



The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

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The goal of this newsletter is to serve the best interests of Treasure Valley cereal producers. It will be issued periodically as information warrants. Correspondence and inquiries should be addressed to: **Parma Research and Extension Center, 29603 U of I Lane, Parma, ID 83660 (208-722-6701 Ext. 216) (Fax-208-722-6708) (Email bradb@uidaho.edu)**

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Wheat Cleanliness Revisited

The cleanliness of our exported grain continues to be an issue affecting our competitiveness in international markets. Pacific Rim market share that we've lost to Canada and Australia is the result, in part, of cleaner grain marketed from those countries. Our grain is typically twice as dirty as theirs.

Cleanliness is related to the dockage, foreign material, and defective or shrunken and broken kernels in the shipment. Dockage is the easily removed nongrain material in the grain, including chaff, stems, and rocks. Foreign material by comparison is all nonmillable material that remains after dockage is removed, including shrunken and broken kernels.

Dockage

Producers have suffered considerable discounts for dockage the past several years as exporters have adjusted rates to encourage the delivery of cleaner grain. The discounts are not only with us to stay, they may get worse.

Japan is scheduled to reduce their allowable dockage in all US wheat classes beginning November 2001 to 0.3% from the current 0.4%. Exporters anticipating that change will likely increase the discount for dockage and those discounts will be reflected in local elevator dockage discounts. Just how much higher those discounts will be is a bit up in the air right now. Each exporter will probably have their own discount schedule. You might check with your local elevator.

About a third of the total wheat exported from the PNW is now under strict dockage specifications. We can expect that portion to increase as other countries begin to follow the Japanese example. But the US grain industry needn't worry about cleaning all the wheat it exports. The USDA Economic Research Service recommendation, from their study of the issue, was to target only those importing countries with the lowest tolerances for dockage and foreign material (Japan, Taiwan, Philippines).

Despite the fact that most exported wheat does not require such strict dockage requirements, the discounts will be applied uniformly to all wheat entering the export marketing system. Local elevators for example won't know what the ultimate destination and use of their stored grain is going to be and will need to assume that it needs to be export quality. Unless they segregate the good from the bad, they will need to pass on any dockage discounts for all the wheat they take in.

Dockage can be controlled largely with appropriate combine settings. With poor wheat prices it may be tempting to pay less attention to combine settings and simply be rid of this crop as soon as possible. We can ill afford both poor prices and high discounts.

Non-Millable Material

Dockage is only part of the cleanliness issue, though it tends to receive the headlines. Foreign material is also part of the problem, and in some respects it is a better indication of the inadequacy of the current marketing system when dealing with our more sophisticated buyers. Tom McCoy, Oregon Wheat League President, helped clarify this issue for Oregon producers in a recent **Oregon Wheat** magazine article (May 2001).

Most of our wheat is bought and sold on the same basis, that is, dockage is deducted from the total weight. Our customers don't pay for the dockage in their delivered wheat. In contrast, foreign material and the shrunken and broken kernels are not deducted from the total weight and our customers do pay for them.

Foreign material, averages only 0.2% but shrunken and broken kernels averages 1.1%. When both are taken into consideration, together with the additional cost of transporting and handling, this amounts to about 6 cents in additional cost per bu for US wheat based on a Portland FOB price of \$3.20 per bushel. Canada removes foreign material and the shrunken and broken kernels with their cleaning and it is all too apparent to our customers that Canadian cleaning results in more millable wheat for the buyer.

Shrunken and Broken Kernels

You may wonder why shrunken and broken kernels are not acceptable for milling. Shrunken kernels may have different and less acceptable flour quality and must be milled closer to remove the bran than non-shrunken kernels. Since rollers are set for non-shrunken kernels, shrunken kernels are not milled as closely, less bran is removed from them and the flour is more discolored. If rollers were set for the small percentage of shrunken kernels, non-shrunken kernels would be milled too closely with the loss of excessive flour.

Broken kernels you would think would have comparable flour quality as non-broken kernels, differing primarily in shape. But broken kernels can have exposed embryos which are altered with exposure. Also, their misshapen character alone is enough to cause them to mill differently than non-broken kernels. Broken kernels must be milled closer than non-broken kernels and are therefore removed for the same reason as shrunken kernels. Although screenings and milling by-products can be marketed for nonflour purposes such as feed, flour millers would understandably prefer to focus on the production of flour.

Net Millable Bushels

Actually, all millers routinely clean their wheat before milling, regardless of the wheat source and its cleanliness. It costs no more to clean wheat with 1% dockage than with 0.1% dockage, with 3% shrunken and broken kernels as with 1%. The issue then is not the cost of cleaning by millers. Rather it is their payment for non-millable product.

