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Tulelake Farm Advisor Update

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Strategies for Farming with Limited Water

By Rob Wilson, Tulelake Farm Advisor; Steve Orloff, Siskiyou Farm Advisor; Brian Charlton, OSU-KBREC Assistant Professor; & Rich Roseberg, OSU-KBREC Associate Professor

Given the uncertainty of water deliveries in 2010, here are some strategies to consider for optimizing profits with limited water supplies. Information contained in this article will address frequently asked questions and potential circumstances you may face this year. Monitoring crop water use and soil moisture is always important; however, it is even more critical during years of limited water deliveries. Knowing the status of available soil moisture is critical to make proper decisions on fertilizer inputs, harvest strategies, and pest management. If you're fortunate enough to have well water this year, monitoring crop water use can help you spread limited water supplies efficiently across all your fields. You don't want to over-apply water or irrigate too frequently when your crops don't need water and you don't want to under-apply water when your crops need water most.

Over-irrigating can exacerbate nutrient leaching and provides an ideal environment for fungal diseases. Likewise, moisture stress often leads to an increase in pest problems. Many growers may be tempted to skip pest control treatments this year in an effort to lower input costs. Unless yield is so low you don't plan to harvest the crop, this is usually a mistake that will result in yield and quality losses that exceed the cost of treatment.

In alfalfa, weeds consume spring soil moisture quickly- moisture that would otherwise be available for the first cutting of alfalfa. Weeds also decrease hay quality and produce seeds that will persist for the rest of the stand's life. In wheat and barley, studies have shown weeds can decrease dryland grain yields by 25% to 50%. Insect pests can also be worse in a moisture stressed field, so regularly monitoring pest populations and treating according to established economic thresholds is recommended.

Small Grains

- Wheat and barley varieties differ significantly in their yield potential under limited moisture conditions, thus it is good idea to check with your local seed supplier for variety performance under deficit irrigation or dryland conditions. Typically, early maturing varieties will yield more than late maturing varieties when grown under limited soil moisture.
- Consider reducing your seeding rate by 25% if you cannot irrigate. In University trials conducted in the Central Valley of California, wheat and barley grown in drought years produced similar yields when seeded at rates between 90 and 150 lbs/acre.
- Consider harvesting small grains for hay if soil moisture is not adequate for grain fill. Planting a dual purpose variety provides more

flexibility for deciding whether to harvest for hay or grain later in the season when crop status and irrigation availability are better known. If soil moisture is not adequate through grain development, grain yield and quality decrease rapidly. Moisture stress prior to the soft dough stage will result in small, shriveled kernels. Harvesting grain forage at the soft dough stage typically maximizes hay yields.

- Apply nitrogen in split-applications. Apply some nitrogen at planting and then top-dress additional nitrogen as needed later in the growing season. If the soil has residual nitrogen from the preceding crop, nitrogen applied at planting is probably not needed. If water is short, you may only need the nitrogen applied at planting. If it's a wet spring, you can always top-dress additional nitrogen on the field to increase yield potential.

Alfalfa

- Focus on maximizing first-cutting yield if irrigation is limited. Residual soil moisture, potential spring rainfall, and mild spring temperatures often result in a respectable first-cutting yield in the Klamath Basin under dryland conditions. First cutting typically has the highest yield and better quality compared to mid-summer hay so focusing limited water resources on this cutting makes the most sense. Alfalfa will go into a 'drought-induced' dormancy if the soil is dry after 1st cutting. This dormancy state helps prevent plant death; however, alfalfa is very slow to re-grow from dormancy if water is applied to the field later in the season. In most cases, drought-stressed alfalfa will remain dormant until fall and produce little forage during the summer.

- Regularly scout for alfalfa weevil and cowpea aphid this year. In dry years, insect pests are often problematic, and it's best to be proactive when treatment is needed.

Vegetable Crops

- Vegetables producers have few choices in a dry year except to limit production acres to fields with full-season irrigation. Potatoes and onions are very sensitive to drought-stress, and yield and quality plummet with inadequate irrigation.

Cover Crops

- Cover crops can help reduce soil erosion, suppress weeds, and enhance soil health, but they require adequate soil moisture at planting. Cover crops also require production costs that should be taken into consideration such as seed, tillage, and planting costs. If you plan to grow a cover crop without irrigation, it's best to plant a cool-season variety in fall or early spring to take advantage of spring precipitation and cooler temperatures. Dryland cover crops that have performed well in University trials include mustards, small grains, field peas, and vetches. See the article on page 3 for results from a cover crop trial planted at KBREC in 2001.

- If water becomes available in mid-summer, plant a summer annual such as sudangrass or teff that grows quickly in the mid-summer heat.

- A cheap option to consider is to let weeds serve as the cover crop. Letting winter annual weeds grow until they are 6 to 12 inches tall and then spraying them with a herbicide can help prevent soil erosion. This approach also depletes shallow soil moisture which can prevent summer weed growth. It is IMPORTANT to kill the weeds before they flower and produce viable seed. Otherwise, this is not a recommended practice.

Spring Establishment of Small Grains as Dryland Cover Crops

By Brian Charlton, OSU-KBREC Assistant Professor

Several small grain cereal types were established in mid-April during the 2001 growing season at the Klamath Basin Research & Extension Center. Forage yield and quality along with grain yield were collected under dryland conditions. Spring soil moisture conditions in 2001 were very similar to current conditions. Wind events caused considerable topsoil erosion in mid-April 2001 and were severe enough to cause vehicle accidents on Highway 97 just north of Klamath Falls.

The main objective of the trial was to establish ground cover to prevent soil erosion throughout the growing season in the absence of applied irrigation and fertilizer. As expected, the top 2 inches of topsoil were extremely dry which required seeding depths of 2-3 inches to reach sufficient moisture. Soil samples were not collected prior to seeding; however, soil samples taken the following spring (2002) suggest phosphorus, potassium, and sulfur were all in sufficiency ranges with nitrogen being relatively low.

An AgriMet weather station located at KBREC recorded 1.71 inches of total precipitation which included 0.57 inches 2 days after seeding and an additional 0.64 inches during the first 4 weeks after seeding. Thirteen frosts occurred during the trial including 3 days below 26°F. As expected, leaf burning and stand reductions were observed. Yield and quality data are provided in the following tables. Access the following web address for the full report http://oregonstate.edu/dept/kbrec/sites/default/files/documents/ag/ar01chpt06.pdf. For information on performance of various small grains at different seeding rates under dryland conditions on organic soils visit the following web address http://oregonstate.edu/dept/kbrec/sites/default/files/documents/ag/ar01chpt08.pdf.

Table 1. Plant stands, cover crop height, and forage yield of eight cereal varieties 9 and 11 weeks after seeding (WAS) and height and forage yield of regrowth 11 weeks after seeding and 2 weeks after initial cutting at Klamath Falls, OR, 2001.

