

2002

ANNUAL SEED SCHOOL AND SEED INDUSTRY MEETINGS

The Utah Seed Council and Utah Crop Improvement Association will jointly host the Utah Seed Industry Annual Meetings and Seed School on Friday, Feb. 15, 2002 in Brigham City, UT. We will meet at Bridgerland Applied Technology College on 1100 South (main access road from I-15 to Hwy 89/91 and Logan) in conference room 103, starting at 8:30 a.m. with light refreshments. *See next page for complete program.*

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

WEEDS, INVASIVE WEEDS, AND WEED CONTROL

Dr. Steve Dewey, USU Extension Weed Specialist
(Report from 2001 Seed School)

Dr. Dewey said that a good, simple, to the point definition of a weed is any plant that someone will pay him to kill. However, some people have been offended that some of their favorite plants have been called weeds. For instance, sagebrush has been included in the book "Weeds of the West." But if your objective is to grow grass for your cows on your ranch, then sagebrush can interfere with that objective. If the objective for the site is to grow food for deer and sage grouse, then sagebrush is a very valuable plant and smooth brome and tall fescue might be the weeds.

Noxious weeds are those designated by governmental bodies as being especially damaging to ranching or agriculture or wildlands, and regulations are put in place to prevent the spread of such plants. Invasive weeds are those that crowd out other desirable plants, but again, such a designation is highly dependent on the objective for the site. Native juniper can be considered invasive in some situations. But it is the exotic, noxious, invasive weeds that are presently getting a lot of attention at the national level. The

Invasive Species Council was set up by U.S. Presidential Executive Order (Feb. 1999) to manage invasive species on Federal lands, and the Council in turn formed an advisory committee of 32 people to provide expertise. Dr. Dewey is one of those people. The national management plan has been approved and can be accessed on the web site, www.invasivespecies.gov. Basically what it says is that many exotic plants, animals, insects, etc. are invading the U.S. and identification and control efforts have to be beefed up to mitigate the serious consequences to environmental and human health. Federal budgets are increasing to funnel money to control efforts, and Dr. Dewey is responding to an increasing number of requests for weed control advice from land management agencies such as the Forest Service and BLM.

There is a big difference between the concept of management of an exotic noxious weed and total eradication. Eradication is rarely possible economically, though there are examples where small infestations of a weed (i.e., leafy spurge in Sanpete County in the 1930's) were repeatedly treated and actually eradicated. Much more common is decreasing the incidence to a point where damage to the

environment is minimal and manageable. Mechanical and bio-control methods are receiving a lot of emphasis,

A difficult issue that is still being discussed and resolved is where to draw the line on exotic vs. useful vs. invasive and damaging. Many ornamental plants that have been purposefully introduced (such as purple loosestrife, Russian olive and tamarisk) have become extremely damaging to native environments. Some environmental groups have followed that thought to the extent of wanting to eradicate exotic crop plants such as tall fescue, wheat, soybeans, etc. But generally more moderate thought has prevailed, and efforts are underway to develop criteria and ranking methods that will concentrate efforts on truly potentially damaging exotics depending on the site that is impacted. In National Parks, alfalfa and timothy may be considered undesirable exotics because a fully natural and native ecosystem is the goal. For much larger fire rehab projects on BLM and Forest Service lands, there seems to be more leeway though official emphasis is placed on using native plant seed. But non-native (those considered non-invasive) species may also be used according to seed availability and economic reality.

As far as weed control in seed production of grasses and forbs, Dr. Dewey recommended several publications. Specifically, the Tri-State Weed Management Handbook (Montana, Utah, and Wyoming Extension Services) and the Pacific NW Handbook for Washington, Oregon, and Idaho are helpful. For national scope, the Meister Pesticide Guide has a lengthy section on grass seed weed control. Also available are on-line label sources that list complete pesticide labels (see www.greenbook.net) All these publications collectively list the herbicides available, cautionary advise, application rates, timing, etc., for use in compliance with the labels.

