the same kind, class, quality, quantity, and condition that was certified at the time of shipment.

(*d*) We support the establishment of international grain standards designed to protect the interests of agricultural producers and consumers throughout the world.

I would like to offer for your consideration two additional policy positions adopted by the delegates at the National Farmers Union Convention on grain standards: A premium equal to the shrinkage loss should be paid at market price to a farmer for grain testing at lower than the dry grain moisture standard for said grain on grain inspection.

We continue to oppose the imposition of user fees for the inspection and grading of agricultural commodities. Federal inspection and grading of such commodities is in the public interest and national economic interest and should not be charged to the producers.

Mr. Chairman, also during the 1985 South Dakota Farmers Union Convention, we announced the formation of Farmers Union Commodity Councils. Our primary objectives in taking this step were to strengthen our efforts in working toward increased farm and ranch income and to promote unity among producers of all agricultural commodities.

I would now like to introduce Mr. Boyd King, who is a member of the Farmers Union Feed Grains Council, to present additional testimony on behalf of our organization.

Senator ABDNOR. Go ahead.

Mr. WHITMYRE. Boyd King.

STATEMENT OF BOYD KING, MEMBER, SOUTH DAKOTA FARMERS UNION FEED GRAINS COUNCIL

Mr. KING. I'm Boyd King. I'm a member of the South Dakota Farmers Union Feed Grains Council, a grassroots organization that was started this spring, and I do live in Brule County, near Chamberlain, SD.

Since I was selected as a member of the Farmers Union Feed Grains Council earlier this spring, I've been studying the problems involved in grain inspection and grain standards, and I've come to one conclusion. That is, that grain inspection standards must be universalized around the world. We have to establish across-the-board standards on all exported grain. I don't mean just oats and wheat and corn. I mean everything.

I think that this is the only way that we can guarantee that American farmers will be treated fairly. It is also the only way we can make certain that our oversea customers are also treated fairly, because we've had a lot of conflict and there is conflict. And through standardization and I mean complete standardization, not just of our own inspections, but of all countries involved, all exporting and buying nations, they all get treated equally.

But the current system is not working too well. It may have looked like it was working all right in the mid- to late 1970's when exports were going up every year. You buy it as is, where it is, and there it is, you got it. But U.S. grain exports have dropped by 37 percent since 1981. And it's about time that we start paying attention to those concerns of our customers, because yesterday I was in

the Chamberlain Elevator, cash wheat was $2.21, 13 pro. Now, that's not very good.

And we should also all be supportive of any effort to tighten U.S. Department of Agriculture wheat standards. It is particularly important that the standards on dockage be improved. Current rules permit grain exporters to understate dockage by rounding it down to the nearest half of a percent. According to recently proposed USDA rules, that would be changed to the nearest one-tenth of 1 percent.

According to Sonja Hillgren, United Press farm editor, the General Accounting Office recently analyzed dockage at 22 of the largest export elevators in the country. All of them had sold dockage for wheat prices, but the amount of dockage varied among elevators from 0.13 percent to 0.43 percent. And according to current rules, grain with dockage up to 0.49 percent can be listed as dockage free. Now, you don't buy a dozen eggs and only get 11 in a carton all the time. You go try to figure out what happened to that other egg.

It is surprising to learn that officials at two of these export companies are actually happy that they were near the upper limits on dockage. The ability to blend dockage into grain up to the maximum level increases their profits.

When I take grain to the elevator, and I've sold to several elevators including your home town, Senator, I took a sample and put it in a little thing and it shook down—and they weighed it first and shook it all down and come back and I stood the dockage, and from there on it was shipped. Now, there has been testimony that this dockage was sold by me, but it wasn't because I never got paid for it and I didn't want to be paid for it.

Establishment of international standards on grain will probably require some advance studies. I think that it is important for those who conduct these studies to be knowledgeable. But it is also important that they be independent from the grain trade. Being unbiased is quite a trait in the American way today. Your influence, money, standards, everything influences the person's vote, and if these things cannot be completely unbiased standards or studies, then the results of their study cannot be accepted.