Is there a better, more competitive way to market US Wheat? One suggestion was attributed to Tony Flagg from Pendleton Flour Mills who suggested marketing our wheat on the basis of “net-millable bushels.” Instead of deducting only the dockage from the total weight, deduct all foreign material and defective nonmillable kernels as well. Require payment for only that portion of the delivered grain that can be used for milling.

Our continued charging for the nonmillable fraction of the shipment is apparently at the root of our customers’ concern and dissatisfaction with US

wheat. We can address dockage concerns more easily than we can their concern for nonmillable product. Marketing US wheat on a “net-millable bushel” basis would go a long way to addressing the market’s concerns with cleanliness.

Lodging

Higher dockage often results from lodged wheat, due to the extra plant material that must be processed by the combine. Controlling lodging with appropriate variety selection and cultural practices, optimum water and nitrogen management, and use of a plant growth regulator where appropriate can appreciably reduce dockage and the associated discounts.

If lodging is concentrated in areas that can be conveniently harvested separately, then it may be useful to market them separately as well. If lodging occurs, dockage may not be the only quality problem. Test weight may be lower and black tip or sprout higher resulting in a lower USDA grade. The lower price due to dockage and lower grade can be appreciable with all the problems associated with lodging.

Segregating Wheat

Marketing locally as animal feed, where cleanliness issues are not as great, may be a more viable option than marketing as exportable food wheat. This may be less true than last year since there is currently less of a price difference between wheat and feed grains. But appreciable discounts for wheat can quickly widen the price difference. Check local feed markets before selling wheat with significant dockage.

Just a reminder too that some elevators can segregate higher dockage wheat if they know in advance it’s coming. The savings from lower cleaning costs in some cases are shared with producers. When all wheat is comingled elevators will be more inclined to pass on the full discount to the producer.

Varieties

Varieties can differ in their threshability. More difficult threshing varieties require higher cylinder

speeds or closer concave settings. These varieties can be more difficult to harvest cleanly as they can result in more grain cracking and/or a greater percentage of white caps (where the chaff remains with the threshed kernel).

This threshability characteristic is not routinely evaluated in our traditional variety performance development and testing, nor is it considered in the variety release decision. But it becomes obvious enough when the variety is grown commercially and harvested. The more important cleanliness becomes as an economic issue, the more critical it will be to provide varieties with good threshing characteristics.

Harvest Timing

Many growers have little control over the timing of their wheat or barley harvest, unless they have their own equipment. For those with the equipment, there are a number of good reasons for not delaying the harvest any later than necessary after it's combine ready. A delayed harvest involves greater risk of grasshopper damage, and increased risk of late season rain or hail. The effects of hail and the resultant seed shattering are pretty obvious. But excessive rain can also cause sprouting of the grain and significant discounts in price.

There is another factor. The longer you wait to harvest after it reaches 12% moisture, the more you lose in compensation for what you deliver. The industry does not pay you on a dry matter corrected basis. That is to say, that the drier your grain is when delivered, or the less weight you actually deliver, the less you receive for the grain. It is one of those quirks of the current marketing system, that the higher the grain quality in terms of lower moisture content, the less you receive in payment.

Most elevators won't accept grain with moisture content over 12%. But there's no sense in letting it dry out to 6 or 8% moisture if you can deliver at 10 or 11%.

Moisture Corrected Payment

Of course many don't have the control over harvest timing that their neighbors with combines

do. Even those with combines can't always schedule their harvest such that they can avoid delivering wheat with moisture contents appreciably below 12%. Will there ever come a time when you are compensated for the actual dry weight (or bushel equivalent) of grain delivered?

The issue has been discussed periodically at National Association of Wheat Grower Board meetings. But the proposal, lacking wide or enthusiastic support from areas with higher moisture content grain, is generally tabled. It's too bad, because this would be a positive development for PNW wheat producers. PNW wheat typically is 2-3% drier than Canadian, Midwest, or southern US wheat.

Converting our drier wheat to a 12% moisture based (equivalent bushel) standard would provide additional income to Idaho producers. A moisture difference of 1.5% (12% vs 10.5%) means about another 1.3 bu/A for every 100 bu marketed. For a hundred acres of wheat at a yield of 100 bu/A it's another 130 bu equivalents that you market. With a local price of \$2.65 per bushel that's an increased gross return for the hundred acres of about \$344. The return for a 3% moisture difference (9% moisture) or 4.5% moisture difference (7.5% moisture), with the same assumptions, is \$688 or \$1032 for the hundred acres.

Don't expect your local elevator to pay you on a moisture corrected basis anytime soon unless they in turn can be compensated for the equivalent bushels they market. But this change is something you can work toward through your local and state grain producer associations.