	9 WAS			11 WAS		Regrowth	
Type and (Variety)	Number	Height	Yield	Height	Yield	Height	Yield
	plant/ft^2	in	lb/acre	in	lb/acre	in	lb/acre
Facultative triticale (Trical 2700)	22 bc[1]	21 ab	5260 a	36 a	8660 a	15 a	270 c
Spring barley (Xena)	25 bc	23 a	3820 b	24 b	5950 a	10 ab	270 c
Spring oats (Cayuse)	14 d	19 abc	2670 cd	22 b	5930 a	7 b	480 b
Facultative barley (Sprinter)	29 ab	16 c	3120 bc	15 c	5850 a	11 ab	570 ab
Spring hooded wheat (Twin)	33 a	18 bc	3640 b	20 b	5530 ab	9 b	680 a
Winter rye (Common)	25 bc	11 d	2230 de	10 d	2890 bc	---	---
Winter triticale (102)	28 ab	8 d	1800 de	10 d	2540 c	---	---
Winter wheat (Stephens)	18 cd	9 d	2100 de	9 d	2160 c	---	---
Mean	24	16	3080	19	4890	10	460
CV (%)	19	15	14	13	32	26	18
LSD (0.05)	8	4	730	4	2760	5	160

[1]Values within columns followed by the same letter are not significantly different (p = 0.05).

Table 2. Cover crop forage quality of eight cereal varieties as acid detergent fiber (ADF), neutral detergent fiber (NDF), crude protein (CP), total digestible nutrients (TDN), and relative feed value (RFV) from cuttings 11 weeks after seeding at Klamath Falls, OR, 2001.

Type and (Variety)	ADF	NDF	CP	TDN	RFV
	%	%	%	%	
Winter wheat (Stephens)	23 a[1]	41 a	20 a	59 a	164 a
Winter rye (Common)	23 ab	42 a	17 bc	59 ab	157 a
Winter triticale (102)	23 ab	43 a	19 ab	59 abc	155 a
Facultative barley (Sprinter)	27 bc	50 b	15 cd	56 bcd	129 b
Spring barley (Xena)	27 bc	50 b	13 d	56 cd	128 b
Spring oats (Cayuse)	30 cd	53 bc	16 cd	54 de	116 bc
Spring Hooded Wheat (Twin)	30 cd	53 bc	15 cd	54 de	115 bc
Facultative triticale (Trical 2700)	34 d	58 c	14 cd	52 e	101 c
Mean	27	49	16	56	133
CV (%)	9	6	11	3	10
LSD (0.05)	4	5	3	3	22

[1]Values within columns followed by the same letter are not significantly different (p = 0.05).

Table 3. Cover crop grain yields and grain quality of eight cereal varieties grown at Klamath Falls, OR, 2001.

Type and (Variety)	Yield	Test weight	-----% above sieve-----		
			6/64	5.5/64	pan
	lb/acre	lb/bu			
Facultative triticale (Trical 2700)	1900 a[1]	54.5	---	---	---
Spring oats (Cayuse)	1670 ab	41.0	---	---	---
Spring barley (Xena)	1490 b	53.5	73	19	8
Spring hooded wheat (Twin)	1320 b	60.5	---	---	---
Facultative barley (Sprinter)	930 c	46.5	85	10	5
Winter triticale (102)	---	---	---	---	---
Winter rye (Common)	---	---	---	---	---
Winter wheat (Stephens)	---	---	---	---	---
Mean	1465	51.2	79	15	7
CV (%)	14	---	---	---	---
LSD (0.05)	370	---	---	---	---

[1]Values within a column followed by the same letter are not significantly different (p = 0.05).

The Potential of Growing Oilseeds with Reduced Irrigation

By Rich Roseberg, OSU-KBREC Associate Professor

In recent years interest has increased in oilseed crops, primarily as a raw material source to produce biodiesel. A few commercial fields of canola have been grown in the Klamath Basin in recent years, and one commercial biodiesel facility is in operation. Another oilseed crop, camelina, has gained interest, especially in the western US. Approximately 20,000 acres of camelina have been grown in Montana in recent years under dryland (rainfed) conditions, and a few commercial dryland fields have been planted in the Rogue Valley, Columbia Basin, and Central Oregon. Research at Oregon State University and University of Idaho show that yield potential of camelina is less than canola under favorable conditions, but camelina is touted as being much hardier than canola, supposedly requiring less fertilizer and water.

How do camelina and canola perform under reduced irrigation in the Klamath Basin? KBREC tested canola and camelina under reduced irrigation conditions in 2007, 2008 and 2009 in mineral soil. In 2007, the average seed yield of 19 canola and mustard varieties was only 5% lower (2460 vs 2590 lb/ac) when grown with 13.6 inches of irrigation compared to full irrigation with 19.7 inches. In contrast, camelina grown under the same conditions in 2007 produced a yield that was 45% less under reduced irrigation (1393 vs 2547 lb/ac).

In 2008, we increased the moisture stress and the results changed. Eight of the same canola and mustard varieties had a 45% lower seed yield under 10.8 inches of irrigation than they did under 13.8 inches of irrigation (911 vs 1647 lb/ac), even though late spring rainfall was somewhat greater in 2008 than 2007. In 2008, camelina had a 44% yield reduction under reduced irrigation (577 vs 1025 lb/ac), a yield reduction similar to 2007.

In 2009, we tested the interaction of planting date and irrigation rate on camelina seed yield, thinking that earlier spring planting could perhaps take advantage of spring rains in reduced irrigation conditions. Drought stress was increased again, as the highest irrigation rate was only 7.7 inches, although we received 4.5 inches of rain (double the rain as in the previous two years). The yields overall were lower in 2009 (ranging from 310 to 761 lb/ac for the 9 planting date by irrigation rate combinations), but even so planting date had a big effect on yield. Camelina planted on April 16 had only a slight yield reduction at the lowest irrigation rate, but camelina yield was 33% less when planted on May 8, and 42% less on May 29, compared to the highest irrigation rate. Thus, camelina yield was reduced by the higher moisture stress, but this effect was reduced if planted by mid-April.

Caution: In these studies the low irrigation rate treatments continued to receive irrigation water throughout the growing season, just at a lower rate. Neither canola nor camelina have been tested at KBREC under completely dryland conditions. The minimal yield reduction of canola under reduced irrigation in 2007 has not been observed again. In general these results show a dramatic decrease in both canola and camelina seed yield when moisture is limited, although the 2009 results suggest that early planting may reduce these negative effects, at least for camelina.

Klamath Basin Beekeeper Meeting

The Klamath Basin Beekeepers Association is a new group formed to provide information, assistance, and a bit of socializing for anyone interested in keeping bees.

When: April 24th at 9 am

Where: OSU Klamath Research and Extension Center, 3328 Vandenberg Rd, Klamath Falls

Beginners Class starts at 10:30 am for hands-on training on beehive manipulation

Gopher Control

By Steve Orloff, Siskiyou Farm Advisor

Pocket gophers are a major nuisance in most agricultural crops. They are especially troublesome in alfalfa, which is ideal gopher habitat. It is difficult to quantify how much damage gophers actually cause, but there is no question their feeding on alfalfa roots lowers yield and ultimately reduces alfalfa stand density. Their mounds also damage harvest equipment.

