



The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

June 18, 1997

Issue No. 13



Contents

Cereal Leaf Beetle	2	New Test Weight Conversion	5
Barley Stripe Rust	2	PNW Soft White Wheat	5
Russian Wheat Aphid	3	--US Consumption	
Wheat Streak Mosaic.	3	Whopping Production!!	6
In Spring Cereals???		Wheat Protein	6
Leaf Spot	3	Dockage Update	7
Final Irrigation	4	The Cereal Sentinel	7
Malting Barley	4	Producer Stocks	8
Moisture Based Prices?	5		

Important Dates:

June 19 th	Midvale Dryland Wheat Tour
June 26 th	Weiser Irrigated Cereal Tour
July 1 st	Mtn Home Late Planted Winter Cereal Tour
July 2 nd	Kuna Irrigated Spring Cereal Tour
July 10	Parma Field Day

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) (Fax-208-722-6708) (Email bradb@UIDAHO.EDU)**

Brad Brown

Brad Brown,
Extension Crop Management Specialist

Cereal Leaf Beetle

A new insect pest on small grains, the **Cereal Leaf Beetle**, has arrived in western Idaho. It comes to us from North Central Utah. It was first detected in Idaho in Franklin County but is now in several southern Idaho counties as well as the northern most county in the state.

Western Idaho had avoided this pest for many years. We knew it was only time before it reached the Treasure Valley. Sure enough, it was finally reported in Ada County in the 1996 season. We have seen additional fields infested this spring in western Ada county and some in eastern Canyon County. Now that it's here we can expect the beetle to be a potential perennial pest.

The favored hosts are spring planted cereals, especially oats and barley. It can also feed on forage grasses. Most of the feeding on leaves is done by the larvae. The larvae are yellow to yellowish brown but they cover themselves with a mass of dark, slimy, fecal material for protection. The slime is easily shed and comes off readily on pant legs.

Larval feeding is unique. They feed only on the upper leaf surface or mesophyll cells, and between the leaf veins. Several adjoining interveinal areas may be affected. Thus, the feeding is concentrated rather than dispersed. The feeding surface has lost its chlorophyll filled mesophyll cells and appears to be frosted.

There is only one generation per year. The larvae we found in late May were already at the 4th instar stage and will soon drop to the ground and pupate. Most of the damage has already been done so it's pointless to try to control them now.

The economic threshold prior to the boot stage is three larvae per plant, including all the tillers of the plant. After the boot stage the threshold is one larvae per flag leaf.

If control is required, consult the current edition of the *Pacific Northwest Insect Control Handbook*. (available from Ag Publications 208-885-7982 or your local Cooperative Extension Office). For more details about the pest consider ordering **The Cereal Leaf Beetle - A New Pest In Idaho, CIS 994**, also from Ag Publications. The written text of this publication can also be downloaded from the **Resources for Idaho Catalog** of the University of Idaho Cooperative Extension System web site (<http://www.uidaho.edu/ag/extension/>).

There is a California quarantine on grain produced from infested areas. The Idaho Dept. of Agriculture (208-332-8620) has a list of infested Idaho counties. California is the only state that quarantines our production. There is apparently little justification for this quarantine. The adults have not been found on harvested grain based on the Idaho surveys conducted. They are far more likely to occur on hay, which is now exempted from the quarantine.

The **Cereal Leaf Beetle** is susceptible to biological control. Several parasitic wasps were introduced into Franklin County and the beetle has not been evident for a couple years.

The parasites can move with the spread of the beetle. Several of the larvae collected in western Ada County were sent to the USDA Cereal Leaf Beetle Laboratory in Michigan to determine whether they were parasitized. They weren't.

Mike Cooper, Idaho Dept. of Agriculture, with the cooperation of Dr. J. B Karren, Utah State University, released larval parasites in the Meridian area June 13. It was a bit late this year to introduce the parasites, but hopefully the parasites will find enough larvae to survive until next year when more parasites will be released.