Once these studies have been completed, it will be in our best interest and the best interest of both grain exporting and importing countries over the entire world to establish standards that everyone can accept and work with.

On another issue of concern to farmers and ranchers, I feel that the export PIK Program must be applied across the board to all of our customers or it should be scratched entirely. Showing favoritism to some nations damages our relations with other importing countries and will ultimately hurt, not help, our exports—as the grain embargoes and other such sanctions.

Mr. Chairman, I'll try to answer any questions that you may have. Thank you.

Senator ABDNOR. Thank you, Mr. King. First, let me say, Mr. Held, I notice you made the statement about your concern about the 1 percent point difference. My amendment got amended on the floor in that session by one other Senator which carried.

Mr. HELD. I understand how it happened. I wasn't being critical of you, Senator.

Senator ABDNOR. OK.

Mr. HELD. Hopefully, as the Department and FGIS look at that, they will realize how unworkable that kind of a situation is, because we understood very well as you were carrying the bill, you know, that 1 percent of something like that would not be workable. But if——

Senator ABDNOR. No, no. I just wanted to, for my own sake, set the record straight on that. Mr. Hill, going back to Mr. Jensen's statement on these other varieties and what it's doing to the export market. Is that a factor in some of the higher echelon's thinking as we're going into this study?

Mr. HILL. Yes, I think even the NAEGA group, the North American Export Grain Association, the NAEGA group, has appointed a committee to work on this as well because they consider it a problem. And the problem, of course, is very well documented that our system of grading which uses classes does not really reflect the end-use value—back to the same thing as before.

The FGIS has consistently said that the law tells them that they have the responsibility of creating the standards to measure physical and biological characteristics of grain, period. The concept of end use is not in their purposes. Therefore, classes are just fine because that's as good as any other thing. They have no relationship to end-use value, perhaps, now. It may have had originally.

So it needs to be changed, but I don't think—first of all, I'm not a wheat expert. Illinois doesn't grow much wheat, so I take a disclaimer first. Beyond that, I think that we do need to look at the existing technology as well as new technology. Right now, we're trying to classify it in varieties and it keeps getting harder and harder because we keep mixing the genetics.

Senator ABDNOR. Vince.

Mr. JENSEN. Jim, on these mixed wheat classes, FGIS has a lot of problems. You take a—one of their inspectors from Minneapolis, Duluth, Portland, New Orleans, he has to be into training human beings to take that same sample. We take spring wheat from South Dakota and send it to New Orleans. We take spring wheat and send it to Portland or Seattle. And those people, it is near impossible to train a human being that each one will test that sample identical. And this is a very bad problem. And I think Mr. Hill will—a human being just cannot grade that accurate.

Mr. HILL. I'm not sure anything else, not even machines in many cases. But I think we do have technology that could begin to look at some of the milling problems. But the problem has been that we've never encouraged anyone to do research in that area because we come back and say it doesn't matter. The grade says its class and whatever the inspector says it is.

The encouragement is to breed for yield and don't worry about what it does to protein and other things. Wheat is better off than corn and soybeans from that respect because at least you're measuring protein content of wheat amounts, and soybeans don't measure that.

Mr. JENSEN. Mr. Hill, I'd like to ask you one question. Do you think OSHA and EPA have any bearing on our grain quality in

our metropolitan area? Everything is under dust is the expression today and these people have no place to go with this material, so they suck it out of the air, pump her right back into the stream again, and it's a problem that I think is very, very serious.

Mr. HILL. The OSHA and EPA people have had an effect upon procedures that are being used to suppress the dust. I don't think they really had an effect upon grain quality because in most cases it always was put back in again. At the export house we've observed it time and again and it's not even kept secret because it's not illegal.

That shipment that we followed to Japan, they were loading the vessel with a big spout of grain. They had a little small spout beside it sucking the dust out to meet EPA regulations, otherwise it would have been all over the port. They reintroduced the dust at the top of the spout into the middle of the stream so it would be held into it.