The name pocket gopher comes from the large, external fur lined pouches they have in their cheeks. Gophers spend nearly all their time below ground in complex burrow systems. Their burrows can cover an area from a few hundred square feet up to more than 1,000 square feet. Tunnels are usually 8-12 inches deep—usually deeper in sandy soils than in clay soils.

Gopher mounds are especially visible in the spring while there is minimal crop growth. For that reason, now is a good time to treat. In addition, gophers breed in early spring so controlling them now before the young are born is advantageous. Gophers in Northeast California are believed to have one to two litters per year with 3 – 6 young per litter. Gophers do not hibernate and are active all year.

Gopher control can be frustrating to say the least. No control measure is completely effective. Therefore, my preference is to integrate several different control measures into an overall gopher control strategy. The primary approved gopher control strategies in California are shown in the table below.

Control Measure	Rodenticide	Comments
Hand-baiting	Strychnine-treated grain, zinc phosphide baits and anticoagulant baits	Useful for small isolated infestations. Strychnine-treated grain is still most effective
Mechanical baiting	Strychnine-treated grain	Effective for widespread infestations. Proper soil moisture critical to form proper burrow with burrow builder (Gopher machine)
Trapping		Effective but time consuming. Best for moderate to low infestations
Exploding device		Most tests have found these devises to be only marginally effective on gophers and typically not worth the effort.
Fumigation	Aluminum phosphide (Phostoxin or Fumitoxin)	Very effective treatment but Category I pesticide and extreme caution must be used during application.

Personally, I think the key to managing gophers is to aggressively treat new fields when gophers first start to invade. Once a field becomes even moderately infested it is extremely difficult to get the upper hand on the population. Aggressively treating gophers in young fields when the gophers first start to appear can delay the rate of invasion.

Trapping is an effective way to control low gopher populations, especially as they invade new fields. A new trap called the Gophinator was developed, but its performance compared with other traps was not known. In cooperation with Roger Baldwin (UC IPM Wildlife Pest Management Advisor) and other Farm Advisors throughout California, we set up a series of trials to:

- compare the effectiveness of the Gophinator trap with the most popular gopher trap (Macabee gopher trap),
- compare capture success of covered and uncovered trapping methods
- determine whether trapping season influenced capture success.

Trapping studies were conducted at 4 sites in the Intermountain area (Shasta Valley, Tulelake and Fall River), 6 sites in the Central Valley and 2 sites in San Diego Co. We saw essentially no difference in capture rate whether the hole was covered or left open after the traps are set so it is not worth the extra time required to cover the traps. We also observed no difference in capture rates between trapping conducted in Spring/Early Summer and Fall seasons. Either timing worked well. I would encourage spring trapping before the young are born and follow up trapping as mounds appear regardless of season. The Gophinator trap resulted in a higher number of captures (overall average of 57% capture success) compared with the Macabee trap (overall average of 39% capture success) primarily due to the Gophinator trap's ability to capture large gophers. Growers wishing to purchase either type of trap can find them at local farm supply stores or on the internet by typing the trap name into a Google or whichever search engine you prefer.

Commonly used gopher traps. The upper trap is a Macabee and the bottom trap is a Gophinator.

Alfalfa Variety Selection

By Steve Orloff, Siskiyou Farm Advisor

Alfalfa variety selection is a critical decision growers face every time they plant a new stand. It is a decision that should not be taken lightly. Most alfalfa varieties do not look much different visually—in fact they are difficult to tell apart in the field even when planted next to each other. However, there are large differences in yield between alfalfa varieties. We conducted alfalfa variety trials in Scott Valley (at the Hanna Ranch) and at the Intermountain Research and Extension Center (IREC) in Tulelake to compare the performance of both released and experimental varieties of alfalfa. In these trials the yield difference between the top and bottom varieties averaged 1.8, 1.0, and 1.6 tons per acre per year for the IREC trials (planted in 2007 and 2004) and Scott Valley trials, respectively. Even at today's low hay prices this is a significant amount of money over the life of a stand. Alfalfa stands typically remain in production a minimum of 6 years in the Intermountain area. Assuming a stand life of 6 years and hay prices of $100 tons, that yield difference equates to between $600 and $1080 per acre over the life of the stand between the top and bottom varieties. The comparison for growers is usually not between the top variety and the very bottom variety (growers usually do not select the very bottom variety unless you are still planting Vernal) but it is easy to see that yield differences can equate to a lot of money over the life of a stand even between varieties closer to the "middle of the pack".

When selecting a variety, avoid focusing in on just the single "top" yielding variety in a trial. I would suggest making your selection from the top yielding group (top third or so) in the trial. Consider local experience if there is a track record for how a variety has performed. In addition to yield, pest resistance is a critical consideration. In the intermountain area, select varieties that have resistance to bacterial wilt, verticillium wilt, fusarium wilt, phytophthora root rot, pea aphid, stem nematode and root knot nematode. Stem nematode resistance is becoming more and more important in the Scott and Shasta Valleys and less important in Butte Valley and Tulelake (although stem nematode has been detected in both those areas as well). Fortunately, through plant breeding efforts most of the newer varieties have resistance to these pests. A complete listing of all the certified alfalfa varieties and their fall dormancy rating and pest resistance rating can be found at the following website: http://www.alfalfa.org/pdf/NAFA%2007-08%20Varieties%20Leaflet.pdf This leaflet is very useful and all alfalfa growers and seed salesmen should have a copy.

TABLE 1. 2006-2009 YIELDS, UC SCOTT VALLEY ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 5/04/06