If you suspect **Cereal Leaf Beetle** in your fields, contact your local Cooperative Extension educator to confirm the find so that areas can be mapped for the parasite introduction next spring.

Barley Stripe Rust

Barley stripe rust was present in the Treasure Valley in the 1996 season. Fortunately, it caused little economic loss as the infection levels were generally very light. It also helped that the infection occurred later in the season.

Barley stripe rust was wide spread this spring in California's fall planted barley. It was also reported in the Willamette Valley and Western Oregon this spring. Prevailing westerly or northwesterly winds from the coast would normally bring inoculum to our area, but thus far there are no reports of *barley stripe rust* east of the Cascades.

With most of our barley fully headed and the winter barley practically done, it is not likely to be a factor in this year's western Idaho production.

Variety resistance is confined to a limited number of advanced lines. Several of these advanced lines are currently being evaluated in the Cooperative Extension Performance Trials in western Idaho. They can be viewed during the cereal tour at the Parma Field Day on July 10.

Russian Wheat Aphid

We have seen some Russian Wheat aphids in isolated spring plantings. Only the very latest of the plantings would have merited attempts to control.

The *Idaho Aphid Flyer* reported only one winged Russian Wheat aphid in the suction trap at Parma for samples collected May 16 and 23. It appears we've dodged this bullet again.

Meanwhile, advanced lines of spring wheat with Russian Wheat aphid resistance were included in Cooperative Extension Spring Variety Performance Trials. These lines can be viewed during the Cereal Tour at the Parma Station Field Day July 10.

Wheat Streak Mosaic in Spring Cereals???

Wheat Streak Mosaic Virus has been positively identified in western Idaho **spring** cereal plantings. Dr. Robert Forster, Extension Plant Pathologist at Kimberly, received the diseased samples from the Nampa/Kuna area.

Wheat Streak Mosaic Virus is not uncommon in western Idaho. But it generally occurs in early fall (mid to late September) planted winter wheat or barley. The vector, the Wheat Curl Mite, is generally present in early fall.

Spring cereal infections are unusual in that it requires the mite to over winter and be active during the colder temperatures of early spring. But it is not unheard of. Montana has had spring cereal infections in the past.

The biology of the Wheat Curl Mite is not completely understood. Why it would be active in some springs and not others is not entirely clear.

There's no effective treatment after plants are infected with the virus. To prevent vector feeding and plant infection you can control the vector's host plants.

The mite feeds on young grasses or cereal plants so getting rid of volunteering small grains as soon as possible after emergence, as well as other grasses that neighbor soon to be planted fields is helpful. But the mite is also wind borne making controlling difficult.

The mite can generally be avoided in fall planted wheat by delaying the planting until cooler temperatures prevail and mite activity is reduced.

But delayed plantings of winter wheat also reduce yield potential of wheat. Delaying winter wheat planting from mid October to mid November reduced yield from 4 to 20% in our trials at the Parma Research and Extension Center.

The yield is limited in later plantings due to (1) less tillering and fewer heads, (2) higher and less favorable temperatures during grain filling, and (3) more pressure from late spring aphids and diseases.

The presence of the mite is difficult to predict. Early October plantings normally avoid the Wheat Curl Mite as well as other insect vectors carrying cereal viruses. Spring infections are unusual and do not represent sufficient risk that we should try to control the vector with insecticides without scouting and determining what the populations are.

Leaf Spot

Wheat

Leaf spotting in winter wheat is prevalent in many areas again this spring. As usual, the spotting is most severe in the Stephens variety. Not all areas of western Idaho have been surveyed. But flag leaves with the scattered light speckled appearance were evident in the Meridian-Eagle area, areas of Canyon, Washington, Gem and Elmore counties.