One thing to keep in mind is that all herbicides for grass seed production are not registered for use in all areas of the U.S. A lot of work would have to be done before a Section 18 (Emergency) or 24C (Special Local Needs) could be applied for this area, but it is possible. Some of the promising herbicides not labeled for this area are Karmex (used in the Northwest with

though herbicides are still the backbone of most efforts.

charcoal to protect the seedling grass rows), Dual, and Prowl.

There are some new herbicides and some old repackaged herbicides available for grass seed production. Banvel is now being sold as "Clarity." Glyphosate (Roundup) is now being marketed by several companies since the patent has run out. A new product is called Frontier. It controls seedling grasses and broadleaves with a pre-emergence application in established grasses. Stinger and Curtail have a similar active ingredient to Tordon, but are shorter lived and very active on thistles and composites such as knapweeds.

As far as herbicides for forbs or wildflowers, Dr. Dewey could find none that are actually registered for seed production. There are some in use for growing ornamentals and establishing flower beds that could be effective. The Section 18 or 24C route could be considered here also.

SEED ORIGIN AND BLM RECLAMATION SEED BIDS

Cindy Fritz, Boise BLM Seed Warehouse
(Report from 2001 Seed School)

Cindy Fritz reported that the purpose of the seed warehouse is to procure seed for reclamation projects in the Great Basin area. Categories of seed accepted on bids are 1) Certified, which includes regular Certified Class blue tag for varieties, and Selected Class (green tag) or Source Identified (yellow tag) for germplasm accessions either wild collected or grown in a field; 2) non-certified*; and 3) specified origin (requiring a signed statement of origin from the collector)*. Certified seed is preferentially accepted on bids at higher prices (within reason). Wild collected Source Identified seed is produced following detailed protocols of permitting, site inspection, warehousing, seed conditioning, and tagging by official seed certification agencies. (See Utah Crop Improvement Association "Checklist for Wildland

Collected Seed” and “Site ID Log” on last page of this newsletter).

Permitting for seed harvest on BLM lands is unfortunately not uniform as to format or pricing across Districts. However, different permit format reflects different situations of collection site, species, and protection of the resource. Several permits on a non-exclusive basis may be written for some areas,

Presently, seed is accepted from a generalized zone including Oregon, Wyoming, Idaho, and northern areas of Utah and Nevada. Plans are to delineate more specific zones so seed can be matched better to area of use. This may entail greater use of local seed collection contracts in conjunction with the Source Identification program. Expansion of warehousing capabilities would facilitate this effort, since emergency bids usually means being less fussy over seed origin and quality.

The BLM tries to consolidate seed needs into major bid events, which are published in the Commerce Business Daily and can be accessed through the BLM website. The spring bid is intended to fill the warehouse, but emergency bids in the fall are mainly in response to fire events.

*(Editors note: It should be pointed out that (non-certified) seed labeled with a variety name is not verifiable and may not actually be that variety. Therefore, seed procurement bid sheets of any agency or company should solicit, for example, Goldar, Whitmar, P7 Germplasm, or Anatone Germplasm bluebunch wheatgrass only as certified seed (blue tag or green tag as applicable). Non-certified bluebunch wheatgrass should be solicited only as VNS (variety not stated). By the same token, “specified origin” seed is not really verifiable, since it is almost impossible to check up on a statement of origin by the collector/seed broker. So wild collected seed should be solicited on bids as either 1) Source Identified or 2) “origin not specified”.

UTAH ORGANIC STANDARDS

Seth Winterton, Utah Dept of Agric./SLC
(Report from 2001 Seed School)

Seth Winterton presented information on the new program in Utah for organic food production. The

while others are awarded by bid for exclusive collection. Areas may be broad or narrow with differing amounts of restrictions as to harvest methods and vehicle access. BLM resource personnel may enforce permit particulars, including location, number of pounds specified, etc., and it is planned in the next year to step up enforcement efforts.

effective October 17, 2000. Since the publication of the USDA Federal Rule, the Department is reviewing the State Rule and may make substantial changes, which include recommendations by comment, and any adjustment to comply with Federal Rule. It is expected that the Department may begin to take application for certification March 1, 2001.