		2006 Yield		2007 Yield		2008 Yield		2009 Yield		Average			% of Vernal
	FD	Dry t/a											%
Integra 8400	4	4.6	(21)	9.1	(1)	8.8	(1)	8.9	(1)	7.8	(1)	A	127.0
Xtra-3	4	5.5	(1)	8.7	(2)	8.0	(13)	8.4	(4)	7.7	(2)	A B	124.1
PGI 459	4	4.7	(15)	8.4	(6)	8.7	(2)	8.5	(3)	7.6	(3)	A B C	123.1
Rebound 5.0	4	4.8	(12)	8.4	(7)	8.7	(4)	8.4	(5)	7.6	(4)	A B C D	122.4
GrandStand	4	4.2	(30)	8.4	(9)	8.6	(5)	8.8	(2)	7.5	(5)	A B C D E	121.6
Dura 512	5	4.9	(6)	8.4	(11)	8.7	(3)	7.7	(17)	7.4	(6)	B C D E F	120.3
FSG 505	5	4.6	(19)	8.6	(3)	8.3	(7)	8.1	(7)	7.4	(7)	B C D E F G	120.1
DS417	4	5.3	(2)	8.4	(8)	8.0	(17)	7.9	(9)	7.4	(8)	B C D E F G	120.0
MasterPiece	4	4.8	(11)	8.6	(4)	8.0	(14)	7.8	(13)	7.3	(9)	C D E F G H	118.5
Masterpiece	4	4.7	(17)	8.3	(14)	8.3	(6)	7.9	(10)	7.3	(10)	C D E F G H	118.2
Boulder	5	4.6	(22)	8.4	(13)	7.9	(20)	8.2	(6)	7.3	(11)	C D E F G H I	117.8
WL 357HQ	5	4.9	(5)	8.2	(21)	7.8	(24)	7.9	(8)	7.2	(12)	D E F G H I J	117.0
AmeriStand 407TQ	4	4.4	(27)	8.3	(17)	8.2	(8)	7.9	(11)	7.2	(13)	E F G H I J K	116.3
Mountaineer 2.0	5	4.8	(10)	8.4	(12)	8.0	(16)	7.5	(21)	7.2	(14)	E F G H I J K	116.3
Power 4.2 (PI + Alleg	4	4.6	(23)	8.6	(5)	8.0	(19)	7.5	(22)	7.2	(15)	F G H I J K L	115.9
DKA50-18	5	4.5	(25)	8.3	(16)	8.0	(15)	7.8	(15)	7.1	(16)	F G H I J K L	115.5
WL 319HQ	3	4.5	(26)	8.1	(25)	8.2	(9)	7.7	(18)	7.1	(17)	F G H I J K L	115.1
Whitney	4	4.6	(18)	8.3	(18)	7.9	(21)	7.6	(19)	7.1	(18)	F G H I J K L M	115.0
Power 4.2 (Coated)	4	4.7	(16)	8.3	(15)	7.8	(23)	7.5	(23)	7.1	(19)	G H I J K L M	114.7
WL 325HQ	4	4.6	(20)	8.3	(19)	8.1	(11)	7.3	(26)	7.1	(20)	G H I J K L M	114.7
Expedition	5	4.5	(24)	8.1	(26)	8.0	(18)	7.7	(16)	7.1	(21)	H I J K L M	114.4
CW 500	5	4.8	(8)	8.2	(23)	8.1	(12)	7.1	(28)	7.1	(22)	H I J K L M	114.2
PGI 424	4	4.9	(7)	8.4	(10)	7.5	(28)	7.3	(25)	7.0	(23)	H I J K L M N	113.8
HybriForce620	6	5.1	(4)	8.2	(22)	7.5	(26)	7.2	(27)	7.0	(24)	H I J K L M N	113.7
RRALF 4R200	4	4.0	(32)	7.8	(28)	8.1	(10)	7.8	(12)	7.0	(25)	I J K L M N	112.5
WL 343HQ	4	4.1	(31)	7.9	(27)	7.8	(22)	7.8	(14)	6.9	(26)	J K L M N	112.1
WL 355RR	4	4.8	(13)	7.8	(29)	7.5	(27)	7.4	(24)	6.9	(27)	K L M N	111.4
Mariner III	4	4.8	(9)	8.2	(20)	7.2	(29)	7.0	(29)	6.8	(28)	L M N	110.4
DKA41-18RR	4	4.3	(29)	7.5	(31)	7.7	(25)	7.6	(20)	6.8	(29)	M N	109.6
HybriForce420/wet	4	5.2	(3)	8.1	(24)	6.5	(31)	7.0	(30)	6.7	(30)	N O	108.4
FSG 408DP	4	4.7	(14)	7.8	(30)	6.8	(30)	6.2	(32)	6.4	(31)	O P	103.3
Vernal	2	4.4	(28)	7.5	(32)	6.2	(32)	6.6	(31)	6.2	(32)	P	100.0
MEAN		4.69		8.26		7.91		7.69		7.14			
CV		8.5		4.0		6.1		7.4		4.0			
LSD (0.1)		0.48		0.40		0.58		0.69		0.34			

Trial seeded at 25 lb/acre viable seed at Scott Valley, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD.

FD = Fall Dormancy reported by seed companies.

TABLE 2. 2008-2009 YIELDS, TULELAKE ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 07/27/07

