

2000 ANNUAL SEED SCHOOL AND SEED INDUSTRY MEETINGS

The Utah Crop Improvement Association and Utah Seed Council will jointly host Utah Seed Industry Annual Meetings and Seed School on February 11, 2000 in Brigham City, UT. We will meet at the Lincoln Center, 271 North 100 West, Multi-Purpose Room, starting at 8:45 a.m. with light refreshments.

Please return the enclosed postage-paid card immediately if you plan to attend so we can make arrangements for the luncheon.

SEED SCHOOL FEATURE

Biotechnology in plant breeding is a reality and GMOs (Genetically Modified Organisms) have been in the news a lot lately. "Green" groups, particularly in Europe and Japan, are demanding mandatory labeling of GM crop products, and university and private company research plots in Europe as well as the U.S. have been vandalized in the name of "keeping our seeds pure".

So what does this mean for us in Utah? Some of you have probably already used "Roundup Ready" hybrid corn varieties. Several other "biotechnology enhanced" (a better term than GM?) crops are now available, most of which offer insect or herbicide resistance. Others are in the wings that may offer inexpensive production of pharmaceuticals or industrial enzymes, or are nutritionally superior "neutraceuticals".

We have three people lined up to participate in a panel discussion that will hopefully put this all in perspective: David Hole, USU Plant Breeder, will explain, among other things, what GMOs are and how they are produced; Steven Kimball, Monsanto consultant, worked 20 years full-time for Monsanto and will give an industry perspective on the future of GMOs; Suzanne Wuerthele, Environmental Protection Agency Staff, will discuss GMOs in respect to social issues, genetic biodiversity, safety and security of the food supply, and government regulation. This promises to be a very interesting and provocative discussion and we encourage all members of the Utah Seed Industry to take part.

**UTAH SEED COUNCIL
and
UTAH CROP IMPROVEMENT ASSOCIATION**

Annual Meetings and Seed School

Lincoln Center, Multipurpose Room
271 North 100 West
Brigham City, UT
Friday, Feb. 11, 2000
8:45 a.m. to 4:00 p.m.

8:45 a.m. Pre-Meeting Social - Continental Breakfast

9:15 a.m. Welcome and Introductions
Richard Wilson, President, Utah Seed Council
Chris Allen, Director, District 2, Utah Crop Improvement Association

9:30 a.m. Panel Discussion
Genetically Modified Organisms: What are they, where did they come from, and do you dare grow GMO seed?

Panel Participants:

David Hole, Plant Breeder, USU
Steven Kimball, Monsanto Consultant, Kanosh, UT
Suzanne Wuerthele, EPA, Denver, CO

The Utah Crop Improvement Association CERTIFIED SEED GLEANINGS is published periodically to EPIC FOR THE PRODUCTION OF HIGH QUALITY AGRICULTURAL EXPT. STATION SEED CERTIFICATION SPECIALIST, & SECRETARY- Manager, Utah Crop Improvement Association

UCIA EXECUTIVE COMMITTEE:

Eli Anderson, President
Fred Wagstaff, Vice President
Chris Allen, Director

- 11:00 a.m. Break – Light Refreshments
- 11:15 a.m. Closing out the Century – A picture of Utah certified seed production
Stanford Young, UCIA, USU
- 12:00 p.m. Utah Crop Improvement Association Business Meeting
- 1:00 p.m. Luncheon - Hosted by USC and UCIA
Maddox Ranch House Restaurant
1900 S Hwy 89, Perry, UT
- 2:15 p.m. Utah Seed Council Business Meeting (at Maddox)
Presentation: TZ Seed Viability Testing – Are the Results Reproducible?
Stanley Kitchen, USFS Provo Shrub Lab
- 4:00 p.m. Adjourn

CRP AND THE RECLAMATION SEED INDUSTRY

Kerry Goodrich, NRCS Agronomist, SLC
(1999 Seed School Presentation
updated to January 2000)

The Conservation Reserve Program (CRP) was authorized in the 1985 Farm Bill to address erosion control and over-production of certain commodities. The 1996 Farm Bill broadened the objectives of CRP and changed the way the program is implemented. Current CRP objectives include soil erosion reduction, wildlife habitat development, and improved water and air quality. Encouraging these objectives is an ‘Environmental Benefits Index’ that provides a method to rank CRP bid offerings according to their environmental benefits. This encourages voluntary options such as using seed mixtures for enhancement of habitat for wildlife including threatened and endangered (T&E) species.

