

Arizona Grain Research and Promotion Council

ANNUAL NEWSLETTER

Fall 2008



Chairman's Report

By David Sharp



The AGRPC has elected a new chairman annually in recent years and I expected to assume the role of venerated past chairman at the end of my term last February.

However, council members were so pleased with results of the high grain price policies adopted during my administration that they returned me to office for a second year. I dutifully accepted after considering the tremendous support they gave me....by the way, my left arm is still sore.....and the prospect that grain prices would stay strong and sustain my popularity.

Wouldn't you know it, though.....? Good times are often followed by tough times, as is all too evident on many fronts here in the last quarter of 2008. True, decent grain prices appear to be on the table for the 2009 crop. On the other hand, production costs have eaten away at the profitability we might have enjoyed from the 2008 crop and it's anyone's guess how that will play out during the coming season. The tough times have also brought on a legitimate threat to the future of the AGRPC and its mission, in the form of actions taken by the State of Arizona's legislature and governor.

State's taking of producer funds is a big deal

The gory details of the state government's "sweep" (really, expropriation) of \$80,000 of AGRPC funds are presented elsewhere in this annual report. I will use this space simply to assure Arizona's wheat and barley producers that AGRPC members are making the strongest effort possible to recover the lost funds and to shield your assessments from further expropriation.

Failure in this effort could well lead to the demise of the AGRPC and consequent loss of the many research and promotion benefits that materialize from the small assessment that you pay on each ton of wheat and barley you produce. These benefits are described elsewhere in this report and have been thoroughly presented in previous reports. The irony of the matter is that the AGRPC is a producer group helping itself without State assistance, yet the State has effectively squashed that initiative.

The AGRPC recognizes that the State of Arizona faces huge financial difficulties and has no quarrel with the sweep of excess funds from many agencies of state government – funds that were largely acquired through taxes and regulatory fees. But, we insist that your grain assessment funds fall in a different category and that the intention of the AGRPC statute is for the State to hold the funds in trust to be used solely for the purposes for which they were intended. As a precedent for this concept, consider that the language of the Arizona Cotton Research and Protection Council statute specifically says that bale assessments are held in "trust" by the state and, therefore, its funds cannot legally be swept. Regrettably, we have been unable to get legislative action to protect your AGRPC funds by the same concept and the State considers its actions to be legal. At the end of

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AGRPC sues State of Arizona over funds grab

The Arizona Grain Research and Promotion Council is suing Arizona Governor Janet Napolitano and State Treasurer Dean Martin with the objectives of recovering \$80,000 in grower assessments that were taken, or swept, from the council's grain fund account in April 2008 and preventing future sweeps from the fund. The funds were swept as part of the state's efforts to cover a shortfall in tax revenues in the fiscal year that ended on June 30, 2008. About \$275 million under the control of 100 or so state agencies, including the AGRPC, were reallocated as the result of legislative action that was signed by the governor.

The AGRPC members strongly believe that grower assessments in the grain fund, as well as those in citrus and lettuce funds that were affected by the sweep, belong to the producers and should not have been taken, according to Chairman David Sharp of Roll. "We consider that the state acted illegally and unethically in this matter," says Sharp. "We asked the Attorney General's office and were given permission to obtain private counsel to represent us in this lawsuit. I assure all those grain producers who voluntarily left their assessments in the council's hands that we will go to the highest level to get their money back and protect them from future expropriative actions."

Four farm groups had already sued the State on behalf of the citrus and lettuce groups to recover monies swept from them and also sought recovery of the \$80,000 taken from the grain fund.

Could have been worse; trust is the issue

As bad as losing \$80,000 was, it might have been worse, according to Chairman Sharp. It seems that the legislature originally had designs on about \$137,000 of AGRPC funds. The diligence of key allies in the agricultural industry convinced the State's budget people to reduce the amount taken. "There was some serious education taking place behind closed doors," says Sharp, resulting in the reduced sweep amount.

Some of the arguments involved the issue of whether the grain fund is held in trust by the State for grower use. For example, legislation authorizing the Arizona Cotton Research and Protection Council clearly says its bale assessments are held in trust by the State and cotton funds were not swept last spring. The AGRPC has not been able to amend its statute to use the same language, although Sharp says the intent of the statute is certainly identical.

Lawsuit, continued, page 2

A Message to Arizona's Grain Growers

The Arizona Grain Research and Promotion Council was created in 1986 by the Arizona legislature as a producer-funded and producer-directed program to assist in developing the state's grain industry to be more productive and profitable. The council's authorization was extended for 10 years by the 2003 Arizona legislature after a successful "sunset" review process.

Programs and projects in which the council may engage include:

1. Cooperation in state, regional, national or international activities with public or private organizations or individuals to assist in developing and expanding markets and reducing the cost of marketing grain and grain products.

2. Participation in research projects and programs to assist in reducing fresh water consumption, developing new grain varieties, improving production and handling methods and in the research and design of new or improved harvesting or handling equipment.

3. Any program or project that the council determines appropriate to provide education, publicity or other assistance to facilitate further development of the Arizona grain industry.

The council consists of seven members appointed by the governor for three-year terms. Members must be residents and producers in the state and they serve without compensation. Producers who wish consideration for appointment to the council may contact the office of the Arizona Department of Agriculture's council administrator (602-542-3262.)

The council has established a check-off fee of \$.02/cwt (\$.40/ton) on the barley and wheat of all classes that is produced in Arizona and sold "...for use as food, feed or seed or produced for any industrial or commercial use." Thus, all grain of these kinds is subject to the assessment when it is first sold to a buyer or "first purchaser."

Check-off fees are collected by the "first purchaser" and remitted to the council, in care of the Arizona Department of Agriculture. Although producers bear primary responsibility for paying the fee, this liability is discharged if the fee is collected by the first purchaser.