		2008 Yield		2009 Yield		Average																				% of VERNAL
	FD	Dry t/a																								%
Released Varieties																										
Archer III	5	8.6	(1)	8.3	(2)	8.4	(1)	A																		127.5
DKA50-18	5	8.3	(11)	8.5	(1)	8.4	(2)	A	B																	126.9
PGI 459	4	8.5	(2)	8.3	(4)	8.4	(3)	A	B	C																126.4
WL 357HQ	5	8.3	(12)	8.1	(6)	8.2	(4)	A	B	C	D															123.6
Integra 8300	3	8.3	(15)	8.1	(7)	8.2	(5)	A	B	C	D	E														123.3
Integra 8400	4	8.0	(34)	8.3	(3)	8.2	(6)	A	B	C	D	E	F													123.1
GrandStand	4	8.2	(20)	8.0	(10)	8.1	(7)		B	C	D	E	F	G												122.2
PGI 424	4	8.3	(10)	7.9	(13)	8.1	(8)		B	C	D	E	F	G												122.2
AmeriStand444NT	4	8.4	(4)	7.7	(31)	8.1	(10)		B	C	D	E	F	G												122.0
Genoa	4	8.4	(6)	7.7	(27)	8.1	(12)			C	D	E	F	G	H											121.8
AmeriStand407TQ	4	8.1	(30)	8.0	(9)	8.1	(14)			C	D	E	F	G	H											121.7
FSG 528SF	5	8.4	(7)	7.7	(26)	8.1	(16)			C	D	E	F	G	H											121.6
Legendairy	3	8.0	(33)	8.1	(5)	8.1	(17)			C	D	E	F	G	H											121.6
CW 500	5	8.2	(18)	7.9	(14)	8.0	(18)			C	D	E	F	G	H	I										121.4
MilkMaker ML	5	8.4	(3)	7.6	(37)	8.0	(20)				D	E	F	G	H	I	J	K								120.8
Rebound 5	4	7.9	(38)	8.0	(8)	8.0	(23)				D	E	F	G	H	I	J	K	L							120.5
Dura 512	5	8.1	(24)	7.8	(21)	8.0	(24)				D	E	F	G	H	I	J	K	L	M						120.1
Xtra-3	4	8.4	(5)	7.5	(45)	7.9	(27)				D	E	F	G	H	I	J	K	L	M	N					119.9
54V09	4	8.1	(29)	7.6	(39)	7.8	(35)						F	G	H	I	J	K	L	M	N	O				118.3
Magnum VI	4	7.8	(47)	7.8	(18)	7.8	(36)							G	H	I	J	K	L	M	N	O				117.7
FSG 505	5	7.8	(46)	7.7	(25)	7.8	(38)							G	H	I	J	K	L	M	N	O	P			117.2
WL 325 HQ	4	7.8	(48)	7.7	(32)	7.7	(39)								H	I	J	K	L	M	N	O	P			116.9
MasterPiece	4	8.0	(37)	7.4	(49)	7.7	(44)											K	L	M	N	O	P	Q		115.9
WL 343HQ	4	7.6	(52)	7.7	(34)	7.7	(46)												L	M	N	O	P	Q		115.7
Mountaineer 2	5	7.9	(39)	7.3	(50)	7.6	(47)													M	N	O	P	Q		115.2
Prosementi	ND	8.1	(28)	7.2	(53)	7.6	(48)													M	N	O	P	Q		115.2
Everlast II	4	7.7	(51)	7.5	(43)	7.6	(51)															O	P	Q		114.8
FSG 408DP	4	7.6	(53)	7.3	(52)	7.4	(53)																P	Q	R	112.5
Whitney	4	7.9	(41)	6.9	(54)	7.4	(54)																	Q	R	111.7
Vernal	2	6.7	(56)	6.5	(56)	6.6	(56)																			100.0
Experimental Varieties																										
R46Bx197	8	8.3	(8)	7.8	(17)	8.1	(9)		B	C	D	E	F	G												122.1
R56BD188	ND	8.2	(22)	8.0	(12)	8.1	(11)			C	D	E	F	G												121.9
R56BD191	ND	8.3	(13)	7.8	(16)	8.1	(13)			C	D	E	F	G	H											121.7
R46Bx164	6	8.1	(26)	8.0	(11)	8.1	(15)			C	D	E	F	G	H											121.6
R46BD201	ND	8.2	(17)	7.8	(19)	8.0	(19)				D	E	F	G	H	I	J									121.1
R46Bx162	8	8.2	(16)	7.7	(28)	8.0	(21)				D	E	F	G	H	I	J	K	L							120.6
R56BD190	ND	8.2	(19)	7.8	(24)	8.0	(22)				D	E	F	G	H	I	J	K	L							120.5
R46Bx218	6	8.1	(31)	7.8	(15)	8.0	(25)				D	E	F	G	H	I	J	K	L	M						120.1
R46Bx167	4	8.2	(23)	7.7	(29)	7.9	(26)				D	E	F	G	H	I	J	K	L	M						120.0
R56Bx214	4	8.3	(9)	7.6	(38)	7.9	(28)				D	E	F	G	H	I	J	K	L	M	N					119.8
R46Bx775	ND	8.1	(27)	7.7	(30)	7.9	(29)				D	E	F	G	H	I	J	K	L	M	N	O				119.5
R46Bx777	ND	8.1	(32)	7.8	(23)	7.9	(30)				D	E	F	G	H	I	J	K	L	M	N	O				119.4
R46Bx165	8.5	8.0	(36)	7.8	(20)	7.9	(31)				D	E	F	G	H	I	J	K	L	M	N	O				119.0
R46Bx778	ND	8.2	(21)	7.5	(41)	7.9	(32)				D	E	F	G	H	I	J	K	L	M	N	O				118.7
R46Bx160	5	7.9	(40)	7.8	(22)	7.8	(33)					E	F	G	H	I	J	K	L	M	N	O				118.4
R46BD203	ND	8.3	(14)	7.4	(47)	7.8	(34)					E	F	G	H	I	J	K	L	M	N	O				118.4
R46Bx163	4	8.1	(25)	7.4	(48)	7.8	(37)							G	H	I	J	K	L	M	N	O	P			117.3
R56Bx212	6	7.9	(42)	7.5	(42)	7.7	(40)									I	J	K	L	M	N	O	P	Q		116.6
TS 4028	4	7.9	(43)	7.5	(40)	7.7	(41)									I	J	K	L	M	N	O	P	Q		116.6
R56BD202	ND	7.8	(45)	7.6	(35)	7.7	(42)									I	J	K	L	M	N	O	P	Q		116.6
R46Bx217	8	8.0	(35)	7.4	(46)	7.7	(43)										J	K	L	M	N	O	P	Q		116.4
R46Bx776	ND	7.7	(49)	7.6	(36)	7.7	(45)											K	L	M	N	O	P	Q		115.9
R46Bx161	6	7.5	(55)	7.7	(33)	7.6	(49)														N	O	P	Q		115.0
R46Bx173	5	7.7	(50)	7.5	(44)	7.6	(50)														N	O	P	Q		115.0
R46Bx211	4.1	7.9	(44)	7.3	(51)	7.6	(52)															O	P	Q		114.6
R66BD108	ND	7.6	(54)	6.8	(55)	7.2	(55)																		R	108.4
MEAN		8.05		7.69		7.87																				
CV		5.8		4.5		4.0																				
LSD (0.1)		0.49		0.37		0.33																				

Trial seeded at 25 lb/acre viable seed at Intermountain Research and Extension Center, Tulelake, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD.

FD = Fall Dormancy reported by seed companies.

