R i c e N o t e s

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CHANGES AT OUR OFFICE

After nearly 34 years as a UC Cooperative Extension Farm Advisor, I am retiring from the University on October 31, 2003. During my career here I have seen tremendous change in the farming. For example, rice yields are typically 25 to 30 sacks over what they were when I began, helping to keep the industry economically viable. There are numerous improved varieties which enable the industry to capitalize on high quality and specialty markets. A host of issues, such as straw management, herbicide resistance, and pesticide runoff have received attention, resulting in an enhanced public image and improved management capabilities. Many individuals and groups have been involved in moving our rice industry forward. I am proud to have been a part of the process, helping to create new knowledge through applied research and delivering it to the industry. In addition, I have been involved in numerous individual contacts to help solve farm problems often the most gratifying work and a chance to help and to learn at the same time. I will miss the research, the extension work and the personal contact. In retirement, I will pursue a combination of personal and professional interests.

The state budget deficit has made it impossible for UC to hire a new person to replace me. Others in surrounding counties have stepped up to assume my duties and they are listed below. Hopefully, in time the University will once again rebuild Cooperative Extension. In the meantime, those remaining will do their best to maintain the excellent working relationship we have with the California rice industry and to serve your informational needs with high quality research based information.

Administration, row crops in the Meridian area:
Mr. Mike Murray, Colusa County, telephone: 530/458-0577 or 530/822-7515

Rice:
Dr. Randall "Cass" Mutters, Butte County, telephone: 530/538-7200

Small grains, dry beans:
Mr. Jerry Schmierer, Colusa County, telephone: 530/458-0575

Processing tomatoes, other row crops:
Mr. Gene Miyao, Yolo County, telephone: 530/666-8732
Mr. Mike Murray, Colusa County, telephone: 530/458-0577 or 530/822-7515

CHOOSING WHEAT AND BARLEY VARIETIES FOR THE 2004 CROP

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Choosing a good wheat or barley variety for the 2004 crop has never been more important. This past year many of the older varieties produced poor yields and quality. The extended wet and cool spring weather was very favorable for disease development, but the continuing development of new strains of the wheat stripe disease may be a more important factor to consider in selecting wheat varieties to plant for the 2004 crop.

This article summarizes UCCE variety testing in the Sacramento Valley for wheat and barley, under both irrigated and rain fed conditions. Be careful when reviewing the tables to note whether they are for irrigated, or rain fed conditions.

WHEAT YIELDS

This year's wheat yields in the Sacramento Valley were severely impacted by wheat stripe rust disease. New races of wheat stripe rust are continuing to develop. Many previously resistant varieties: Anza, Yolo, Klasic, Serra and Yecora Rojo, had high levels of stripe rust throughout the Central Valley in the 2003 crop. Express' grain yields and quality were less affected, but were much lower in the 2003 trials.

The yield results for eleven Sacramento Valley UC Cooperative Extension trials over 2001 to 2003 are given in Table 1. Summit is the highest yielding variety over these three years, averaging 6,120 pounds per acre. Over this same three years Express' grain yield is about 2,000 pounds per acre less yield than Summit, averaging 4,180 pounds per acre.

The three year average Express' yields are higher because this variety was not even moderately affected by wheat stripe rust in the 2001 and 2002 trials. However, Express' three year average yield was decreased by severe shattering losses in the 2002 UC Davis trial. The very wheat stripe rust tolerant variety, Plata which is hard white wheat, also had low yields due to shattering in this trial.

WHEAT PROTEIN

The new variety, Summit, is a good option if yield is more important than producing high protein grain. Summit's protein content is usually in between Express' protein and the much lower protein varieties like Yolo and Anza. The protein results are shown in Table 2. In UCCE trials over the three year period, 2001 to 2003, Express averaged 0.8 percent protein higher than Summit.

Even if Express has produced high protein grain before, it is a much riskier choice this year. If Express is planted, then a fungicide application may be needed in the spring. Express' severe yield reductions in 2003 were likely due to a combination of new strains of wheat stripe rust disease and the extended wet spring weather of 2003. If 2004 has more typical spring weather, the importance of these two factors on Express' performance will be clearer.

WHEAT MILLING VERSUS FEED GRAIN

The anticipated price difference between milling quality grain and feed grain will be an important factor in selecting a wheat variety this year. A review of average milling and feed

wheat prices received in the Sacramento Valley during the past few years would be helpful in making this decision.

Another important option is to try to raise the protein levels of Summit and Stander to milling quality by additional nitrogen. Many UC trials over the past 15 years have shown a 1 to 2 percent increase by the addition of 40 pounds of actual nitrogen during the late boot stage to early flowering stage. Given the very high yields of these two varieties this would be a good time to try this, on at least a limited acreage.