This leaf spot is reported to be related to a shortage of chloride (Cl) in the plant. The malady has been called *Cl deficient leaf spot syndrome* by Dr. R. E. Engle, Montana State University. We are currently evaluating whether early season applied Cl can alleviate these symptoms and improve yield.

Barley

Leaf spotting is also evident in some spring and winter barley, at least in the Weiser area. The spotting is dark brown, predominantly along leaf margins and tips. It is unclear why this leaf spotting is present, as it does not resemble the leaf spot on wheat and occurs

where no leaf spot on wheat is present. Like the leaf spot in wheat, it is not associated with a pathogen.

Final Irrigation

I receive more June calls on this topic than any other. Some growers hope to avoid the costs associated with pumping and pressurizing a sprinkler system one more time. Others have heads above the sprinkler nozzle which influences the wetting pattern and causes uneven watering. Plants around the sprinkler head may lodge with the excessive moisture and yields and or quality are reduced. Others don't like the hassle of moving lines through wheat or barley that's achieved full height and growth.

Winter wheat in western Idaho is quickly approaching that point when additional watering will do more harm than good. All fall planted cereals are earlier this year due to well above normal temperatures December through May (Figure 1). Spring cereals also are earlier. Winter barley is essentially done and should not be watered again for purposes of increasing yield.

Applying water later than needed contributes to lodging and all its negative connotations: slower more costly combining, higher dockage and discounted prices, higher black tip incidence, and lower yields. In short, less return for the grower.

Avoid watering later than necessary. When the grain chaff begins to turn from green to yellow its time to stop irrigating. Additional water has no affect on

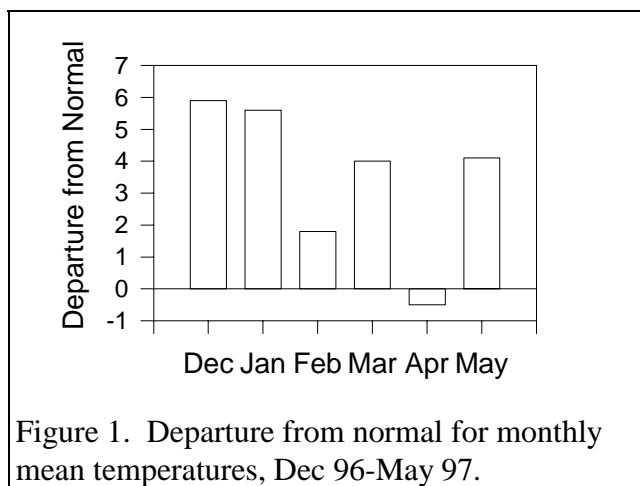


Figure 1. Departure from normal for monthly mean temperatures, Dec 96-May 97.

yield and adversely affects quality.

Moisture use by wheat at this point is rapidly dropping off. Moreover, the grain is essentially made, and the plant is quite insensitive to stress. We may even

lose dry matter from the grain (reduce yield) if the additional moisture increases respiration (loss of CO₂) from the kernel.

Incurring unnecessary irrigation costs together with the reduced income from lower prices or yield can rob producers of any profit. We need to be as competitive as possible to survive the lower prices that this year and the future are likely to bring.

Malting Barley

There is a small acreage of contracted **Harrington** malting barley in western Idaho for the 1997 harvest. The acreage was contracted on a small scale to determine its feasibility. **Harrington** is the only contracted malting barley variety that was planted.

We viewed the contracted acreage in the Weiser, Payette, and Gem county areas with the contractor. This barley was planted under a variety of conditions. Some was planted early and will be reasonably productive. Some was planted late after spring flooding and land leveling and this will undoubtedly be less productive. There is also some planted under dryland conditions.

Some fields were broadcast seeded and had barley that had emerged early and also barley that had emerged later with more adequate moisture. Different emergence will result in different maturities. The later maturing barley will likely be less productive.