Mr. Winterton provided copies of the publication R68-20, Utah Organic Standards. Pertinent definitions, answers to frequently asked questions, and fee structure are summarized here:

Organic food is food that is grown and processed without the use of synthetic chemicals. Organic crops are grown without the use of synthetic fertilizers or pesticides for at least three years prior to harvest. Cover crops, compost and other natural fertilizers are used for maintaining soil fertility; biological control and natural pesticides are used for pest control.

Organic livestock production requires that animals are fed organic feed, have access to pasture or the outside, and prohibits the use of antibiotics and hormones.

Certified organic means that an independent third party has verified that all organic standards have been met. Products that are intended to be sold, labeled or represented as “organic”, “100% organic”, or “made with organic ingredients”, must be from certified organic sources according to Utah state law.

Organically-grown seeds, seedlings, and planting stock (with some exceptions) are to be used to produce organic crops.

Organic certification is an annual procedure. An application and fee will need to be submitted to UDAF every year. An Organic Food Program Inspector that has been federally accredited by the USDA, and fully qualified to certify for UDAF will inspect organic production areas, ask questions

review organic production and sales records.

Fee Schedule: An annual registration (license) costs \$100. Hourly fee for inspections is \$23.00 (\$34.50 for overtime or holidays or weekends); laboratory fees as listed by the State Chemist, and travel and per diem charged at current state rate. In addition, Gross Sales Fees range from \$50 for annual sales of \$5001-\$10,000 to \$2000 for annual sales over \$500,000.

LEWIS FLAX–NATIVE OR EXOTIC– CULTIVAR OR WEED: IMPLICATIONS FOR GERMPLASM DEVELOPMENT

By Stanley G. Kitchen

USDA Forest Service, Shrub Sciences
Laboratory, Provo, UT

In times past, plants growing in wildland settings saddled with the dual liabilities of no perceived positive attributes (e.g. livestock forage) and substantial negative attributes (e.g. invasiveness or poisonous) were quickly labeled as weeds. Management practices were often modified to do battle with these ‘bad’ plants. On the other hand, when a species was deemed to be useful, resources were commonly mobilized to spread the favored species through wildland plantings. In more recent years, some segments of society have adopted new criteria for assigning value to plant species on wildlands. For many, the distance (genetic, ecological, and/or geographic) between seed origin and proposed planting sites is a principal consideration. For these, monikers such as native, exotic, site-specific, introduced, and alien become value labels in addition to descriptions of origin.

A brief review of the development and use of perennial flax in western United States wildland plantings provides an example of how these changing philosophies can impact plant development programs. In 1980, after several years of evaluation, a selection of perennial flax collected from the Black Hills of South Dakota and believed to belong to the North American native, Lewis flax (*Linum lewisii*), was released as an interagency cultivar named ‘Appar’ (Howard and Jorgensen 1980). Appar flax has proven to be widely adapted, a good seed producer, and relatively easy to establish; a suite of characteristics not found in many

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native forbs. Subsequently, it has been used extensively as an ornamental (e.g. roadside stabilization) and in plantings for wildlife habitat improvement, erosion control, and wildland restoration.

Just over a decade later, research conducted at the USDA Forest Service, Shrub Sciences Laboratory demonstrated that Appar belongs, not to the North American species, Lewis flax, but to its European cousin, perennial blue flax (*L. perenne*; Pendleton and others 1993). This determination was made from morphological comparisons of floral anatomy and reciprocal crosses which produced viable seed from European x Appar crosses but no viable seed from European x American nor Appar x American crosses. Thus clear differences were identified between the two species, with Appar belonging to the European species, blue flax. In spite of these findings, Appar continues to be marketed as a native forb.

Not everyone chose to ignore these findings. Primed by the possibility that not all of the flax observed in natural settings is native (and perhaps subconsciously sensitized to name which included the word ‘flax’, as in toadflax), a few members of the Colorado Weed Management Association (CWMA) became aware of what they believed to be populations of “blue flax” invading natural communities from Appar plantings. Ultimately, “blue flax”, or *L. perenne* var. *lewisii*, was featured as an “invasive ornamental” in the Fifth Edition of the CWMA handbook, “Troublesome Weeds of the Rocky Mountain West”. After persistent protests by the Colorado seed industry, the CWMA organized a workshop for weed managers, seed industry representatives, and plant materials specialists in