Producers may request a refund within 60 days of paying the fee by submitting the appropriate refund request form that can be obtained from the council.

The council's quarterly meetings are open to the public. Meeting dates and agendas can be obtained from the ADA council administrator's office.

Producers of grain in Arizona are urged to contact any council member with comments or ideas pertaining to the council's mission or activities. Ideas for production research projects are especially welcome.

AGRPC Members

David Sharp, Roll
Chairman

Term expiration - 1/31/2010
Phone: 928-785-9338/928-941-1738 cell

Art Heiden, Buckeye
Vice Chairman

Term expiration - 1/31/2010
Phone: 623-386-4410/602-919-4581 cell

Larry Hart, Maricopa
Secretary-Treasurer

Term expiration 1/31/2006
Phone: 520-568-3824

Michael Edgar, Barkley Seed, Inc.

U.S. Wheat Associates Board
Term expiration - 1/31/2011
Phone: 928-782-2571/928-246-9947 cell

Paul Ollerton, Casa Grande
Secretary-Treasurer

Term expiration 1/31/2008
Phone: 520-836-4280/520-560-6111 cell

Eric Wilkey, Arizona Grain, Inc.

Term expiration 1/31/2009
Phone: 520-836-8228/602-390-2122 cell

Note: Members whose term have expired have applied for re-appointment and are awaiting action by the governor's office.



Lawsuit, continued from page 1

Law firm hired; notices are filed; lawsuits are joined

After receiving permission to hire legal counsel, Chairman Sharp and AGRPC Secretary-Treasurer Larry Hart, Maricopa, interviewed four law firms before selecting the Phoenix firm of Curtis, Goodwin, Sullivan, Udall & Schwab, P.L.C. This firm has experience in representing irrigation and electrical districts and once acted for a wheat grower during the Karnal bunt quarantine action that began in 1996.

In September, the firm served the State a Notice of Claim relating to the sweep on behalf of AGRPC. While the State now contends that it has not rejected the claim and is still considering the settlement offer contained in the Notice of Claim, the Attorney General's office has granted AGRPC permission to move forward with its lawsuit. Usually, a notice of claim must be rejected outright before a party may sue the State, according to the AGRPC's attorneys.

Because the claims filed by the farm groups and the AGRPC are almost identical, their lawyers and those for the State have recommended that the two suits be combined to save time and attorney fees, and the AGRPC has agreed. Accordingly, on October 30 AGRPC's lawyers filed a stipulation signed by all parties asking the Court in the existing lawsuit to allow AGRPC to join that suit as a plaintiff-intervenor. If the Court grants that request, as expected, the AGRPC will officially become a plaintiff in the ongoing lawsuit.

Summary judgment for AGRPC will be requested; speedy decisions are sought

The plaintiffs in the joint lawsuit claim that HB 2620, which authorized the sweeps, violates the Arizona and United States constitutions when applied to AGRPC funds. The plaintiffs intend to file a motion for summary judgment, which is a request to the Court that it enter judgment on the merits without the need for a trial. It is expected that the State will argue that HB 2620 is constitutional, and will seek summary judgment on its own behalf. A trial will likely ensue if the Maricopa County Superior Court does not grant summary judgment for any party.

Both sides are hoping for a quick resolution of the matter because the State's budget crunch is ongoing and another round of sweeps seems inevitable after the legislature convenes. The State seeks speedy Court-supported clearance to sweep the funds at issue while the AGRPC and co-plaintiffs want Court-supported protection from future sweeps, and return of swept funds. The dispute will probably not end, regardless of which direction a summary judgment might go, as the losing side will likely appeal to a higher court. On the other hand, resolving the issue by trial will be time-consuming and costly.

Chairman's report, continued from page 1

the day, we contend that the State's actions are illegal and unethical.

Lawsuit in the works

The AGRPC is a "creature" of state legislation and, as you can read elsewhere, it is not a slam-dunk for a state agency to sue the state itself. Nevertheless, we persevered with the attorney general's office, finally receiving permission to hire private counsel following several months of intense education and negotiation. We interviewed four law firms from a list provided by the AG's office and selected the Phoenix firm of Curtis, Goodwin, Sullivan, Udall & Schwab, P.L.C. The lawyers who will handle our case are Kelly Schwab and Michelle Swann. This firm has previously represented various irrigation and electrical districts in suits against the state as well as a Marana wheat producer during the "Karnal bunt war" in 1996.

You may have read in local media and regional ag publications that several agricultural groups have sued the state to recover the AGRPC's swept funds as well as those of the Arizona Iceberg Lettuce Research Council and the Arizona Citrus Research Council. This action by the Yuma Fresh Vegetable Association, Arizona Farm Bureau Federation, Western Growers Association and Arizona Wheat Growers Association was taken early in the summer before the AGRPC received the go-ahead to sue. The Council is appreciative that these groups were able to get the recovery effort underway at an early date. Now, it appears that all parties have agreed that AGRPC should intervene in and join that suit in order to avoid potential conflicts.

The State of Arizona has not recognized claims of the ag groups or the Council that the funds should be returned, so stay tuned for the outcome of the legal process.

Grain quality takes a hit; exercise caution in feed vs. milling markets

I suppose it was inevitable that last season's bumper prices and increased acreage would lead to some grain quality wrecks. New growers, high grain prices and costly inputs make for a volatile mixture when it comes to maintaining HVAC and protein. Throw in some rains just ahead of harvest to complicate matters and you can imagine some 25% HVACs, 10% proteins and 12% moistures. Makes me think back to the 1970s when Arizona grew mostly feed wheat and today's image of Desert Durum® didn't exist.

I tried to make the point in my remarks of last year that markets are made up of both sellers AND buyers; that Desert Durum's® market for many years has been one where buyers expect high quality and Arizona growers have met their expectations. Our

milling market is mostly a contract-driven market where handlers agree to provide high quality grain in quantities needed by both domestic and foreign buyers, and then contract to buy that grain from our growers.