Marketing Advantage

Until such time as we can market our wheat on a moisture corrected basis, perhaps we should more actively tout the advantage of our low moisture wheat as compared to the wheat of our competitors at home and abroad. If our drier wheat is inherently more valuable it seems that we should be using that to our advantage in marketing our wheat? It is not clear to what extent that information is used in marketing our PNW wheat either domestically or abroad.

As compared to the cleanliness issue it would seem at least equally important. Our customers seem awfully concerned about and don't hesitate to remind us of the nonmillable product levels of 1.3% in our wheat. You'd think they would be just as interested in getting 2% more millable product (on a weight basis) than some of our competitors can provide without additional drying. This assumes of course that our exported wheat is not adulterated by the illegal practice of adding moisture.

Straw Management with Limited Moisture

Irrigation water supplies from many districts may be either limited or altogether unavailable from early shutoffs. What implications if any are there for small grain residue management?

Without irrigation to germinate grain left in the field, the grain may be considerably later in volunteering. Though unlikely, it could conceivably not volunteer until mid to late fall. Late volunteering grain probably is not a significant issue for our system. Granted, it may be useful to incorporate additional fresh organic matter but the amount of organic matter involved is typically not appreciable depending on the emergence date, growing conditions provided, and when it is incorporated.

Dry soils are biologically inactive soils. Dry soil conditions effectively limit residue decomposition and cooler soil temperatures in late fall are less conducive for decomposition. That means more residue to contend with in subsequent operations such as seed bed preparation and planting.

The delay in decomposition can also affect N availability to subsequent crops. Normally with early residue incorporation and sufficient moisture, decomposition begins immediately as do the competing processes of microbial N utilization (immobilization, decreased available N) and N mineralization (increased available N). The net effect for small grain residues is a reduction in available N for subsequent crops. If this process is

largely completed by spring there is less influence on the next crop and lower fertilizer N rates are required to compensate for the residues.

Plowing these dry soils will be an issue. It will entail greater fuel costs and depth of plowing may not be as uniform as usual.

Straw Removal

Given the implications for residue management in dry soils, producers may want to consider removing some of the residue as straw. The advantages include (1) less tillage required for incorporating remaining residues (2) less fertilizer N required to compensate for N immobilization and (3) increased income from straw marketing.

Our measurements indicate that roughly 1.2 lbs of above ground residues remain in the field for each pound of grain removed. Wheat yields of 120 bu/A at 10% moisture result in about 3.9 tons of dry residue remaining, not all of which is recoverable. Baling half the remaining residue provides nearly two tons of straw per acre to market. Recovery depends on cutting height and other factors.

Nearby feeding or dairy operations may provide excellent opportunities to market straw for bedding. In addition there is a market for certified weed free straw for use in public forests by packers or for re-vegetating or stabilizing soils affected by fire.

With late season drought conditions there may be increased demand for straw as an emergency forage. Ammoniated straw with higher protein, disrupted fiber and greater digestibility has increased feed value.

If you will have straw stocks available you may want to list those on an electronic clearing house for forage supplies and needs available at <http://www.ag.uidaho.edu/pasture/>. The website address may suggest that only pasture resources are listed but I've been assured that straw can also be listed. Those with straw or in need of straw can list that information by contacting your local Cooperative Extension Educator, or Wilson Gray, the website Coordinator and Extension Ag Economist at 208-736-3622, or at

pasturelist@uidaho.edu, or enter the information themselves on the interactive website.

Most producers have traditionally returned small grain residues to the soil to maintain soil productivity for other crops in the rotation. Occasionally removing a portion of the residues as straw is not likely to have measurable long term effects in our production system. In addition to the non-recoverable half of the above ground residues there is the root system (10-20% of the total weight) that remains as well. Furthermore, the value of small grains in the rotation comes not so much from residues returned as from the increased control of diseases and other pests (weeds, insects etc) that reduce the productivity of other crops in the rotation.

Marketing straw makes economic sense from fields where there are appreciable residues, where no water is available following harvest, when fuel and N costs are high, and demand for straw is up due to increased needs for bedding or emergency forages.

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Southwest Idaho Extension Cereals Website

Previous issues of the *Cereal Sentinel* newsletter back to 1996 can be viewed as PDF files on the Southwest Idaho Extension Cereals Homepage at <http://agweb.ag.uidaho.edu/SWIdaho>. If you would like to receive the *Cereal Sentinel* newsletters electronically, rather than the hard copy through the mail, send an e-mail message to me at bradb@uidaho.edu. The advantage for us is that we don't need to produce a hard copy and put it in the mail to you. The website is still under development but the content is considerably expanded from the initial website published in June 2000. If you have suggestions for the website send them to me at bradb@uidaho.edu.

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