They have the choice of either taking a loss of weight because the buyer has already paid and delivered too many tons. If you take that—and they've already bought the dust, so the only choice is to get rid of that some way, and there is no good alternative for getting rid of it without a loss. The problem comes back that our standards say that that's permitted, that you're allowed 3 or 4 percent or 2 percent or whatever it is, and therefore, if that's what would be ordered, that's what you ought to put in.

Senator ABDNOR. I want to ask a question here. We were awfully close at times on the Senate floor to almost putting in some mandatory language on grading. And I personally had reservations about that. A lot smarter people than those of us on the floor had been dealing with this subject and that's why I came up with the study. Do you think that this is the right way to go? The study itself has a lot more attraction to it. At least you can come up with a better system or make corrections in the present system, whatever it is, than just allow one of us to go down and introduce some piece of legislation.

You said a moment ago, that's the law. It would be easy to put legislation in. And frankly, maybe if something isn't done within the months ahead or a year, that's probably exactly what could very well happen, because it's kind of like this trade policy or the South African thing. The administration was dragging its feet on it, and both the House and Senate had passed legislation. And I think pressure might cause something like this to happen in the near future. OTA has 18 months—I thought that was a little long, I'd rather have seen it in a year's time.

Mr. JENSEN. The sad part of this whole deal, Jim, if it comes back to the farmer, he's going to end up paying the end result. This is a sad deal of all changes today because the farmer is about done.

Mr. HELD. Are you done?

Mr. JENSEN. Yes.

Mr. HELD. There is no way——

Senator ABDNOR. You could help the young lady out by saying your name.

Mr. HELD. Mike Held with the Farm Bureau. There is no way possible you could regulate—let's sit here and imagine what the grain handling industry looks like from every country elevator and

before that, the farmers, and many farmers are equipped to do all kinds of blending and all kinds of handling procedures.

Now, I guess we shouldn't kid ourselves to sit here and think—because I don't care if the Senate or House or both or the President signs it or what, you can't sit in Washington, DC, and determine what's going to happen with grain handling from the farm until it arrives in Japan, China, or someplace.

I think a much easier way, and Mr. Hill hit on it, is the incentive system. You cause people to want to, you cause it to be profitable for them, you cause it to be in the best interest of them acquiring that customer back again, and that is you provide some incentive to that grading system. The system that you rank the end product on provides incentives to want to do it.

There is no feasible way I can see you can get enough regulators out here across the country. You'd need a regulator at every combine and every storage bin in order to do it from that perspective. And I'm afraid that emotionalism in Congress and the misinformation in the country leaves us with the possibility of that type of regulation coming and it's not going to be good for anybody.

Senator ABDNOR. Again, I'll call on Mr. Hill. Has this proposal, to your knowledge, been looked at, the incentive plan?

Mr. HILL. I'm too prone to make comments to anything, so any time you want me to stop and say time's up, you do so; otherwise, I can't resist going on. I have about three comments here. The first one is relative to the statement that farmers must pay for some of the grade changes and they can't afford to pay any more. I've heard this too often without anybody recognizing that many of these changes that we've recommended for years was not more discounts for farmers but less.

The proposal to remove test weight from the grade standards received just as much opposition from farmers as well as the grain industry as it did to put a new factor in. Clearly, if putting a new factor in creates more discounts, taking an old factor out must give you less discounts. So you can't have it both ways.

If we can reduce the amount of foreign material, worthless foreign material being shipped from New Orleans to Japan by 1 percent, just to give an easy number, in a 50,000 ton vessel, that costs $6,000 for transportation alone. One percent excess water in that vessel costs $6,000. The Japanese paid $6,000 to haul water from Illinois to Japan in the rainy season. It doesn't make sense. And it doesn't have to cost anybody to cut that back, save $6,000 and share it among all participants and everybody should be better off.