A squeeze develops when crop quality doesn't meet buyer contract requirements and handlers aren't able to utilize low quality grain for their milling customers. Lots of considerations can factor into the quality deficiency, of course – bad weather, substandard management, and production economics decisions among them. Luckily, Arizona is a feed-deficient state and feeding can be a ready market for low-quality durum. Furthermore, feeding demand for wheat can be boosted by sky-high corn and other feed grain prices, assisted locally by the biofuel-generated pinch on feed supplies. The price of corn and other feed grains has dropped significantly so Arizona feeders and dairies are in position to either forward contract their grain needs or wait for continued price softening. Consequences of this scenario might include huge discounts on sub-standard durum grain come summer of 2009. Growers should think carefully about the relative risk of playing the discount game if they can avoid doing so.

U.S. Wheat Associates leverages grower funds and Arizona's image

We've often mentioned the tremendous leverage that Arizona's wheat industry enjoys for the relatively small annual assessment that the AGRPC pays to be a full member of U.S. Wheat Associates (USW). USW is the producer organization that promotes the sale and use of the six classes of wheat produced in the U.S., including durum. Altogether, wheat growers in 18 states contribute about \$4 million annually to USW. These funds are used to justify securing about \$10 million from the USDA's Foreign Agricultural Service, funds that are used to staff and operate offices in 15 wheat-consuming locations around the globe. These offices are fully dedicated to telling wheat buyers about U.S. wheat, how to buy it and how to use to their best advantage. Please take a moment to glance at USW's 2007-2008 annual report that accompanied this report.

The advantages of USW membership to a small wheat state such as Arizona are enormous because our unique brand of durum wheat – Desert Durum® - receives the same attention in all world durum markets as northern U.S. durum. AGRPC's USW membership assessment (based on production) is miniscule compared to the approximately \$750,000 that North Dakota contributes annually to USW, for example. Take it from Arizonans who have traveled on behalf of USW or who have hosted USWA

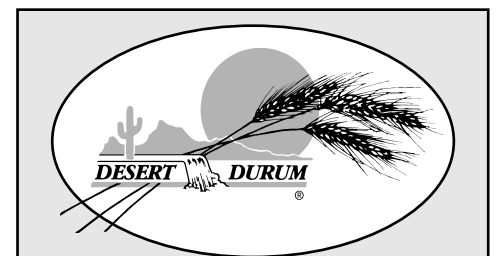
trade teams here in the state – the world's durum-buyers know about Desert Durum®, even if they cannot always afford our "Gem of the Southwest."

USWA spotlight shines on AGRPC's Chairman Michael Edgar

You can read comments of Michael Edgar of Yuma about his role as U.S. Wheat Associates chairman elsewhere in this report. Michael is AGRPC's member of USW's board of directors, which consists of about 30 growers from member states. He has progressed through the secretary-treasurer and vice chair positions and assumed the chairmanship at the July board meeting in Kansas City. We are honored to have an Arizonan serve as the face of the U.S. wheat industry's export effort and we look forward to his insights about the industry. We know that Michael brings a unique perspective to the USW board, too, gained from his combination of experience as producer and shipper.

Kudos due to Arizona Department of Agriculture staff

There have been trying times during the eight months that have passed since the council first heard about the possibility of a legislative sweep of your funds. Two stalwarts of the Department of Agriculture have provided guidance to the AGRPC throughout the process. We appreciate the efforts of Assistant Director Bret Cameron and Council, Board and Commission Administrator Lisa James.



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Contact the Arizona Department of Agriculture to obtain remittance and refund forms. 1688 W. Adams, Phoenix, AZ 85007. Phone: 602-542-3262. Fax: 602-364-0830. Lisa James, Council, Board and Commission Administrator. E-Mail: ljames@azda.gov.

AGRPC'S FY 2008 Financial Statement and FY 2009 Budget

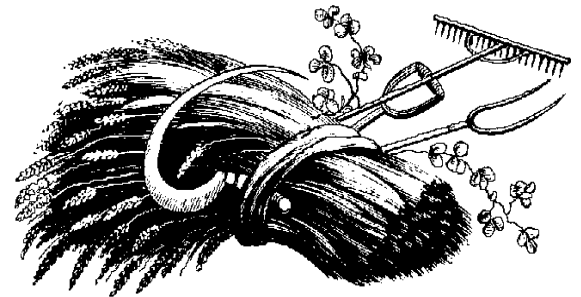
	FY 2008 ACTUAL	FY 2009 BUDGET
Beginning fund balance	\$211,916	\$49,604
Income items:		
Assessments	121,603	193,347
Investment income	11,529	6,000
Less refunds to producers	(9,015)	(19,335)
Net income	\$124,117	\$180,012
Total fund balance	\$336,033	\$229,616
Expenses		
Executive Director (1)	10,800	15,000
ADA administration (2)	23,000	0
U.S. Wheat Associates (3)	55,442	35,000
Travel	10,247	12,000
Desert Durum quality survey	10,751	16,000
Trade teams	0	2,000
Office	1,503	2,000
Promotion & advertising	13,467	16,000
Research projects (4)	40,414	67,478
Other grants	40,000	0
Attorney's Fees	0	64,000
Miscellaneous	805	0
State of Arizona fund sweep	80,000	0
Total expenses	\$286,429	\$229,478
Surplus or (Deficit) on yearly income	(\$162,312)	(\$49,466)
Ending fund balance	\$49,604	\$138

- (1) Arizona Crop Improvement Association contract
 (2) ADA administration: FY 2008 actual includes fee for FY 08 and FY 09
 (3) Membership assessment: FY 2008 actual includes membership dues for FY 08 and FY 09; FY 09 budget pays FY 10 assessments
 (4) FY09 Budget includes \$24,664 final payments on FY 06 and FY 08 research projects