These options were coordinated with other governmental agencies such as the Utah Division of Wildlife Resources (DWR) and the United States Fish

and Wildlife Service (USFWS). The USFWS provided guidelines for cover and water habitat for T&E species such as the bald eagle. The DWR helped develop seed mixes that provide the necessary cover and food for various wildlife, and also agreed to fund a portion of the seed cost for growers specifying such mixes.

Recent CRP sign-up and renewal bids (March and October 1997, November 1998, and a current sign-up that will end on Feb. 11, 2000) for both existing and new seedings were evaluated on a point system whereby more points are awarded for increasing the species diversity to include native (and some non-native) grasses, forbs, and shrubs useful to wildlife. For instance, 10 points would be awarded for planting one introduced species versus 20 points for one native species. Up to 50 points can be awarded for planting a mixture that includes 2 or 3 grasses plus 2 or 3 legumes, forbs and/or shrubs.

Approximately 227,000 acres were enrolled in CRP during the 1985 program, while 200,000 acres were enrolled in 1997 and 1998 sign-ups. The bulk of these acres are in Box Elder, Cache, Utah, Juab, Millard, and

San Juan counties. Approximately 70% of the 1997 enrollment was existing CRP, of which 40% had adequate diversity as is (at least 3 species) and the other 60% required enhancement; the remaining 30% required new seeding. Enhancement can include interseeding or strip seeding of missing species. For instance, an existing 80% crested wheatgrass stand may be interseeded with alfalfa as a legume component. Or, if the bid was awarded for a more diverse planting, perhaps 50% of the crested wheatgrass stand can be tilled in strips and additional grasses, forbs, and shrubs seeded for overall field compliance.

Seed for some enhancement and new seedings is being provided by DWR (which obtains this seed from reclamation seed dealers) according to approved seed mixes developed by DWR, NRCS, and recommendations from the Interagency Forage and Conservation Planting Guide for Utah. Similar mixes are being specified for farmers obtaining seed on their In summary, the point system for current CRP encourages a more diverse species mix than did the 1985 CRP. This goal has been successful, especially those plantings in which the DWR participated in providing seed. To date, participation in seeding predominantly native mixtures has been limited, but all re-signed existing CRP stands and new seedings have much greater diversity than the 1985 program provided for. Utah seed companies have in general done a good job in providing the seed in the quantity and quality necessary to fulfill the requirements of the CRP program.

BARLEY VARIETY UPDATE

Dr. Rulon S. Albrechtsen

The most recent barley release from the Utah breeding program is the variety Millennium. Performance data (yield, heading date, height, lodging and percent protein) for Millennium and other comparative varieties tested at 4 Utah irrigated sites over a 3-year period (1996-1998) are summarized in Table 1. Yield and test weight comparisons for Millennium and check varieties present in the federally coordinated

own, though most non-DWR participating plantings are still based mostly on a smaller number of mostly introduced species. For instance, one approved "Big Game and Grouse Mix" for San Juan County (precip. $\square 13''$) where DWR provided the seed included (PLS lb/acre): bluebunch wheatgrass (1.0), thickspike wheatgrass (1.0), western wheatgrass (1.5), crested wheatgrass (0.5), pubescent wheatgrass (1.0), dryland alfalfa varieties (2.5), western yarrow (0.12), Lewis flax (0.25), sanfoin (0.5), small burnet (2.0), Wyoming big sagebrush (0.5), forage kochia (0.5), totaling 11.37 PLS lb/A.

As of the fall of 1999, about 75% of the re-signed CRP acres with existing stands have been upgraded as specified. Of the new seedings, about 30% were planted in the fall of 1998 and another 60% were planted in the fall of 1999. The remaining 10% plus current sign-ups will be seeded in the fall of 2000.

Western Regional Spring Barley Nursery grown at 23 locations in the western United States and Canada over a 2-year period (1997 and 1998) are shown in Table 2.

Millennium has the highest yield (averaged over locations and years) of any variety or breeding line with which it has been compared in Utah irrigated tests and in western regional tests. Its yield has exceeded that of Steptoe by 16.4 bushels per acre in Utah irrigated tests (Table 1) and by 13.2 bushels in western regional tests (Table 2). Millennium (Table 1) heads 1 day later than Steptoe, averages 1 pound heavier in test weight and 0.6 percentage point higher in protein content, and is about 2 inches shorter than Steptoe with much more lodging resistance (2% vs. 53% lodged).