Durango, CO in August 2000. At this workshop flax sites were visited and differences and similarities between the two species were clarified resulting in a near-unanimous conclusion by those present that neither native Lewis flax nor introduced blue flax should be considered invasive and that blue flax should

Prior to the discovery of Appar's true origin (1988), the Shrub Sciences Laboratory initiated studies to evaluate variability in Lewis flax for seedling vigor, drought tolerance, plant longevity, rust resistance, and seed production using collections from 6 western states and Appar flax (Kitchen 1995). Several accessions rated equal or superior to Appar in one or more categories. However, no collection was equal to Appar for 2-year seed production. One accession, 'Maple Grove', scored high in all categories and was selected for further seed production evaluation. Small production plots of Appar and Maple Grove were established from direct seeding in drill rows. Initial establishment and vigor of Maple Grove plots exceeded that of Appar plots. At one site, seed production for Maple Grove flax in the second growing season was over 550 lbs. per acre (Appar production was 615 lbs per acre). Long-term yield data for Appar at this site is 720 lbs. per acre. Production will continue in order to determine long-term yield potential for Maple Grove flax. Production data support the belief that Maple Grove seed yield may approach 70-90 percent of that for Appar. Seed increase fields are scheduled for planting in the Spring of 2002. A **Selected Class, Pre-Variety germplasm release** is anticipated as seed reserves become adequate.

Thus we see how a correction regarding our understanding of the origin of Appar flax, a well accepted cultivar, resulted in a change in how it was valued and in the potential restriction of its use. Such a restriction will likely amplify any opening in market space, increasing the probability of the acceptance and use of the native, Maple Grove germplasm.

References

Howard, C.G.; Jorgensen, K.R. 1980. 'Appar Lewis flax (*Linum lewisii*, Pursh) description, adaptation, use, culture, management, and seed production. U.S. Department of Agriculture, Soil Conservation

Service, Plant Materials Center. In addition it was agreed that protocols for designating weed status would need to be developed to avoid future mistakes of this kind.

Service, Plant Materials Center.

Kitchen, S.G. 1995. Return of the native: a look at select accessions of North American Lewis flax; p. 321-326. In: Roundy, B.A.; McArthur, E.D.; Haley, J.S.; Mann, D.K., comps. Proceedings: wildland shrub and arid land restoration symposium; 1993 October 19-21; Las Vegas, NV. Gen. Tech. Rep. INT-GTR-315. Ogden, UT: U.S.D.A. Forest Service, Intermountain Research Station.

Pendleton, R.L.; Kitchen, S.G.; McArthur, E.D. 1993. Origin of the flax cultivar 'Appar' and its taxonomic relationship to North American and European perennial blue flax. Wildland shrub and arid land restoration symposium. Abstracts. Provo, UT: Shrub Research Consortium: 23.

VNS LABELING STATUS

Barley, Triticale, Wheat

Changes to the Utah State Seed Law which would disallow VNS labeling for small grains were proposed by the UCIA Board of Directors in March 1999. The idea was that this would help in enforcement of PVP laws since VNS labeling "plus a whisper" identifying the variety would no longer be an option. A motion was made and passed that the no VNS idea for small grains be forwarded on to the legislative analyst for proper wording and research that would be required to incorporate it into the seed law.

Eli Anderson, President of the UCIA and also a state legislator, was instrumental in shepherding the proposed change through the legislature in February of 2000. Intent language connected with the change singled out wheat, triticale, and barley as the target species for potential rule change to disallow VNS labeling, and specified that the seed industry, Utah Seed Council, and UCIA should all have proper input before any rule is implemented.

The actual rule change was proposed by the UDAF in early 2001, a public learning was held on March 22, final comments were concluded by April 14, and the effective date was April 15, 2000.

The implications of this law (Utah Seed Act 4-16-4.(1)(a)(i)) and rule (Agriculture and Food, Plant Industry R68-8-7.B) changes were reiterated at the 2001 Seed School in Provo for those in the seed industry that hadn't been brought up to speed. It is hoped that the requirement that "barley, triticale, common wheat, and durham wheat" be sold by variety name only will help prevent "bootlegging" of PVP varieties.