Desert Durum Production and Export Volumes Marketing Years 2007 and 2008

The following figures were derived from export reports of the USDA/GIPSA

<u>Production</u>	<u>2006/2007</u> (Metric tons)	<u>2007/2008</u> (Metric tons)
Arizona	201,367	397,401
California	175,102	442,933
Total	376,463	840,334
 <u>Export Destinations</u>		
Italy	147,492	155,372
Nigeria	77,996	107,609
Spain	-----	-----
Venezuela	6,000	9,500
Total	231,488	272,531



Global food aid shifts toward cash

By Blaine Jacobson, Executive Director, Idaho Wheat Commission; Chairman, Food Aid Working Group of U.S. Wheat Associates

There is an Asian saying, "When elephants dance the ants get stepped on," that might characterize the parties in the struggle to define what is appropriate food aid for hungry populations. To date, the ants, representing those who favor donation of in-kind commodities as opposed to cash, have barely avoided being stepped on. However, very large and powerful interests continue to push for cash.

Surging commodity prices during 2008 brought criticism upon world aid agencies, including the World Bank, United Nations Food & Agricultural Organization, and the World Food Programme. Critics claim that not enough is being done to remedy growing global hunger problems. In response, the pro-cash movement gained a little more momentum. In addition, there is growing support among world aid agencies for helping needy countries feed themselves, instead of large food-producing countries sending food to feed them.

Cash supply for food aid grows

For the first time ever in 2008, the World Food Programme has more cash to work with than in-kind commodities. The agency has announced it will change focus from a food procurement organization to a food development agency. It will channel its \$800 million annual budget into creating local markets for agriculture. This includes multi-year forward contracts, new seed research, irrigation systems,

and better roads. The Bill & Melinda Gates Foundation has donated \$76 million in a "Purchase for Progress" program to support small farmer development programs.

U.S. food aid policy alters course slightly

The Bush administration proposed turning 25% of the food aid budget in the Farm Bill into cash. This was scaled back by Congress to a \$60 million pilot program. Nearly half of the money in the pilot program has already been spent in Ethiopia and a report is due back to Congress by mid-December 2008.

The United States is the world's largest food aid donor, accounting for approximately half of annual donations. Most U.S. aid is in the form of in-kind commodities, providing another market channel for wheat, soybeans, rice, and other items. Much of the other aid donated globally is cash from European countries, Canada, and large private foundations such as the Gates Foundation.

Through the efforts of NAWG and other farm lobbies, and with the assistance of the maritime industry, Congress has been protective of keeping the food in food aid. The \$60 million pilot program currently being done is being watched carefully by the U.S. Wheat Food Aid Working Group and other food aid alliance partners to see whether it will have any influence on the commodity-based U.S. food aid program. ✓

U.S. Wheat Chairman Edgar tells of his grower representation role



U.S. Wheat Associates' leaders for 2008-2009. From left: Ron Suppes (immediate past chairman - KS); Michael Edgar - chairman and AGRPC member; President Alan Tracy; Janice Mattson (vice chairwoman - MT); Don Schieber (secretary-treasurer - OK)

AGRPC member Michael Edgar of Yuma is the current chairman of U.S. Wheat Associates (USW), the producer-controlled non-profit wheat export market development organization. USW leverages producer funds with USDA funds to promote the sale and use of the various classes of milling wheat produced by U.S. growers in export markets around the globe. Edgar is in the third year of his four-year journey through the USW officer rotation and assumed the chairmanship in July. He recently answered some questions about his experiences.

How do you characterize the importance of the chairman as a representative of U.S. wheat growers? Of course, overseas buyers of U.S. wheat identify strongly with the USW staffers who work so diligently to promote the value of our market classes. Many of these loyal folks are of local or regional origin. So, one of the values of having a wheat producer-officer connect with foreign buyers is that they get to see just who is responsible for growing our wheat. They get to ask questions about how our wheat is grown and we have a chance to tell them how important they are to those of us who grow wheat.

As an example, I recently spent a couple of days working in a USW booth at an agricultural exposition in Munich, Germany. We entertained a continuous stream of visitors who wanted to know more about U.S.-grown wheat and who grows it. As the only American working the booth – the others were USW staff from European countries - I became the American wheat grower in the eyes of visitors.

What were some of your responsibilities before you became chairman? Remember that USW is managed by a very professional staff, many of whom have decades of service to the organization and its predecessors. The elected officers, such as myself, usually provide oversight and verification that the staff is carrying out policy for the board of directors, which consists of wheat growers appointed by the 18 state member organizations.

The secretary-treasurer, where the officer rotation starts, serves as chairman of the financial audit committee, so I did that. I chaired an office relocation committee, which resulted in USW purchasing office condominium space in Arlington, VA rather than continuing to lease prime office space in Washington, DC. I also served as co-chair of a

committee that investigated the feasibility of co-location of the USW and NAWG (National Association of Wheat Growers) offices. However, difficulties in reconciling the separate needs of the organization with the co-location options available led to tabling the idea during a recent joint meeting of the two boards.

What are the major issues facing USW's activities? At the moment, the financial aspects of selling wheat overseas dominate USW's effectiveness - some are negatives and some are positives. One negative is the strengthening dollar – it's making U.S. wheat more expensive for importers than it was at this time last year in relation to their own currencies. It is true that grain prices have dropped sharply over the past few months, but the dollar is still more costly than it was for wheat. Another huge negative is the "credit crunch." Most export wheat business is conducted with letters of credit on foreign banks. The recent blow-up in the financial markets and the ensuing credit freeze have created uncertainty in the international credit market. All this translates into less willingness on the part of exporters to sell wheat to buyers who have less credit available. It's a self-defeating circle. One positive note for wheat exports coming out of recent events is the big drop in ocean freight rates that has occurred while oil prices have declined.