Table 3. 2004-2009 YIELDS. UC TULELAKE ALFALFA CULTIVAR TRIAL. TRIAL PLANTED 5/21/04

		2004 Yield		2005 Yield		2006 Yield		2007 Yield		2008 Yield		2009 Yield		Average			% of Vernal
	FD	Dry t/a															%
Released Varieties																	
Alfa Star II	4	5.2	(18)	8.9	(8)	9.2	(4)	7.7	(9)	7.8	(1)	8.0	(8)	7.8	(1)	A	108.6
Rebound 5.0	4	5.2	(16)	8.9	(7)	9.3	(2)	7.5	(17)	7.7	(5)	8.0	(9)	7.8	(2)	A B	108.3
Xtra-3	4	5.1	(23)	9.2	(1)	9.4	(1)	7.4	(22)	7.8	(2)	7.8	(13)	7.8	(3)	A B	108.2
DS309Hyb	4	5.2	(10)	8.8	(16)	9.1	(9)	7.9	(3)	7.8	(3)	7.8	(16)	7.8	(4)	A B	107.9
WL357HQ	5	4.9	(30)	8.9	(6)	9.2	(3)	8.0	(1)	7.6	(10)	7.7	(23)	7.7	(5)	A B C	107.5
Dura 512	5	5.0	(29)	8.6	(19)	8.9	(19)	7.9	(4)	7.7	(4)	8.1	(1)	7.7	(7)	A B C D	107.1
MasterPiece	4	5.2	(12)	8.8	(15)	9.1	(8)	7.6	(13)	7.6	(8)	7.9	(11)	7.7	(8)	A B C D	107.0
Expedition	5	5.3	(6)	9.1	(2)	9.1	(10)	7.8	(5)	7.1	(31)	7.7	(24)	7.7	(9)	A B C D E	106.7
Recover	5	5.2	(9)	8.8	(12)	8.9	(20)	7.7	(8)	7.6	(7)	7.7	(27)	7.7	(10)	A B C D E F	106.4
WL325HQ	4	5.3	(7)	9.0	(5)	9.2	(5)	7.3	(26)	7.5	(12)	7.7	(22)	7.7	(11)	A B C D E F	106.4
Vitro	3	5.2	(13)	8.7	(17)	9.1	(7)	7.5	(15)	7.4	(17)	7.8	(12)	7.6	(12)	A B C D E F G	106.2
Mountaineer 2.0 (4M12	5	5.4	(1)	8.8	(13)	8.9	(17)	7.4	(23)	7.5	(13)	7.8	(15)	7.6	(13)	A B C D E F G	106.2
LegenDairy 5.0	3	4.9	(32)	8.9	(11)	9.0	(12)	7.7	(7)	7.5	(11)	7.7	(18)	7.6	(14)	A B C D E F G H	106.0
WL319HQ	3	5.1	(25)	8.9	(9)	9.0	(11)	7.8	(6)	7.2	(26)	7.6	(28)	7.6	(15)	A B C D E F G H	105.7
54Q25	4	5.1	(21)	8.5	(21)	9.0	(15)	7.5	(21)	7.4	(14)	8.0	(3)	7.6	(16)	A B C D E F G H	105.7
C 316 Lot9078	4	4.9	(31)	9.0	(4)	9.1	(6)	7.5	(18)	7.2	(23)	7.7	(21)	7.6	(17)	A B C D E F G H I	105.5
Hybriforce-420/Wet	4	5.2	(15)	8.6	(18)	8.8	(22)	7.5	(19)	7.3	(20)	8.0	(4)	7.6	(18)	A B C D E F G H I	105.5
Blazer XL	3	5.0	(28)	8.3	(28)	8.7	(26)	8.0	(2)	7.4	(15)	8.0	(6)	7.6	(19)	A B C D E F G H I	105.4
Boulder (4M125)	5	5.0	(27)	8.9	(10)	8.9	(18)	7.6	(10)	7.4	(16)	7.5	(30)	7.6	(20)	B C D E F G H I J	105.1
9429	4	4.8	(34)	8.3	(30)	8.9	(16)	7.5	(20)	7.6	(9)	8.0	(5)	7.5	(21)	C D E F G H I J K	104.4
SW435(SW4A135)	4	5.2	(17)	8.6	(20)	8.5	(32)	7.3	(27)	7.4	(18)	7.7	(20)	7.5	(23)	E F G H I J K	103.7
LM 459 WD	5	5.1	(20)	8.4	(24)	8.7	(27)	7.6	(11)	7.1	(28)	7.7	(25)	7.4	(24)	F G H I J K	103.5
CW5440	4	5.1	(24)	8.4	(25)	8.7	(24)	7.5	(16)	7.2	(24)	7.7	(26)	7.4	(25)	F G H I J K	103.4
Reward II	4	5.0	(26)	8.3	(27)	8.8	(21)	7.3	(29)	7.2	(25)	7.8	(14)	7.4	(26)	G H I J K L	103.1
DS218	6	5.2	(14)	8.5	(22)	8.7	(25)	7.4	(25)	6.9	(34)	7.7	(19)	7.4	(27)	H I J K L M	102.9
Plumas	4	4.8	(33)	8.1	(33)	8.6	(30)	7.6	(12)	7.3	(21)	7.8	(17)	7.4	(28)	I J K L M	102.4
Magna601	6	5.3	(5)	8.4	(26)	8.6	(29)	6.9	(35)	7.3	(22)	7.3	(34)	7.3	(32)	K L M	101.7
Innovator +Z	3	4.8	(35)	8.3	(29)	8.4	(35)	7.3	(28)	7.0	(32)	8.0	(2)	7.3	(33)	K L M	101.6
Vernal	2	4.7	(36)	8.0	(35)	8.4	(33)	7.3	(31)	6.9	(35)	7.9	(10)	7.2	(34)	L M	100.0
Experimental Varieties																	
CW94023	4	5.2	(19)	9.0	(3)	9.0	(13)	7.6	(14)	7.6	(6)	8.0	(7)	7.7	(6)	A B C	107.4
CW05009	5	5.1	(22)	8.8	(14)	9.0	(14)	7.4	(24)	7.1	(27)	7.5	(32)	7.5	(22)	D E F G H I J K	104.0
SW5307	5	5.4	(2)	8.2	(31)	8.8	(23)	7.0	(34)	7.1	(29)	7.6	(29)	7.3	(29)	J K L M	102.0
SW5329	5	5.2	(11)	8.4	(23)	8.5	(31)	7.3	(30)	7.0	(33)	7.5	(31)	7.3	(30)	J K L M	101.9
SW4328	4	5.2	(8)	8.0	(34)	8.7	(28)	7.1	(32)	7.4	(19)	7.4	(33)	7.3	(31)	J K L M	101.8
SW4310	4	5.4	(3)	8.1	(32)	8.4	(34)	7.1	(33)	7.1	(30)	7.0	(35)	7.2	(35)	M	99.8
SW6330	6	5.3	(4)	7.8	(36)	8.0	(36)	6.7	(36)	6.6	(36)	6.7	(36)	6.8	(36)		95.3
MEAN		5.12		8.59		8.85		7.47		7.35		7.72		7.52			
CV		5.4		4.9		4.6		5.8		6.3		4.7		2.9			
LSD (0.1)		0.29		0.45		0.44		0.46		0.49		0.39		0.23			

Trial seeded at 25 lb/acre viable seed at Intermountain Research and Extension Center, Tulelake, CA.

Entries followed by the same letter are not significantly different at the 10% probability level according to Fisher's (protected) LSD.

FD = Fall Dormancy reported by seed companies.

Life is too important- put that cell phone down!

By Steve Orloff, Siskiyou Farm Advisor

I have never included a subject like this in a newsletter before but thought it was a subject worth mentioning—it might save your life. You may think this doesn't apply to you or to the rural and farming community, but it does.

During a recent University holiday, I was home working on the computer and my wife had the Oprah Winfrey Show on the television. This was the first time I had been around when the show was on, and quite frankly I really wasn't paying attention until the subject matter caught my interest. The show was titled "America's New Deadly Obsession" and dealt with talking and texting while driving. The statistics were staggering. The epidemic of distracted drivers causes 6,000 deaths and ½ million injuries annually.

Some studies show that talking on a cell phone while driving is as dangerous as driving drunk, even if the cell phone is a hands-free model. Talking on a cell phone (hands free included), while driving makes you 4 times more likely to be in an accident. Texting while driving is far worse (about twice as dangerous). It is scary to think we have the equivalent of that many drunk drivers on the roads. Included on the show was a youth that was texting while driving and his accident resulted in two deaths. It was definitely a tear jerker seeing the relatives of the victims in the audience and the youth having to face them and recognize the lasting impact of his simple mistake.

It is easy to think that we are better able to drive while talking on a cell phone than the next guy, but it that really the case? Tests have demonstrated that your mind is unable to focus as well and your field of vision is reduced (especially if you are texting or reading an email like you can on many "smart" phones). People who have participated in these tests are typically shocked at how their performance deteriorates while talking on a cell phone and swear they will discontinue the habit.

We should all take this oath – don't text or use a cell phone while driving.

It is easy to think that the dangers of talking on a cell phone while driving are limited to those that live in urban areas, and that those of us who live in rural areas are immune to the danger. However, this is not the case. A few years ago a young energetic farmer and true leader in the alfalfa industry was killed in a single vehicle auto accident in the Imperial Valley, another rural area. He flipped into an irrigation ditch and the accident was believed to be related to cell phone use. He left a grieving wife and two small children—a tragic loss to the family and the whole community.

No doubt cell phones are extremely convenient and provide some entertainment on those long boring drives. However, how critical is that phone call we take or make while driving? Couldn't it wait until later when our safety, and that of others, is being put at a risk similar to the risk associated with driving drunk? Can't you pull over if it's important enough? How did we ever get by before the time of cell phones? Honestly, I think we all got along fine.

I have quit talking on the phone while driving—not even hands free—and have found it is more relaxing and less stressful. For your safety and that of others, you may want to consider doing the same.