Not all the changes mean an extra cost to the farmer and for too long people have been telling the farmer, don't let them change that. It's going to cost. I've heard this statement again in meetings. The farmer responds to this and says, gosh, we can't stand any more. Don't do it to us again.

Back to the question of legislation. I think legislation has two reasons. One of them is to keep the pressure on for action. And I think Congress has done this very well. I think we are a lot further ahead on agreement among all parties of something needing to be done as a result of some of these proposals in Congress than we ever would have been had you stayed clear out.

Second, I think, is to provide policy guidelines. I can see it being advantageous for Congress to legislate that the purposes of standards shall be the four things I gave you earlier and force FGIS and the industry to act on those four more effectively than trying to legislate specific changes in standards, which are really legislatory issues on prohibitions.

I've looked particularly at the prohibition on moisture blending. And while the 1 percent has been looked at as ridiculous, even the Japanese laughed when they saw that one, but the 4 percent is really not much better and let me explain why. First of all, we've tested ears of corn in the field and the moisture variability from the butt to the tip of an ear of corn was more than 4 percentage points. So you're now saying it's illegal if you harvest one ear at a time, you go out and havest half an ear at a time, you're blending illegally. The range of moisture from the bottom of a farmer's drying bin to the top is often more than 4 percentage points. Is it going to be illegal for him to unload that whole bin at once? It's a nightmare to enforce.

Second, let's take two elevators. One elevator has blended 10 percent and 14 percent, that's legal, and you got 12 percent out of it. Another elevator has blended 14 percent and 18 percent, that's also legal. It's still within 4 points, it's legal. It goes down the river in two barges. The export elevator now has one at 14 and one at 16 on an average. He can blend them together perfectly legally, but he's got a range now from 10 to 18 within the mixture.

The vessel we followed to Jpan was pulled from bins in the export elevator with a maximum moisture in his bin of 15.8 and a minimum moisture of 14.6. We measured the moisture of individual kernels within that vessel and found moisture ranging from 12 percent to 17.7 percent, and the 17.7 percent just simply rotted on the way over. They would have met the requirements of the prohibition law. So first of all, it's unenforceable; second, it's ineffective.

Senator ABDNOR. What is the maximum moisture you could have while you were taking that vessel overseas?

Mr. HILL. Anything the buyer asks for, and the Japanese have asked for 15 percent on their contract. We've told them it's too high, it's too wet. We could never tell a farmer to store 15 percent moisture corn through temperatures of 105 degrees in the Panama Canal in an airtight container for 6 weeks. It's ridiculous; yet the Japanese do it.

Senator ABDNOR. Why?

Mr. HILL. Because the guy who gets the damaged corn at the end is separated by an importer and he's 1 of 40 buyers. The importer says, I want the lowest price because I make the money on my price. So the importer is really not very concerned. We find the importers in Japan almost as bad as the exporters in the United States saying, we don't really care. They can get cheaper grain at 15 percent, and part of the time we load 14 percent on the 15 contract and they get the benefit of it.

So one solution to that that I propose, and maybe we'll get a response from the elevator manager here because I usually do get a strong voice from the elevators, if we set the quality of grain on the basis of the dry matter it contains, we've eliminated the opportunity to make money by blending 20 and 10 percent together. You no

longer need to have a policeman watching that elevator saying, thou shall not blend. If he can't make any money at it, he will quit.

Senator ABDNOR. That's good—any comment?

Mr. JENSEN. That would work fine. There would be no problem with that.

Senator ABDNOR. How about you, Mr. King?

Mr. KING. Yes, I really watched that and listened to that. That's really good to get—if we get the dry matter material and forget really the rest of it, it would just be super.

Mr. HILL. The trade associations, farmers' associations, have been very supportive of this concept. But the grain industry in general says: (*a*) either it won't work; or (*b*) it will bankrupt all the elevators because now we can't make any money blending water.