Another on-going area of concern for wheat exports involves the validity of food safety and phytosanitary barriers put up by some importing countries. Restrictions implemented for reasons of weed seeds, diseases and chemical residues are not always based on good science and it's a constant battle to sort through on a country-by-country basis. We get a lot of help from various USDA agencies in this battle and we need it.

What current USW activities have engaged you? I can verify that anyone who agrees to take a leadership role in USW had best like to travel. Remember what I said about the officers being the face of the U.S. wheat grower? A year ago I was in Prague, Czech Republic for the North American-European Ag conference. Last May I met with a milling and trading association in Japan, which is traditionally among our largest wheat customers. I mentioned being in Germany in August at the 48th European Commodities Exchange. I'm off to China in early November as USW's representative on Monsanto's Agricultural Advisory Council, followed closely by USW Crop Quality Seminars in Morocco, Tunisia and Algeria right after Thanksgiving. At the end of the day, it is important for wheat producers to let buyers and overseas staff know that they are important to us and appreciated and USW officers fill that role.

Also, I chaired a USW board meeting in Dallas the first weekend in November, where we had a joint session with NAWG to coordinate our objectives and I'll chair similar USW and joint board meetings in Washington, D.C. in February. Helping to keep USW and NAWG working together for the benefit of wheat growers is a priority.

OK, you've traveled a lot on USW business, some not even mentioned – how do you assess the effective of USW in fulfilling its role of export enhancement? In two simple words: VERY EFFECTIVE. The people who represent USW in 15 foreign offices know their markets, know their customers and truly believe in the value presented by U.S. wheat market classes. They must be experts, given the diversity of the market classes of wheat that we produce and sell. Each class serves unique purposes and functions – some of which overlap but many do not. The customers need training in how to get the best value from our wheats – how to buy in our complex marketing system; how to buy the best wheat value for specific needs; how to understand various U.S. government purchasing incentives; how to use our wheats to improve flour milled from wheat obtained from other origins; how to use our

2008 Small grains research reports

By Dr. Mike Ottman, Extension Specialist, Department of Plant Sciences, University of Arizona College of Agriculture and Life Sciences, Tucson (Reports 1-5)

1) Predicting Wheat Growth Using the CSM-Cropsim-CERES® Wheat Crop Model

Computer models of the development of small grains are used to predict when the crop should reach various stages of development. The Small Grain Advisory letter that we have been issuing uses a model based on temperatures recorded at Maricopa Agricultural Center. This model works well at Maricopa but adjustments are required at other locations. A model that may more accurately predict crop growth stages in Arizona is called "CSM-Cropsim-CERES® Wheat." This model predicts crop development using a more physiologically complete approach that includes effects of photoperiod and vernalization (cold requirement for flowering) and considers differences in comparative earliness or lateness of varieties.

We used this model to predict flowering date for 12 durum varieties seeded in trials at Maricopa and Yuma from 1998 to 2006. These studies were conducted by the University of Arizona, Western Plant Breeders (WPB), and World Wide Wheat (WWW). Flowering dates were estimated by adding 7 days to heading date for the studies conducted by WPB and WWW. Weather data from the nearest AZMET station and yearly grain production data were entered into the CERES-Wheat program.

The difference between simulated and measured flowering date averaged 4 days without varietal genetic coefficients and improved to 3.5 days if genetic coefficients for flowering and vernalization were included for each variety. We concluded that CSM-Cropsim-CERES® Wheat can predict flowering date with reasonable accuracy and may be a useful tool for future wheat research.

2) Survey of Durum Production Practices, 2007

Durum growers were surveyed in cooperation with the USDA's National Agricultural Statistics Service to determine production practices and their association with yield and protein in the 2006 growing season. The survey was conducted in three regions: West (Yuma and La Paz Counties), Central (Maricopa, Pinal, and Pima Counties), and East (Cochise and Graham Counties) where most of the durum in Arizona is grown. We obtained responses from 83 out of an estimated 166 durum growers (50%) representing 46,331 out of 79,000 acres harvested (59%).

Durum was grown following cotton (41%), vegetables (27%), lettuce (16%), or other crops. The major varieties were Orita (30%), Kronos (25%), Ocotillo (16%), and Sky (11%). Herbicide was applied on 64% of the acreage. Flood irrigation systems accounted for 69% of the acreage, followed by furrow (17%). The crop was irrigated 6-7 times on average. The predominant soil texture was a sandy clay loam (36%), followed by sandy loam (35%) and clay loam (12%). The average planting date (germination irrigation applied) was December 21 in the Central region, January 4 in the West region and February 7 in the East region. The seed was planted at an average rate of 165 lbs/acre. Phosphorus was applied to only a third of the acreage, but when it was applied, the rate averaged 71 lbs P₂O₅/acre. Nitrogen rate averaged 224 lbs N/acre.

Increased grain yield was associated only with phosphorus

application in the West region; with certain varieties, fertilizer application, seeding rate of 120-159 lbs/acre, and nitrogen application rate over 200 lbs N/acre in the Central region; and, with a seeding rate of 140-159 lbs/acre in the East region. Increased grain protein was associated with a previous crop of lettuce, lack of phosphorus application, and number of irrigations in the West region; and, with a seeding rate of 140 to 159 lbs/acre and lack of phosphorus application in the East region. Readers should consider that this survey only documents associations, not cause-and-effect relationships, among durum production practices, grain yield, and grain protein.

3) Can Pre-plant Fertilization of Small Grains be Eliminated? 2008 Results

Nitrogen fertilizer costs have increased dramatically in the past few years and represent a significant proportion of the cost of production. In some cases, prospective grain field soils may contain enough nitrogen, as can be determined by a pre-plant soil test, that a pre-plant N application is not necessary. Even if a pre-plant soil test indicates that a pre-plant nitrogen application is warranted, perhaps this application can be delayed to save time at planting. This study was conducted at the Maricopa Agricultural Center on a sandy clay loam soil with a pre-plant nitrogen content of 4.6 ppm NO₃-N.