So the next time you call me on my cell and I don't answer I may be driving (or busy watching another episode of the Oprah Winfrey Show).

UC Spring Wheat Variety Trial Results

By Rob Wilson, Tulelake Farm Advisor

University of California Cooperative Extension cereal evaluation tests are conducted in the intermountain valleys of northern California each year. Entries in the tests included standard cultivars, new and soon-to-be released cultivars, and advanced breeding lines from both public and private breeding programs. Tests were conducted in Tulelake at the Intermountain Research and Extension Center and in fields of cooperating growers in Siskiyou County (Scott Valley) and Lassen County. Intermountain tests were irrigated and sown at seeding rates of 1.2 million seeds per acre which is equivalent to 88 to 139lbs/acre for common wheat, 113 to 180 lbs/acre for durum wheat, and 69 to 126 lbs/acre for barley. Complete trial results, cultivar descriptions, and a new UC production guide can be found on the UC small grain workgroup website: http://agric.ucdavis.edu/crops/cereals/cereal.htm

The following tables show trial yield results for the last couple years at intermountain locations. You will notice some varieties performed better at Tulelake compared to Lassen or Siskiyou and visa versa. Differences in soil, weather, and irrigation are likely the causes for the variation. Thus, it is a good idea to focus on the trial sites with growing conditions similar to your fields. The Tulelake site has an organic clay loam soil with optimal irrigation. The Siskiyou and Lassen sites are normally located on sandy loam or loam soils with optimal to slightly below adequate irrigation. With site variation in mind, some varieties performed well at multiple locations as shown in the mean yield across locations column.

When comparing entries, one thing that is apparent for both wheat and barley is how well some of the experimental cultivars have performed. Many of the top yielding entries are experimental lines. Hopefully, some of these lines will be released and will out yield our standard varieties. Along with the yield data presented in the tables, variety characteristics such as grain quality, time of maturity, and pest resistance should be considered. Information on these characteristics can be obtained from your local seed supplier, County extension office, or the UC small grain workgroup website (shown above).

2009 INTERMOUNTAIN SPRING WHEAT YIELD SUMMARY (LBS/ACRE)

Entry	Name	Mean (2 Loc)		Lassen		Tulelake	
1	Bullseye (B02-0081	4440	(26)	2700	(22)	6180	(26)
2	Cabernet	5270	(15)	2610	(25)	7930	(11)
3	NPBHR 70	5060	(22)	2530	(28)	7590	(16)
4	Hank	5590	(7)	2720	(20)	8470	(7)
5	BZ901-717	5520	(8)	3210	(7)	7820	(14)
6	OR4990114	5860	(5)	3140	(9)	8580	(5)
7	OR4031177	4370	(28)	2630	(24)	6110	(27)
8	Jefferson	5160	(18)	2740	(19)	7590	(17)
9	UI Winchester	4310	(30)	2570	(27)	6060	(29)
10	IDO 702	5320	(13)	2760	(17)	7890	(13)
11	WA007954 (Kelse)	4850	(23)	2460	(29)	7240	(20)
12	10348W	5250	(17)	2910	(12)	7590	(18)
13	Blanca Grande	5450	(10)	2750	(18)	8160	(9)
14	IDO377S	5280	(14)	3920	(1)	6640	(24)
15	OR4051328	5060	(21)	2590	(26)	7540	(19)
16	Merrill	4490	(25)	2110	(30)	6870	(23)
17	Cleda	4380	(27)	2700	(23)	6070	(28)
18	Nick	5070	(20)	2970	(11)	7170	(21)
19	BZ604-002	5650	(6)	2850	(14)	8460	(8)
20	Alpowa	4530	(24)	2770	(16)	6290	(25)
21	WA008008 (Whit)	5330	(12)	2780	(15)	7890	(12)
22	WA008039	5260	(16)	3610	(3)	6900	(22)
23	WA008047	4360	(29)	2990	(10)	5740	(30)
24	WA008090	3610	(31)	2900	(13)	4310	(32)
25	Alturas	5480	(9)	3200	(8)	7770	(15)
26	UI Cataldo	6050	(3)	3330	(5)	8780	(2)
27	IDO 671	6150	(2)	3620	(2)	8680	(3)
28	IDO 599	6340	(1)	3410	(4)	9260	(1)
29	IDO 644	5410	(11)	2720	(21)	8100	(10)
30	OR4041451	3580	(32)	2090	(31)	5070	(31)
31	Expresso	5110	(19)	1740	(32)	8490	(6)
32	Petit	5980	(4)	3310	(6)	8650	(4)
	MEAN	5120		2850		7370	
	CV	12.2		18.4		9.6	
	LSD (.05)	710		860		1160	

Numbers in parentheses indicate relative rank in column.

2008 INTERMOUNTAIN SPRING WHEAT YIELD SUMMARY (LBS/ACRE)

Entry	Name	Mean (3 Loc)		Lassen		Siskiyou		Tulelake	
1	WA007954	5980	(9)	3120	(3)	6730	(13)	8070	(17)
2	Lassik	5920	(12)	2560	(10)	7020	(11)	8170	(15)
3	Hank	6580	(2)	3330	(2)	7500	(6)	8920	(7)
4	BZ901-717	5890	(13)	2900	(5)	6140	(22)	8620	(11)
5	Jefferson	5460	(21)	2320	(13)	7460	(7)	6590	(26)
6	B02-0081	5510	(17)	2220	(15)	6680	(14)	7620	(20)
7	Cabernet	5750	(15)	1230	(23)	7430	(8)	8600	(12)
8	RS150076R	6070	(6)	2840	(6)	6660	(16)	8720	(9)
9	RSI50603R	6110	(5)	2040	(19)	7750	(2)	8540	(14)
10	OR4031111	4500	(27)	420	(30)	6330	(21)	6770	(25)
11	OR4990114	6000	(7)	2430	(11)	6390	(20)	9190	(3)
12	Clear White	5360	(22)	970	(28)	7200	(9)	7910	(18)
13	Patwin	5210	(23)	980	(27)	5960	(23)	8690	(10)
14	Blanca Grande	5470	(20)	910	(29)	6510	(18)	9000	(5)
15	IDO377S	4290	(28)	2350	(12)	5270	(29)	5260	(28)
16	BZ903-445-WP	5920	(11)	2110	(17)	7570	(4)	8080	(16)
17	RSI10348W	5970	(10)	2020	(21)	6660	(15)	9220	(2)
18	37C-3	4700	(25)	990	(26)	5370	(27)	7750	(19)
19	OR4041451	3730	(30)	1180	(25)	5120	(30)	4890	(30)
20	77-154-98	4760	(24)	1670	(22)	5370	(26)	7250	(22)
21	Merill	5780	(14)	2030	(20)	6770	(12)	8550	(13)
22	BZ604-008	6390	(3)	2640	(8)	7560	(5)	8980	(6)
23	UI Cataldo	6000	(8)	2640	(9)	5870	(24)	9480	(1)
24	Alturas	6190	(4)	2310	(14)	7200	(10)	9060	(4)
25	Nick	5500	(19)	2800	(7)	6540	(17)	7170	(23)
26	BZ604-002	6710	(1)	3500	(1)	7880	(1)	8730	(8)
27	Louise	4080	(29)	2070	(18)	5270	(28)	4900	(29)
28	WA008008	5500	(18)	2970	(4)	6440	(19)	7100	(24)
29	WA008039	5700	(16)	2150	(16)	7630	(3)	7320	(21)
30	Alpowa	4510	(26)	1220	(24)	5780	(25)	6510	(27)
	MEAN	5520		2100		6600		7860	
	CV	19.4		57.5		18.3		9.1	
	LSD (.05)	990		ns		ns		1160	

Numbers in parentheses indicate relative rank in column.