An interesting approach to that, if you wish to really jump off on a far limb, we have never legally defined in Federal standards a bushel of corn in terms of its content or in terms of its weight. Fifty-six pounds to the bushel has been accepted in commerce, and a few States have passed laws, but there are no Federal standards saying a bushel shall weigh 56 pounds in corn and 60 pounds in soybeans.

Furthermore, that bushel of corn can contain 20 pounds of water and 36 pounds of corn or it can contain 36 pounds of water and 20 pounds of corn and it's still a legal bushel. In fact, I think it can contain, according to the law, 56 pounds of water if you could shape it into little yellow kernels. How about defining a bushel of corn to be any quantity and moisture content of corn that contains—what's the number, 34 point—the dry matter in a bushel. I forgot my calculation—37.4 pounds of dry matter.

Mr. JENSEN. Where did I have it here. Test weight, yeah, test weight. The weight per Winchester bushel is 2,150.42 cubic inch capacity, and that's how the weight has been set.

Senator ABDNOR. Mr. Hill was getting ready to comment.

Mr. HILL. The definition of a Winchester bushel is defined by volume, the size of the basket. But you may not be able to get a bushel of corn in that at all or you may be able to get a bushel and a half in it. That's an exaggeration. You can get more than a bushel in it. We define for commerce—we do not really sell grain by bushel volume. We sell corn by 56 pound units. We sell soybeans by 60 pound units. We sell wheat by 60 pounds. You don't really measure bushels. If the scale says 60,000 pounds on a scale ticket, you determine how many bushels it is not by the capacity of that truck, but by dividing by 60.

So we do not have a legal definition, to the best of my knowledge, a legal definition of a bushel. If we were to pass a law stating that the legal definition of a bushel shall be a bushel containing x pounds of dry matter per unit, then the foreign buyer would stop playing these games in saying I'm going to order 15 percent moisture corn because I might accidentally get 14 percent. If he gets 14 percent, he has to pay for more bushels under my system. At the present time if he orders 15, gets 14 by mistake he's getting another 1.1 percent of actual weight to make starch out of. It's a gift.

Senator ABDNOR. Well, gentlemen, we could go on, but it's almost 4:15. I personally think it was a very excellent hearing. I hope all the facts we picked up at both the grassroots level with you folks

and the input from these other gentlemen, that the Office of Technology Assessment will make some wise decisions in the report they come up with. I really appreciate Mr. Hill's time in staying with us and we thank you all for being here. The subcommittee will stand adjourned.

[Whereupon, at 4:10 p.m., the subcommittee adjourned, subject to the call of the Chair.]

[The following information was subsequently supplied for the record:]

TESTIMONY OF MICHAEL J. PHILLIPS, PH.D.

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FOOD AND RENEWABLE RESOURCES PROGRAM

OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS

BEFORE THE

JOINT ECONOMIC COMMITTEE

Issues in U.S. Grain Quality

August 26, 1986

Mr. Chairman and Members of the Committee:

The Office of Technology Assessment is pleased to submit testimony for the record for your hearing on August 26. The testimony was prepared by Dr. Michael Phillips, senior associate with the Office of Technology Assessment and the project director of our activity on grain quality. The purpose of this testimony is to provide the Committee information on our work to date on grain quality and our plan for further work in this area.

Agricultural exports are vitally important to the United States economy. They have become critical to many sectors of the U.S. economy-farming, input suppliers, transportation, banking, and others. Domestic markets are not growing fast enough to absorb farm output, leaving agriculture and many related industries increasingly reliant on the increasingly competitive export market for growth.

The volume and value of U.S. agricultural exports (mainly wheat, corn, and soybeans) have dropped sharply since their peaks in the early 1980s. Export volume in 1985 was 20 million tons below the 162 million shipped in 1981. Some commodities have been greatly affected by declines in exports. Wheat was one of the major beneficiaries of the expansion of exports in the 1970s. In 1981, 65 percent of wheat production was exported. By 1985, it had declined to 40 percent. Corn exports were equivalent to 40

percent of production by 1981. In 1985, corn exports accounted for only 15 percent. For soybeans approximately 50 percent of acreage was exported in 1981. By 1985 soybean exports had declined by 30 percent. Reduced exports in these commodities translate into significant decreases in income and a worsening trade deficit.