Millennium has many qualities similar to those of the most recent USU barley release, Brigham, but it grows about an inch taller, is 0.6 pound heavier in test weight, and has produced 8.6 bushels per acre higher yields than Brigham in Utah irrigated tests. Compared with Statehood barley, presently the most widely grown USU release in Utah, Millennium is the

same height, but shows even less tendency to lodge (2% vs. 14%), has almost a pound higher test weight per bushel, and yields about 5 bu/acre more with only a slightly lower protein percentage (Table 1).

Because of its relatively short, stiff straw and very high yield, Millennium appears to be best adapted for production under high yielding, irrigated conditions.

It has performed similar to Steptoe under dryland conditions. Preliminary tests have also shown Millennium to have some resistance to barley stripe rust, which has recently become a threat as a new barley disease in our area.

Plant Variety Protection will be applied for Millennium, and it will be offered for production under non-exclusive license agreements similar to other USU released barleys. About 9000 lb of Foundation seed of Millennium was produced at Logan in 1999. This will be allocated to licensed certified conditioners/growers in the spring of 2000.

This means that there should be ample Registered seed and a fair supply of Certified seed available by the spring of 2001.

WHEAT VARIETY UPDATE

The most positive aspects of Golden Spike are its excellent milling and bread making qualities demonstrated in many tests, including the Pacific Northwest Wheat Quality Council collaborative test in 1998. Golden Spike has also been evaluated as having good potential as a noodle wheat. Preliminary test of starch viscosity and alkaline noodle color have been very promising over the past few years and a large sample was submitted this year to the overseas noodle collaborative test managed by the Wheat Marketing Center.

Golden Spike is being released to provide growers with one more option in growing and marketing wheat since there may be some markets that prefer hard white wheat. Golden Spike will be protected under the Plant Variety Protection Act.

Dr. David Hole

The Utah Agricultural Experiment Station has approved 'Golden Spike' hard white winter wheat for release. Golden Spike is derived from the cross 'Arbon/Hansel/4/Hansel/3/CI14106 / Columbia // McCall' and was released to provide high yield and excellent milling qualities in a hard white winter wheat for dryland conditions.

Golden Spike has a high level of resistance to current prevalent races of dwarf bunt. While Golden Spike will yield well under irrigation, it does not resist lodging as well as Promontory or Utah-100. Typical of white wheats, it is also somewhat susceptible to preharvest sprouting if conditions are wet after maturity. Golden Spike yields two to three bushels/acre less than Promontory and Utah-100 over all six county locations when averaged over the past six years (1994-1999 crop yields). Over those same nurseries, Golden Spike yielded one to two bushels/acre more than Weston and two to three bushels/acre more than Bonneville. Test weight is similar to Utah-100.

NOTE: Information about Golden Spike licensing from the Office of Technology Commercialization at USU: UCIA has been authorized as the licensing agent for Golden Spike.

General Mills Operations, Inc. will have exclusive seed and grain production license rights outside of Utah and will contract with their growers for seed and

grain production. It is expected that other qualified groups will be able to participate in Golden Spike seed and commercial grain programs under agreements with General Mills.

UCIA will offer non-exclusive certified seed production licenses to Utah seed conditioners/growers similar to those for Garland Wheat, Statehood Barley, Walker Barley, etc. However, commercial grain growers purchasing certified Golden Spike seed from Utah licensees will be required to sign an agreement stating that they will plant the seed (and progeny of such seed in accordance with PVP farmer exemption stipulations) only on properties located within Utah. This means that Utah wheat growers may: a) produce

Golden Spike certified seed for Utah licensed conditioners/dealers, b) market Golden Spike grain originating from Utah certified seed (and Utah properties) as they see fit, c) seek to contract with General Mills to produce Golden Spike certified seed (to be delivered to General Mills conditioning plants), d) seek to contract with General Mills for Golden Spike grain production.

UCIA OFFICERS AND DIRECTORS

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Directors elected by the membership at the 1999 Annual Meeting (Feb. 11, 1999) were:

District 1: Eli Anderson District 4: Fred Wagstaff District 6: Bryce Dalton District 7: Loni Hammond

Kent Perry, Wheatland Seed, was appointed ex-officio Director representing the seed conditioners;
Phil Adams, Oasis Seed, as alternate.

Officers elected at the Board of Directors Meeting (March 31, 1999 at the Homestead in Midway, UT) were:

President: Eli Anderson, Bothwell Vice President: Fred Wagstaff, Wallsburg
Member Exec. Committee: Chris Allen, Cove

NOTE: Members of the Association in District 2 (southern Box Elder County and Cache County), District 3 (Wasatch Front Counties), and District 5 (northern Millard and Juab Counties) will be receiving ballots shortly to choose their nominees for Director, 2000-2002.