2009 TULELAKE SPRING BARLEY TEST

Entry	Name	Yield (lbs/acre)		Test Wt (lbs/bu)	Plant Ht (in)	Lodging Harvest	Shatter	Stripe Rust 11-Aug	Stripe Rust 4-Aug
CULTIVARS									
204	STEPTOE	5890	(15)	52.5	40	5.0	1.0	1.0	1.7
900	BARONESSE	5250	(21)	55.7	39	6.3	1.7	1.0	1.3
960	UC 960	8030	(3)	52.8	33	1.3	1.0	1.0	1.0
1008	XENA	4230	(32)	55.9	42	7.3	1.0	1.0	1.0
1010	MILLENNIUM	8670	(1)	53.9	41	1.0	1.0	1.0	1.0
1016	STATEHOOD	6970	(7)	53.0	38	2.3	1.0	1.0	1.3
1074	IDAGOLD 2	7660	(5)	56.0	31	3.0	1.0	1.0	1.0
1079	CREEL	4260	(31)	56.1	44	6.0	1.0	1.0	2.0
1082	CONRAD	5310	(20)	55.7	40	5.7	1.0	1.0	1.3
1084	LEGACY	5020	(23)	54.7	46	5.7	2.3	1.0	2.0
1215	TETONIA	5070	(22)	56.1	41	5.3	1.7	1.0	1.3
1217	AC Metcalfe	4990	(25)	58.2	43	5.3	2.7	1.0	1.0
1218	CHAMPION	4830	(29)	55.7	38	7.0	1.0	1.0	1.0
ADVANCED LINES									
1099	UCD-TL20	6220	(12)	53.1	38	5.3	1.0	1.0	1.3
1135	UCD YP03-8/2	7950	(4)	59.1	32	1.0	1.0	1.0	1.0
1145	UCD-TLB52	5740	(16)	53.8	40	4.7	1.0	1.0	1.0
1171	T/S//E 11-18	4930	(27)	56.1	40	6.7	1.0	1.0	1.0
1188	95Ab11469	4700	(30)	56.9	41	6.0	2.0	1.0	1.0
1200	TLB 68	5360	(19)	52.2	38	5.3	1.0	1.0	1.0
1201	TLB 148	8200	(2)	52.8	40	2.0	1.0	1.0	1.0
1202	TLB 150	6450	(11)	51.3	41	3.0	1.0	1.0	1.3
1219	BZ502-265	4870	(28)	56.1	42	4.0	1.0	1.0	1.3
1238	TLA 6	6030	(13)	52.1	36	4.0	1.0	1.0	1.0
1239	TLA 8	6910	(8)	51.8	41	5.0	1.0	2.0	2.0
1240	TLA 38	6540	(10)	52.0	37	4.3	1.0	1.3	1.0
1241	TLA 43	4990	(26)	52.0	33	6.3	1.0	1.0	1.0
1242	TLB 35	5970	(14)	56.5	42	4.7	1.3	1.7	1.3
1243	TLB 37	5570	(18)	54.9	37	3.0	1.0	1.0	1.3
1244	TLB 44	7480	(6)	52.5	37	3.7	1.0	1.0	1.0
1245	TLE 3	6830	(9)	52.2	35	3.3	1.0	1.0	1.0
1246	TLE 11	5620	(17)	53.1	37	7.0	1.0	1.0	1.0
1247	TLF 4	5000	(24)	51.4	39	6.0	1.0	1.0	3.0
	MEAN	5990		1.2	39	4.6	1.2	1.1	1.27
	CV	17.3		34.5	5.4	32	34.5	36.1	49.5
	LSD (.05)	1690		0.7	4	2.4	0.7	ns	ns

Rating scale for diseases (area of flag-1 leaf affected), lodging, shatter, blackpoint, and yellowberry:
1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 7 = 85-95%, 8 = 96-100%.
Numbers in parentheses indicate relative rank in column.

2009 AND 2007-09 INTERMOUNTAIN SPRING BARLEY YIELD SUMMARY

Entry	Name	2009 (2 Loc)		2008-09 (4 Loc/Yr)		2007-09 (5 Loc/Yr)	
CULTIVARS							
204	STEPTOE	4700	(10)	5200	(10)	5710	(10)
900	BARONESSE	3630	(27)	4400	(18)	4980	(19)
960	UC 960	5610	(2)	6730	(1)	6860	(2)
1008	XENA	3240	(30)	4000	(20)	4790	(20)
1010	MILLENNIUM	5570	(3)	6560	(3)	6710	(3)
1016	STATEHOOD	4970	(7)	6030	(5)	6290	(6)
1074	IDAGOLD 2	4720	(9)	-		-	
1079	CREEL	3230	(31)	4850	(13)	5650	(11)
1082	CONRAD	3700	(25)	4870	(12)	5250	(15)
1084	LEGACY	3860	(23)	4630	(17)	5210	(16)
1215	TETONIA	3960	(22)	4930	(11)	5440	(12)
1217	AC Metcalfe	3430	(28)	3950	(21)	4580	(21)
1218	CHAMPION	3820	(24)	4660	(15)	5180	(17)
ADVANCED LINES							
1099	UCD-TL20	4280	(18)	5600	(9)	6000	(9)
1135	UCD YP03-8/2	5490	(4)	6440	(4)	6680	(4)
1145	UCD-TLB52	4440	(15)	5810	(6)	6240	(7)
1171	T/S//E 11-18	3640	(26)	4840	(14)	5420	(14)
1188	95Ab11469	3280	(29)	4390	(19)	5100	(18)
1200	TLB 68	4360	(16)	5660	(8)	6110	(8)
1201	TLB 148	5700	(1)	6710	(2)	7120	(1)
1202	TLB 150	4630	(11)	5770	(7)	6360	(5)
1219	BZ502-265	3210	(32)	4630	(16)	5420	(13)
1238	TLA 6	4340	(17)	-		-	
1239	TLA 8	5400	(5)	-		-	
1240	TLA 38	4550	(13)	-		-	
1241	TLA 43	4260	(19)	-		-	
1242	TLB 35	4580	(12)	-		-	
1243	TLB 37	4470	(14)	-		-	
1244	TLB 44	5320	(6)	-		-	
1245	TLE 3	4860	(8)	-		-	
1246	TLE 11	4110	(20)	-		-	
1247	TLF 4	4100	(21)	-		-	
	MEAN	4360		5420		5940	
	CV	19.5		19.5		16.4	
	LSD (.05)	970		790		640	

Numbers in parentheses indicate relative rank in column.

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