Reasons given for the decline in agricultural exports include: 1) strong value of the dollar, 2) a weak world economy, 3) lower production costs of other countries, 4) increase in trade agreements between countries, 5) price support levels (subsidies) that permit other countries to undersell the United States, and 6) low quality of U.S. grain. The first five reasons are considered by many to be the major ones for declining U.S. exports. However, the quality issue is receiving more attention in the current world buyers market for grain. There is concern that as the dollar weakens and U.S. exports become more competitive, opportunities to increase exports may be hampered by the concern of foreign buyers about U.S. grain quality.

Today more competitors exist in the international grain market than just 10 years ago. In the 1970s one-third of the world supplied grain to two-thirds of the world's people. Growth in farm trade was dynamic. Today, two-thirds supply grain to one-third. Trade growth is stagnant. In such a competitive atmosphere foreign buyers have become increasingly sensitive about the quality of grain they receive.

During the debate of the Food Security Act of 1985, several Members of Congress expressed growing concern over the quality of U.S. grain exports. Accusations were made that grain elevator operators and traders were adulterating loads of grain shipped to foreign buyers; these allegations were supported by a sharp increase in foreign complaints about quality. On the other hand, grain traders and handlers indicated that they had been shipping grain according to specifications, and that most buyers' complaints were motivated by their desire to obtain a higher grade of grain at a lower price from U.S. sellers.

As a result of this conflict, Senator Abdnor offered an amendment to the Food Security Act of 1985 to have OTA conduct a study of grain-handling technology and quality standards. The study is to provide information on: 1) competitive problems the U.S. faces in international grain markets that can be attributed to compromises in grain quality; 2) the extent to which U.S. grain-handling technologies and quality standards have contributed to declining grain sales; 3) differences in grain-handling technology and export quality standards between the U.S. and competitor countries; 4) consequences to exportors and farmers to changes in grain-handling technologies and quality standards; and 5) feasibility of utilizing new technology to classify grains more exactly.

In response to the mandate from Congress to conduct a study on grain quality issues, the Technology Assessment Board approved an exploratory effort in this area. Its purpose was to explore the issues surrounding the grain quality controversy and to prepare a proposal for a more comprehensive study if necessary.

A major part of the exploratory effort was working with the grain industry in their attempt to begin addressing the grain quality issue. Concerned with rising customer complaints of grain quality, the industry began to address the issue from producer to exporter through a series of monthly workshops which were held from January to June in 1986. A report entitled Commitment to Quality was produced by the workshop participants. It recommends six proposals for specific grade standard changes for corn, sorghum, soybeans, and wheat. In addition, it made other recommendations for studies concerning other possible changes to improve quality.

The series of industry workshops was a commendable undertaking. It represented for the first time in the history of the grain industry that all segments from producers, handlers, and exporters participated equally in discussions on an issue they all had in common. Their effort was unique and progressive. However, they soon realized that the

"quality issue" is complex. Many other related questions still await discussion and analysis. In many cases information did not exist and pointed toward areas where research is needed.

OTA has found that no comprehensive study on grain quality exists today. Besides the industry-wide workshops and report, there exist studies on specific facets of grain quality such as the GAO reports Assessment of the National Grain Inspection System in 1976; Federal Export Grain Inspection and Weighing Programs in 1979; and U.S. Grain Exports: Concern About Quality in 1986. In addition, a consortium of land-grant universities, along with the U.S. Department of Agriculture, conduct and publish research on the biological and physical properties of grain, some of which relate to quality.