The diverse conditions should provide a good test of the potential for producing acceptable malting barley of this variety in our area. We should also be able to use this year's information to identify those production practices essential for both good yields and quality.

You may recall from the last *Cereal Sentinel* that Adolph Coors had also advertised **Galena** malting barley seed for production in our area. This was not contracted acreage, but Coors did retain the right to buy for malting if they needed it. If they didn't exercise their option to use for malting the barley was to be sold for feed. Apparently there was very little **Galena** seed sold in our area.

Moisture Based Prices?

The Kansas Association of Wheat Growers is proposing that wheat be marketed on a moisture corrected basis. This would allow wheat to be traded on an “equivalent bushel” basis. The proposal is to be discussed at the National Association of Wheat Growers Summer Board Meeting in Portland.

This is a positive development for Idaho and other PNW wheat producers. PNW wheat typically is 2 to 3% lower in moisture than Midwest, southern US and Canadian wheat. Converting our drier wheat to any moisture based standard would provide PNW producers a market advantage as compared to our midwestern and southern brethren.

This should also address the current reality that adding moisture to grain results in greater weight and payment to the seller. Those adding moisture to their grain, ostensibly for dust control, will no longer reap the advantage of marketing the extra weight of moisture added. The added moisture provides no advantage to the miller and end user of the wheat.

What is the difference? Using a 12% moisture corrected basis, 1000 bu of delivered wheat with 10.5% moisture would be converted to 1013 bu and delivered at 9% would mean 1027 bu. For the state it means about another 1.36 million bushels of wheat to market (assuming delivered at 10.5 % moisture).

PNW hard red wheat producers took it on the chin with the previous change of reporting wheat protein on a 12% moisture corrected basis. Our dry wheat was penalized under that change because protein was reported at lower values than we delivered on an “as is” basis. The result was higher discounts and reduced prices for producers.

Turn about is fair play. It only seems fair to market our production on a dry weight or moisture corrected basis rather than the “as is” basis of the past. If it’s good enough for calculating protein, then it’s good enough for marketing our production.

The **Idaho Grain Producers Association** and **Idaho Wheat Commission** can take much of the credit for this action. The Commission pointed out the advantages of this move for Idaho and the **Idaho Grain Producers Association** adopted the promotion of the move as their official policy. Idaho’s attempt to affect the change in the National Association of Wheat Growers policy was unsuccessful, but Kansas producers have resurrected the proposal. With a large wheat

producing state supporting the change, it is more likely to occur.

The change is not a done deal. The NAWG Board needs to adopt the change before the Federal Grain Inspection Service is likely to pursue the change. Stay tuned.

New Test Weight Conversion Proposed

The Federal Grain Inspection Service is proposing a change in the formula used to convert the English unit pounds per bushel to the metric unit kilograms per hectoliter (kg/hl) that some of our customers prefer

The change has to do with the factor used for the conversion. The new conversion will result in higher metric unit test weights. Instead of a conversion of 60 pound test weight to 77.22 kg/hl, the conversion will equate to 78.2 kg/hl.

PNW Soft White Wheat—US Consumption

It was apparent during the year that appreciable soft white wheat was moving east from Idaho to domestic mills in the Midwest and East. Marketing our wheat to the east, especially at the rates marketed, is somewhat unusual. Domestic consumption of PNW soft white wheat increased 300% during the 1996-97 marketing year. Estimated domestic use increased from 24 to 75 million bushels.

Soft white wheat from the PNW, primarily Idaho, was moved east to help satisfy the needs of eastern soft wheat millers when vomitoxin was found in much of the soft red winter wheat produced in the South and Southeast. Vomitoxin renders the wheat unsuitable for human consumption.

Vomitoxin is not a consistent problem for soft red wheat producers, and we should probably not count on such quantities moving to the east very often. Nevertheless, this market did allow us to introduce some southern Idaho wheat into a market that did not know our product very well.