The results of this study support the practice of not applying nitrogen at planting time even if the soil N level is low. Highest yields were obtained when the normal planting-time N was delayed and combined with the N that is normally applied at the 5-leaf stage. However, if the pre-plant N application is skipped, a crop's nitrogen status must be monitored carefully and N fertilizer should be applied by the 5-leaf stage to avoid reduced yields. Also, large amounts of N applied at the 5-leaf stage may induce lodging.

4) Small Grains Variety Evaluation at Maricopa, Coolidge, and Yuma in 2008

Small grain varieties were tested in small plots this year in Maricopa, Coolidge, and Yuma as part of the on-going effort to assess variety productivity and characteristics. Commercial durum cultivars and experimental lines were tested. The purpose of these tests is to characterize varieties in terms of yield potential, relative maturity, quality, and other characteristics and to have some performance data on experimental lines when they are released. It is difficult to draw definitive conclusions about varietal differences from individual tests such as these since varieties are known to differ in their response to specific management regimes and weather conditions. Also, small plot variety trials do not substitute for localized on-farm testing of new varieties. A summary of small grain variety trials conducted by the University of Arizona is available online at <http://ag.arizona.edu/pubs/crops/az1265.pdf>.

5) Small Grain Advisory

A Small Grain Advisory was developed for Yuma, La Paz, Mohave, Maricopa, Pinal, Pima, and Graham Counties and distributed on a bi-weekly basis through County Cooperative Extension Offices and World Wide Web. The advisories began in January and ended in May. The advisories contain information on crop growth stage and water use throughout the season. Weather data from AZMET were used to estimate crop growth stage and water use. About nine Small Grain Advisories for twelve locations were developed and distributed via mail or e-mail, fax, or the web. This is the sixth year of the Small Grain Advisory. (<http://ag.arizona.edu/forageandgrain/smalladv.html>).

6) Use of a reduced-tillage barley and durum planting system after cotton

By Dr. Bill McCloskey, Extension Weed Specialist, Department of Plant Sciences, University of Arizona College of Agriculture and Life Sciences, Tucson (Principal Investigator)*

This study of reduced tillage, small grain-cotton rotational systems was funded jointly by the Arizona Grain Research and Promotion Council, the National Cotton Council, and the Arizona Cotton Growers Association during the 2004-2005 and 2005-2006 small grains-cotton production cycles. This project followed a 3-year research effort funded by the USDA Western Region Sustainable Agriculture and Research Education (SARE) grant program.

Replicated experiments and on-farm demonstrations comparing various combinations of conventional and no-till preparation of cotton fields ahead of barley or wheat planting and grain fields ahead of cotton planting were carried out in the two growing seasons referenced above.

No-till grain after cotton. This project documented the advantages of using a John Deere 1590 no-till grain drill or similar implement to plant barley or wheat on cotton beds after the cotton stalks were shredded. Similarly, wheat was successfully no-till planted on beds following lettuce harvest. By planting 3 or 4 drill lines per bed and not planting the drill rows in the furrows, small grain seeding rates could be reduced at least 25% while obtaining yields similar to broadcast, conventionally planted grain crops. Thus, considerable expense (\$40 to \$50/A) and time can be saved using a no-till planter to make the transition from cotton (and other crops such as lettuce and alfalfa) to a small grain crop.

Future work using this reduced tillage planting method could focus on measuring grain yield at even lower grain seeding rates and measuring the yield of various wheat varieties produced using this planting/growing system. Additional work could also focus on the appropriate herbicide treatments to kill the alfalfa crops in the fall ahead of preparation for no-till planting of grain crops.

No-till cotton after grain. In contrast to the positive results obtained in the transition from cotton to a small grain crop, cotton production in a reduced tillage barley-cotton double crop system presents numerous challenges. The data cited above and past experiments indicate that cotton can be successfully planted into barley stubble on beds using Yetter 2960/2967 combination coulters/residue managers attached to a conventional cotton planter. However, there is a yield penalty associated with the late planting of cotton following barley harvest. The primary fruiting cycle of late-planted cotton will occur during the summer when the potential for level II heat stress will threaten yield potential. The data also indicated that conventional tillage often has a positive impact on cotton growth and yield, probably mediated by root growth at some locations during some production years. Although tillage costs are saved in the no-till double crop system, more water is used due to slower advance times and increased infiltration, thereby increasing costs. Thus, no-till planting of cotton with Yetter attachments either on beds or in level basins is associated with the risk of substantially reduced yield that cannot be alleviated by altered irrigation management. In some cases the loss of income from reduced cotton yields cannot be recouped with the income gained from barley production in a barley-cotton double-crop rotation. At best, the barley-cotton double crop system can match the economic returns of conventionally-tilled cotton planted at the normal time; but there is substantial risk that economic returns will be reduced with the double-crop system.

*Contributing investigators from the College of Agriculture and Life Sciences were: Patrick Clay, Edward Martin, Kurt Nolte and Mike Ottman

7) Sources of cadmium taken up by durum wheat

By Dr. Charles A. Sanchez, Resident Director, Yuma Agricultural Center, University of Arizona College of Agriculture and Life Sciences

Ingestion of excessive amounts of the heavy metal cadmium (Cd) can cause hypertension, kidney impairment, genetic toxicity, immunotoxicity, neurotoxicity, and carcinogenicity in humans. Food is the major source of Cd exposure. The European Union (EU), a major Desert Durum® market, has established 200 parts per billion (ppb) as the maximum allowable level of Cd in crops and food. Durum wheat produced in Arizona often exceeds the 200 ppb threshold. Such durum grain cannot be sold into European countries without blending downward to meet the maximum tolerance. Cd is a natural constituent of many soils and most phosphate fertilizers. A study was undertaken to evaluate fertilizer as a potential source of Cd that can contribute to excess Cd accumulation in Desert Durum®.