The OTA exploratory effort has found that a large number of issues exist which need to be addressed. To date no comprehensive study has been done which brings either the problem or its possible solutions into focus. The questions Congress mandated OTA to answer as listed in the Food Security Act of 1985 will require OTA to undertake a comprehensive study. The following is an outline of the major elements which need to be included in such a study: 1) identifying grain quality attributes, 2) determining the strengths and weaknesses of the U.S. grain export system from plant breeder to end user in providing quality grain, 3) comparing and contrasting other countries' grain export systems with that of the United States, and 4) analyzing changes in technology, grade standards, economic incentives, and public policy to provide quality grain.

1. Grain Quality Attributes

It is important to determine what the specific quality attributes are before analyzing potential changes in the grain export system. Information is needed on the different markets for grain of various quality, where these markets are likely to be in the future, and the specific quality attributes considered to be important. If quality is to be an important factor in the future, then the characteristics of grain must be better matched to the quality requirements of each industry. For example, corn and soybean

processors in Europe would like to receive grains and oilseeds with improved quality characteristics that more closely meet the needs of their respective industry end products. Information about the quality of grain required by each industry is needed to justify changes in research on varieties and on technology for harvesting, drying, transporting, and storing grain.

2. Strengths and Weaknesses of Present Grain Export System

A comprehensive analysis of the present system is needed to determine the system's strengths and weaknesses in providing quality grain. Topics needing analysis include a) technology, b) grades and standards, and c) public policy.

a) Technology

Little research has been directed toward developing technology which enhances grain quality. The major objective of agricultural research is to increase grain production as well as to develop technologies which can handle, transport, store, and distribute larger quantities of grain. For example, some plant breeders direct research toward developing new varieties of corn, wheat, and soybeans which increase bulk yield but do not increase protein, starch, or oil to enhance quality. If quality is to be emphasized, a comprehensive analysis is needed of present and emerging technologies which produce, measure, handle, transport, and store grain.

b) Grades and Standards

The industry-wide workshops provided a new perspective on defining the purpose of grades and standards — a perspective that emphasizes quality. The workshops defined four objectives for grades and standards: 1) define uniform and accepted descriptive terms to facilitate trade, 2) provide information to aid in determining grain storability, 3) offer ends users the best possible information from which to determine end-product yield and quality, and 4) create the tools for the market to establish quality improvement incentives. There is now a standard to measure whether the present system provides the

environment conducive to producing and delivering quality grain. The question to be addressed is do present grades and standards adequately measure and differentiate grain quality for specific end uses?

c. Public Policy

An important component of the system relates to public policy. For example, are present economic, tax, and agricultural policies adequate to provide the necessary incentives within the system for the United States to profitably produce, market, and deliver higher quality grain? Are the various policies compatible or contradictory? Some indications exist that the policies at a minimum do not provide the necessary incentives. For example, the Federal government is one of the largest customers of U.S. grain through its acquisition by the Commodity Credit Corporation (CCC). However, grain placed in storage by CCC is not subjected to the same discounts as those in the market. Consequently, a potential exists for lower quality grain to be placed in storage where it will deteriorate and spoil more rapidly than higher quality grain.

3. A Comparison of Grain Exporting Systems of Other Countries With Those of the United States

Certain countries have acquired a world-wide reputation for delivering high quality grain to international markets (eg. Canada, Brazil, Argentina, and China). Unfortunately, little is known about the methods these countries use to produce, handle, transport, store, and deliver quality grain; nor is there much known about the types of incentives, guidelines, or standards they use for ensuring high quality grain. There may be attributes of these and other countries' grain export systems that could be applicable to the U.S. system. A careful comparison of these systems is needed.

4. Possible Changes in the U.S. System

The above areas of analysis would provide important information needed to assess the effects of various changes in technology, grade standards, economic incentives, and public policy for improving grain quality. The analysis would involve weighing the costs of these changes with the benefits to be derived.

At the present time OTA staff is preparing a proposal addressing these areas to be considered by the Technology Assessment Board. If the proposal is approved at the next Board meeting, OTA will begin the study in October 1986.

Thank you for the opportunity to prepare this testimony. OTA will be pleased to respond in writing to any questions you might have.