WHEAT STRIPE RUST RATINGS

Wheat stripe rust ratings for the four Sacramento Valley trials are shown in Table 3. Be sure to read the disease rating scale in the heading of the table. The ratings range from 1 to a maximum of 8, but a rating of a 4 could be as high as 49 percent infection of the flag leaf. Summit, Stander and Plata had very low areas of the flag leaf affected by stripe rust, less than 4 percent.

IRRIGATED BARLEY

Barley is not commonly grown in the Sacramento Valley. Barley is not affected by wheat stripe rust, but has a new disease of its own, barley stripe rust. This disease first appeared in the late 1990's and eliminated many barley varieties. Yield decreases from barley stripe rust have decreased the barley acreage statewide.

However, there are two new barley varieties, UC 937 and UC 933, which have good resistance to barley stripe rust. They also have resistance to scald and net blotch, diseases that are at least partially responsible for barley not commonly being grown in the Sacramento Valley. As long as this disease resistance lasts, it makes barley an option in the Sacramento Valley. Table 4 is a yield summary of six trials over a three year period for several barley varieties.

UC 937 had severe shattering losses in the Butte 2002 trial resulting in a much lower yield than UC 933. UC 937 has a weakness of losing the entire head if winds occur after the grain is mature. Harvesting UC 937 as soon as it is mature will be important if windy weather occurs. UC 933 is a newer variety and seed is limited. UC 937 is capable of very similar yields to UC 933, but must be managed carefully to avoid severe shattering losses.

SUMMARY

There are fewer choices of both wheat and barley varieties for the 2004 crop, but there are several good ones of both wheat and barley. However, in this rapidly changing disease situation, consider planting more than one variety to decrease your risk of severe losses from any varietal characteristic effecting wheat and barley yields and quality.

Table 1: 2001-2003 Sacramento Valley **irrigated** wheat yield summary. Yields are in pounds per acre and the numbers in parentheses indicate the relative rank in the column

Variety	Average 2001-03 11 Loc/Yr		Butte						Colusa				UC Davis						Sac/SJ Delta					
			2003		2002		2001		2003		2001		2003		2002		2001		2003		2002		2001	
ANZA	4410	(4)	2750	(22)	6700	(17)	6190	(06)	2710	(18)	5850	(08)	2420	(7)	4470	(16)	4720	(23)	3510	(5)	4040	(22)	5190	(24)
YECORA ROJO	3330	(15)	1920	(32)	5420	(41)	4850	(40)	6600	(30)	5630	(15)	9800	(10)	3660	(29)	4670	(26)	3600	(11)	3390	(45)	5060	(30)
YOLO	3950	(10)	2290	(29)	6800	(12)	6150	(07)	8500	(28)	5290	(25)	1630	(9)	4070	(24)	4680	(25)	2120	(9)	3810	(30)	5760	(12)
KLASIC	4320	(6)	2430	(26)	5960	(31)	6320	(04)	1760	(27)	6440	(01)	1670	(8)	4380	(17)	5630	(12)	2450	(8)	4420	(04)	6020	(08)
SERRA	4150	(9)	3770	(15)	5500	(39)	6140	(08)	2700	(19)	5150	(29)	2730	(6)	4700	(11)	4530	(31)	2530	(7)	3520	(40)	4410	(38)
EXPRESS	4180	(7)	4040	(13)	5450	(40)	5680	(23)	3870	(15)	4910	(38)	3350	(5)	1790	(43)	5130	(17)	3200	(6)	3460	(42)	5110	(27)
BONUS	3850	(11)	2030	(31)	6590	(19)	6100	(11)	1700	(36)	6240	(03)	6700	(11)	4270	(19)	5440	(14)	6100	(10)	3770	(35)	6440	(02)
STANDER	5600	(2)	4980	(6)	6880	(10)	5790	(20)	6110	(5)	5580	(16)	5540	(3)	5650	(01)	6060	(04)	5980	(3)	3780	(33)	5250	(21)
SUMMIT	6120	(1)	6000	(1)	7610	(03)	5660	(24)	7570	(1)	5900	(07)	6260	(1)	4120	(22)	6540	(01)	7310	(1)	4030	(23)	6300	(04)
PLATA	-		5880	(2)	6100	(30)			7240	(2)			6260	(2)	2900	(40)			6890	(2)	4070	(18)		
BETH HASHITA	4650	(3)	3880	(14)	6100	(29)	5940	(15)	4810	(13)	4920	(37)	4700	(4)	2280	(42)	4930	(20)	5720	(4)	2600	(57)	5220	(22)
CV	9.5		14.6		7		5.3		12.7		6.4		10.8		10.5		7.4		6.8		10.4		5.3	
LSD $_{(.05)}$	170		660		550		450		560		440		450		720		530		310		740		420	

Table 2: 2003 common **irrigated** wheat grain protein summary for the Sacramento Valley. Grain Protein % is expressed at 12% moisture basis.