Idaho is well positioned to take advantage of their continuing interest in soft white wheat. Therefore it behooves Idaho’s market development efforts not to lose

sight of the potential that domestic consumption has in some years for reducing burdensome Idaho soft white stocks. Overlooking the potential for domestic consumption is easy when 80-90% of your production typically moves west into export channels rather than east.

Tom Mick, formerly with the Oregon Wheat Commission, listed several advantages of soft white wheat over the soft red typically used in the Eastern market. They include:

- Lower moisture contents
- Higher test weight
- Fewer diseases such as vomitoxin
- Less sprout
- White bran (higher extraction rate or flour yield)
- Higher water absorption (the more water you can add the greater the profit)
- Availability of club wheat (with its unique quality)
- Consistency of production (primarily due to irrigation)
- Protein segregation (we can meet protein specs)
- Cleaner grain (less dockage)

Whopping Production!!

Southwestern Idaho produces some of the highest irrigated yields per acre of anywhere in the US. The 1996 average yield of irrigated winter wheat in the southwestern Idaho counties was 124.3 bu per acre. By comparison, south-central Idaho averaged 113.9 and eastern Idaho only 99.3 bu per acre.

In 1995, the southern Idaho districts averaged 112.3 for southwestern Idaho, 103.3 for south-central Idaho, and 100.7 bu/A for eastern Idaho.

Why are western Idaho yields better than other Idaho yields? We aren't entirely sure. Wheat has a greater opportunity to tiller and produce heads in western Idaho. We don't have nearly the winter kill, snow mold, frosted heads, diseases or pests that they seem to have, and our rotations are generally a bit longer. On the other hand we tend to be a little hotter during grain fill.

Canyon County had the highest average yield in Idaho for 1996 with a whopping 131.8 bu per acre. For a county average that is truly remarkable. According to the USDA Ag Statistical Reporting Service, this was the highest county average in the country, much less the state. Who was last year's nationwide county leader in

irrigated winter wheat production? Try Gem County, Idaho at 121.3, with Canyon County second at 120.3 bu per acre.

Average yields in Canyon County have ranged from 95 to 116 bu per acre during the 1983 to 1994 production seasons. The county average went up in 1995 to 120 bu per acre, and increased again in 1996 to almost 132 bu per acre.

The outstanding yields of 1996 are likely due to very mild December and January temperatures after the fall seeding in 1995. These mild temperatures allowed all planted wheat to emerge in the fall and tiller more than usual. The additional tillering resulted in more grain bearing heads and higher yields.

Grain yields might have been higher but for the higher temperatures during grain filling in June. Temperatures well over 85°F reduce the duration of filling.

The irrigated winter wheat yield prospects for the 1997 season are quite good. Temperatures during December and January were again well above normal (Fig. 1) and temperatures during June have not been excessive.

Why are our yields as good as they are. There's plenty of credit to share. Good soils, favorable climate, good rotations for a minimum of plant diseases or insect pests, excellent varieties, and sufficient management to realize most of the potential for yield in the varieties used.

Western Idaho yield averages are remarkable indeed. But this is not the time to rest on any laurels. They can be improved. Not everyone is using the most appropriate variety, or optimum fertilization. Planting dates, rates, and methods could be improved for many. Water management may be a limiting factor for others.

Finally, production is only one aspect of the enterprise, albeit an important one. To be competitive in today's and future world markets we need to be a least cost producer. Therefore maximizing the efficiency of our production should be our objective. That means getting the most from our management and inputs.

Wheat Protein

Wheat grain protein can be useful for indicating the effectiveness of our nitrogen management. High protein indicates excessive available nitrogen for the conditions during the season, and low protein suggests the opposite.

Low protein indicates that wheat production was limited due to a shortage of available N.

For example, Stephens with 9.5% protein represents a 15% loss of production due to inadequate nitrogen. Maximum production is associated with protein closer to 10.5%. Our spring wheats tend to be higher in protein than our winter wheats.