Seven Arizona soils that were originally sampled and stored in 1972 were re-sampled in 2007. Analytical results from each year sampled were used to evaluate the effects of 35 years of fertilization and other management practices on Cd accumulation in the soil. The sources of heavy metals in the soil samples, whether native soil content or from fertilizers, can be inferred from measurement of metal isotopic ratios that are found in the samples.

Phosphate fertilizers commonly used in the region contain approximately 150 mg Cd/kg and typical fertilization rates (600 kg/ha) would suggest the potential for annual additions of 90 g Cd/ha. Nevertheless, results from the soil samples showed that there were no statistically significant increases in soil Cd after 35 years of phosphorus fertilization. These preliminary findings suggest that phosphorus fertilizers are not a significant source of the Cd that may be found in Desert Durum® wheat. Additional studies are underway to validate these findings and to evaluate other biotic and abiotic factors affecting Cd accumulation by durum wheat.



Edgar's Grower Representation Role , continued from page 5

wheats to make better baked products, and so on. We give guidance, provide consultants and make customers feel that they matter.

Foreign competitors for wheat sales don't necessarily have to deal with complex marketing systems – they may simply buy the business with under-market prices or with low quality grain. It takes diligence to counter those tactics. USW overseas staff certainly serves U.S. wheat growers' interests in coping with these issues.

What about the role of USW in promoting Desert Durum® in the export market? Do Arizona wheat producers get real value for the \$25,000-30,000 annual assessment AGRPC pays to be a full member of USW? As a Desert Durum® producer and handler, I can attest to the value that USW has provided to our industry. This is absolutely money well-spent. USW staffers in potential durum markets know all about Durum® and are constantly looking for opportunities to push it. Or, they are assisting new customers to mill it to best advantage, because Desert Durum® can't be milled to semolina in the same way as northern durum due to differences in moisture content. Special equipment and milling skills are needed to get the most value from our durum. Desert Durum® is as much an ingredient in making superior pasta and couscous as it is a commodity - buyers tend to use it to enhance and standardize their products. It is priced as a premium product in a commodity market. There are traditional buyers who will take certain amounts for that reason. Others will buy it when they can afford it or when it is competitively priced.

Another way to look at the value AGRPC receives from USW membership is simply the leverage we achieve by associating with the larger state members of USW. All member assessments are based on production, so AZ pays a pittance in assessments compared to other durum-producing states, for example. AGRPC assessments are only about 0.6-0.7% of the USW producer budget, yet Desert Durum® receives all the benefits of export enhancement that accrue to states that pay 10 to 30 times what we pay. On top of that, AZ producers benefit from the FAS funding that supports overseas office activities – usually about \$10 million annually.

So, I can confidently say that Arizona growers have a powerful ally in USW. We are fortunate to have the organization working on our behalf. ✕



North African and Middle East wheat markets are USW board team destinations. Executive Director Al Simons represented AGRPC members during a 12-day visit to Egypt, United Arab Emirates and Morocco in early March 2008. The small team included Wyoming wheat grower Tim Anderson and U.S. Wheat market analyst Ian Flagg. The trip was funded by the USDA's Foreign Ag Service. Egypt is one of the largest importers of U.S. wheat, while the UAE (Dubai, Abu Dhabi, Sharjah, et al.) is a growing market. Morocco is a potential customer for Desert Durum®. Left photo: Flagg (second from left), Anderson and Simons (center) meet with USW Cairo staff, including Regional Vice President Dick Prior (white shirt on right). Right photo: Simons (left rear), Flagg, George Galasso of USW/Rotterdam and Mina El Hachimi of USW/Casablanca listen to the quality control manager of a pasta plant in Marrakech, Morocco.

Research projects funded for 2008-2009

Development of durum wheat varieties with low cadmium (\$20,000) - California Wheat Commission on behalf of Dr. Jorge Dubcovsky, University of California, Davis

Soils in the desert valleys and lowlands of Arizona and California are often rich in native cadmium (Cd), a heavy metal that tends to accumulate in durum wheat grain. This tendency presents risks and/or blending costs for Desert Durum® that might be shipped to markets in the European Union, which limits the content of Cd in grain and foodstuffs to 200 parts per billion, a level that is often exceeded in Desert Durum®.

The level of Cd in durum wheat grain has high heritability and can be readily reduced through plant breeding. This project proposes to screen high-yielding public and private germplasm that meets Desert Durum® quality parameters for potential low-Cd character and to evaluate the best of them in field trials. A crossing block containing the superior public lines will be used to introgress the low-Cd gene into the various lines. Concurrently, a molecular marker will be developed that will allow rapid identification of the low-Cd lines.

Determination of evapotranspiration for Desert Durum® wheat using weighing lysimeters in the lower Colorado River region (\$8,407) - Dr. Charles Sanchez, Resident Director, Yuma Agricultural Center, University of Arizona College of Agriculture and Life Sciences

The objective of this report is to monitor evapotranspiration (ET) of durum wheat crops using new equipment developed at the Yuma Ag Center. The information gained will be used to derive new crop coefficients for ET that should allow producers to more efficiently schedule durum irrigation.

Improving P fertilization for Desert Durum® (\$14,407) - Dr. Charles Sanchez, Resident Director, Yuma Agricultural Center, University of Arizona College of Agriculture and Life Sciences

The objective of this project is to evaluate P fertilization practices that might reduce fertilizer costs without compromising grain yield. One of the proposed practices will be to apply P fertilizer in bands that will present the nutrient directly to the roots. The results of the project should produce data that can be used to improve fertilizer recommendations based on soil tests and method of application. ✕



DURUM

Alamo is a high quality durum with high test weight intended for the identity preserved market.