		2003			
Variety	Average 2001-03 10 Loc/Yr	Butte	Colusa	UC Davis	Sac/SJ Delta
ANZA	11.4	11.0	11.7	11.6	12.0
YECORA ROJO	12.8	12.8	12.9	13.4	13.7
YOLO	11.4	11.2	12.3	12.7	11.8
KLASIC	12.6	12.8	13.2	13.8	13.1
SERRA	12.4	12.6	12.8	13.4	13.8
EXPRESS	13.3	13.2	12.8	13.1	13.7
BONUS	12.1	13.1	-	13.9	13.8
STANDER	12.6	12.4	11.9	13.2	12.6
SUMMIT	12.5	12.9	12.3	12.4	13.4
PLATA		11.4	12.0	12.3	12.3
BETH HASHITA		12.2	11.7	12.4	12.7
$LSD_{(.05)}$	0.9				

Table 3: 2003 Wheat stripe rust summary for the Sacramento Valley. The rating (percentage of the flag leaf affected) scale is: 1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-60%, 6 = 70-84%, 7 = 85-95%, and 8 = 96-100%. The numbers in parentheses indicate the relative rank in that column.

Variety	Average (4 locations)	Butte	Colusa	UC Davis	Sac-SJ Delta
ANZA	4.5	5.0	4.5	5.3	3.0
YECORA ROJO	7.7	7.5	7.3	8.0	7.8
YOLO	6.8	4.8	8.0	8.0	6.5
KLASIC	7.3	7.0	8.0	8.0	6.3
SERRA	4.5	4.0	4.5	5.5	3.8
EXPRESS	3.5	3.0	5.0	2.8	3.0
BONUS	7.5	8.0	8.0	8.0	5.8
STANDER	1.2	1.0	1.3	1.3	1.0
SUMMIT	1.5	1.3	1.5	1.8	1.3
PLATA	1.0	1.0	1.0	1.0	1.0
BETH HASHITA	1.6	1.0	2.3	2.0	1.0
CV	13.6	19.4	8.9	12.3	11.5
$LSD_{(.05)}$	0.3	1.1	0.6	0.9	0.7

Table 4: 2000-2003 Sacramento Valley **irrigated** barley yield summary. Yields are in pounds per acre and the number in parentheses indicate the relative rank in the column.

Variety	Average 2001-03 6 Loc/Yr		Butte 2003		Butte 2002		Butte 2001		UC Davis 2003		UC Davis 2002		UC Davis 2001	
UC 603	4740	(5)	4880	(6)	4070	(07)	4040	(11)	6250	(5)	4630	(03)	4570	(09)
PATTI	5438	(3)	6760	(1)	5450	(04)	5010	(05)	7600	(3)	3390	(09)	4420	(10)
UC 933	6207	(1)	6620	(3)	6090	(01)	5280	(04)	8570	(1)	5060	(02)	5620	(02)
UC 937	5532	(2)	6690	(2)	3750	(08)	5370	(02)	7670	(2)	4260	(04)	5450	(05)
MELTAN	4198	(6)	4960	(5)	3210	(10)	4250	(10)	5420	(6)	2220	(10)	5130	(06)
UC 969	4970	(4)	6470	(4)	3380	(09)	4390	(08)	6980	(4)	3970	(05)	4630	(08)
CV			7.3		19.8		11.8		8.3		21		8.3	
LSD (.05)			710		1130		760		920		930		570	

Table 5: 2000-2003 Sacramento Valley **rainfed** barley yield summary.
Yields are in pounds per acre and the numbers in parentheses indicate the relative rank in the column.

Variety	Average 2001-03 (7 loc/yr)		Glenn 2003	San Luis Obispo 2001	San Luis Obispo 2002	San Luis Obispo 2003	Tulare 2001	Tulare 2002	Tulare 2003
UC 603	2510	(6)	5650	2010	4460	920	380	1940	2190
MAX	2090	(8)	5040	1010	3980	1200	670	1420	1320
PATTI	2310	(7)	5200	1710	3790	900	550	1900	2110
UC 933	3050	(1)	6870	3010	5360	770	930	1930	2450
UC 937	2840	(4)	6530	2040	4240	1340	800	2370	2580
MELTAN	2890	(2)	5320	2790	5080	1180	1120	2240	2500
UC 969	2540	(5)	6020	2660	3410	810	500	2220	2170
CV	19.2		13.0	23.7	14.2	45.7	41.3	15.3	11.0
$LSD_{(.05)}$	270		1140	790	890	690	510	430	340