A convenient way to have your wheat protein tested is to request a protein determination from the sample collected for grade at the elevator. Protein can be reported with the grade certificate at the grower's request. It may or may not cost extra depending on where the sample is sent for the grade determination.

If you store your own wheat, sample enough loads from each field and combine them to create a composite sample for each field of interest. Each field's composite can then be sent to a certified grading facility.

As reported in the previous *Cereal Sentinel*, the **Idaho Wheat Commission** protein survey for western Idaho was disturbing. Over a third (37%) of our wheat had less than 9.5% protein in the 1996 season. At the other extreme, almost a third of producers (31%) marketed wheat with over 10.5% protein.

It suggests a third of our production was limited in yield by at least 15%. Another third was probably over fertilized. Can it be that two thirds of Western Idaho's production is under or over fertilized? Where does your production fit in?

Growers are encouraged to protein test their wheat this coming harvest to determine if fertilization practices can be improved for optimizing their returns.

Dockage Update

Dockage, the material other than the wheat grain that is easily removed during standard milling, will continue to be an issue for our producers. In the past two years the tolerances for dockage were reduced and the discounts increased. This proved to be expensive for some producers with discounts well over \$1 a bushel.

The situation appears to have improved somewhat since last year. The tolerances for dockage of some importing countries continues to go down, but that may not mean higher discounts for growers.

The discounts of the last two years have made a significant difference in the dockage levels of wheat

delivered. Dockage levels have declined in response to the higher discounts.

The discounts were designed to discourage high dockage because major exporters did not have the necessary cleaning equipment installed to clean wheat for export. Exporters met the increasingly stringent dockage tolerances by blending.

The difference this year is that exporters have apparently installed the cleaning equipment and plan to clean only the dirtiest wheat as needed, to insure meeting the dockage specifications of the importing country.

The USDA Economic Research Service estimated in earlier studies that these changes could result in benefits of \$8-\$10 million for the grain industry. The estimates were based on the assumption that only 20% of the wheat exported would need to be cleaned.

What does it mean for dockage discounts this season?. It's not clear. One industry source quoted by the **Capital Press** suggested that "once you put in a lot of capacity for cleaning, discounts will probably become less important." Whether that sentiment results in lower discounts remains to be seen. But that would certainly be in the growers best interest.

The Cereal Sentinel

Mailing List

The mailing list for *The Cereal Sentinel* is now over 3000 addresses. It's an expensive production what with printing, folding, stapling, labeling, sorting, and mailing. You can help reduce the cost by letting us know if you are receiving more than one copy of the newsletter. If you receive more than one or your address has changed, please let us know by phone, e-mail, or snail mail.

Please indicate the newsletter mailing list you want to change as there are several newsletters that originate from the Parma Research and Extension Center. If for some reason you don't need or want the newsletter, let us know and we will remove your name from the list.

Back Issues

For those that have interest in back issues of the newsletter, we can forward them to you. Simply contact me (722-6701 ext. 216, or e-mail bradb@uidaho.edu) and leave your name and full address.

Producer Stocks

Members of the **Idaho Grain Producers Association** should keep in mind their option of listing their stored grain stocks with the Association Office. With a listing of available member stocks and their characteristics, the Association will be better able to get potential buyers and sellers together.

You must be a member of the Association to list your stocks. For information contact Steve Johnson, Executive Director, **Idaho Grain Producers Association** (208-345-0706).

**COOPERATIVE EXTENSION SYSTEM
US DEPARTMENT OF AGRICULTURE
UNIVERSITY OF IDAHO
MOSCOW ID 83844-2338**

Return Address:

Parma Research & Extension Center
29603 U of I Lane
Parma ID 83660

Address Correction Requested
Please Forward

BULK RATE US Postage PAID Permit No. G-268 Parma ID 83660

AN EQUAL OPPORTUNITY EMPLOYER