Crown is high-yielding, tall with good lodging resistance, late, and intended for the identity preserved market.

Duraking is a high-yielding, late variety with good lodging resistance and high test weight and is intended for the general purpose market.

Havasu has intermediate yield potential, medium protein, high test weight and is intended for the identity preserved market.

Kronos is an early-maturing variety with medium yields and is intended for the general purpose market.

Ocotillo is a high quality durum similar to WestBred 881 except is later, taller, and has a larger head.

Orita is a full season variety with high yield potential, good lodging resistance, and high grain protein content.

Platinum has high yield potential, high HVAC, short stature and is intended for the identity preserved market.

Q-Max is a selection from Crown that is later in maturity and higher yielding.

Ria is intermediate in yield potential and quality.

Sky is a short-statured variety with good quality characteristics.

Topper is a late maturing, high-yielding, tall variety with good lodging resistance, high test weight, and general purpose quality.

Westmore is most similar to Kronos except it is higher yielding, has smaller kernels, and the semolina is more yellow.

BARLEY

Baretta is a full-season, high-yielding variety.

Chico is a full-season, high yielding variety with excellent lodging resistance.

Cochise is a short-season, high-yielding variety intended as a replacement for Barcott.

Commander is a full-season, high-yielding variety with good lodging resistance.

Max is a very full-season, high-yielding variety.

Nebula is a full-season, high-yielding variety with high test weight.

Poco is a very short-season, lodging resistant variety developed for double cropping.

WHEAT

Cavalier has higher yield potential and later in maturity than Yecora Rojo.

Yecora Rojo is an early-maturing variety with stable yields and desirable quality characteristics.

Mention of a particular variety or company does not constitute endorsement by the University of Arizona Cooperative Extension. **Additional copies** can be obtained from your local University of Arizona Cooperative Extension office.

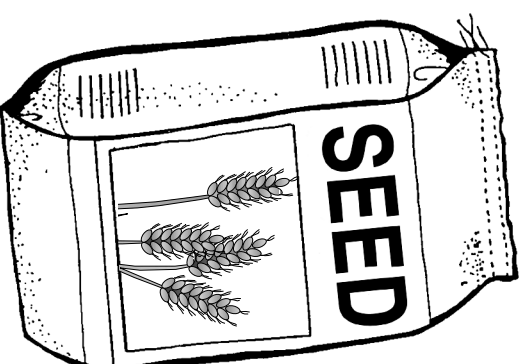
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THE UNIVERSITY OF ARIZONA[®]
COLLEGE OF AGRICULTURE AND LIFE SCIENCES

ARIZONA COOPERATIVE
EXTENSION

Small Grain Varieties

for Arizona 2008



MIKE OTTMAN
Specialist, Plant Science

AZ1265
September 2008

cals.arizona.edu/pubs/crops/az1265.pdf

This information has been reviewed
by university faculty.

 **THE UNIVERSITY
OF ARIZONA**
College of Agriculture
and Life Sciences

Summary of Small Grain Variety Characteristics for Arizona (2008)¹

Variety	Breeding Source ²	Grain Yield lbs/acre	Test Weight lbs/bu	Kernel Weight g/1000	Plant Height inches	Lodging %	Heading date	Maturity ³ date	HVAC %	Grain Protein %
BARLEY										
Baretta	APB	6684	52.5	45	32	14	3/19	4/25	•	•
Chico	WPB	6244	52.4	38	28	0	3/18	4/26	•	•
Cochise	WPB	6461	52.6	38	31	13	3/09	4/18	•	•
Commander	WWW	6319	51.6	43	32	11	3/21	4/27	•	•
Max	WWW	6628	52.4	44	31	20	3/24	5/01	•	•
Nebula	WPB	6324	53.2	47	33	13	3/18	4/25	•	•
Poco	AC	4692	51.7	38	22	0	2/24	4/05	•	•
DURUM										
Alamo	WPB	6052	64.0	50	36	32	3/23	5/01	99	14.0
Crown	WWW	6608	60.8	49	38	7	3/26	5/04	98	13.6
Duraking	WWW	6956	63.5	47	35	9	3/25	5/03	98	13.0
Havasu	WPB	6472	64.1	•	36	19	3/23	5/01	98	13.3
Kronos	APB	6408	62.7	53	35	33	3/21	5/01	97	13.4
Ocotillo	APB	6240	63.2	49	38	15	3/23	5/03	99	14.1
Orita	WPB	6698	61.8	52	35	4	3/28	5/05	98	14.2
Platinum	WWW	6748	62.9	45	33	16	3/25	5/03	98	13.0
Q-Max	WWW	6822	61.2	•	38	0	3/26	5/08	99	13.5
Ria	WWW	6482	62.7	46	37	17	3/27	5/03	96	13.2
Sky	APB	6267	61.3	45	33	24	3/23	5/05	99	13.1
Topper	WWW	6919	64.1	44	38	10	3/29	5/06	96	12.6
Westmore	APB	6630	63.6	•	35	41	3/23	5/02	97	13.3
WHEAT										
Cavalier	WWW	6648	62.9	45	32	11	3/26	4/29	•	13.6
Yecora Rojo	UC	6331	63.0	44	32	10	3/23	4/26	•	13.9

¹ Since not all varieties were in each test, performance was summarized using least-squares means. Most of this information is derived from trials conducted in Maricopa, Pinal, and Yuma Counties planted in late November thru December. Actual variety performance on commercial farms may differ from these results.

² Breeding source: AC=Anderson Clayton, APB = Arizona Plant Breeders, WPB = WestBred, WWW = World Wide Wheat, UC = U. of California.

³ Maturity: Physiological maturity, which is about 2 weeks before harvest ripe stage.