Sustaining the Pacific Northwest

Food, Farm, & Natural Resource Systems

September 2006 Volume 4, No. 3

Washington State University Extension
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"The Future of Food"
November 10-12
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Vancouver, Washington

Buy Local
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Biofuel Feedstocks in Washington

Hal Collins, USDA-ARS Vegetable & Forage Crops Research, **Steve Fransen**, **&** **An Hang**, WSU Prosser Irrigated Agricultural Research and Extension Center

As petroleum prices rose and public support for alternative fuels broadened in early 2005, the production of bioenergy crops attracted ever-increasing attention in the political, environmental, and commercial arenas across the country. America's dependency on foreign oil, currently over 60 percent and rising, poses not only an economic issue, but one of national security, especially in times of global unrest. These factors, coupled with environmental concerns over fossil fuel use and carbon dioxide production, fostered the expansion of the ethanol fuel industry and made ethanol a high priority issue for the USDA. The ethanol and biodiesel industries have undergone unprecedented growth over the past several years. The current U.S. ethanol and biodiesel industry capacity exceeds 3.5 billion gallons per year, with a proposal to increase production to 7 billion gallons by 2012. Most of this growth occurred in farmer-owned plants, which collectively represent the single largest producer in the country. The biofuels industry has become an important partner with American agriculture, and the USDA estimates 17,000 jobs are created for every billion gallons of biofuel produced. A nascent Pacific Northwest (PNW) biodiesel industry has also developed in recent years.

In addition to U.S. transportation needs, agriculture itself is a likely market for alternative fuels. Low-cost alternative fuels can be used to power farm equipment and small agricultural production as well as processing facilities within rural communities. A PNW biofuel industry has the potential for assisting rural and farm development, aiding our national security through increased reliance on domestic renewable energy, and mitigating environmental concerns, such as greenhouse gas emissions. For example, EPA approved renewable fuels such as biodiesel, can be produced either from regionally farmed oil seed crops or from recycled vegetable and animal fats. Thus, development of biodiesel crushing and processing plants within the region could effectively add to state and, in particular, rural and/or farm economies by utilizing area commodities and creating jobs.

Over the past two years, twelve biodiesel and ethanol facilities have been proposed for the Columbia Basin of Washington and Oregon, with annual production capacities of 30 million gallons biodiesel and 290 million gallons of

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Center for Sustaining Agriculture & Natural Resources

Washington State University COOPERATIVE EXTENSION food&farm CONNECTION

Sustaining the Pacific Northwest
Food, Farm, & Natural Resource Systems

This quarterly newsletter provides a discussion forum for people working towards community-based sustainable food, farm, and natural resource systems using interdisciplinary oriented research and practitioner knowledge.

This is a joint newsletter of the WSU *Center for Sustaining Agriculture & Natural Resources*, the *WSU Small Farms Team*, the *WSU Small Farms Program* and the *Water Quality Management Team*.

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ethanol (TriCity Herald, Jan 22, 2006). Since 2003, the Integrated Cropping Systems group (comprised of WSU and USDA-ARS personnel) at Prosser, Washington, have been evaluating production potential for a number of biofuel crops: oilseeds (safflower, soybeans, mustard, canola/rapeseed) for biodiesel and biomass producing crops (wheat, corn, and switchgrass) for ethanol production in high-value irrigated vegetable rotation procuction systems. These unique trials are the first of their kind within Washington State and could provide essential early information on production potentials as the nascent bioenergy industry develops.

Biodiesel Feedstocks: Oilseed Crops

Biodiesel has been produced from soybeans, sunflower seed, cottonseed, canola/rape seed, crambe, safflower, flaxseed, and mustard seed. Soybeans are the most commonly used fuel feedstock in the US and rapeseed is the primary feedstock used in Europe.

Canola, rapeseed, and mustard fit well into both dryland and irrigated crop rotations and will likely be the principal feedstock of the PNW. Although similar to rapeseed, canola produces an edible high-quality oil and ready-to-feed high-qaulity meal which are low in erucic acid and glucosinolates when compared to rapeseed. Canola has been commonly grown in rotation with small grains, beans, potatoes ,and onions and has been shown to break pest cycles (weed, insects, and diseases) and thereby minimize synthetic chemical usage for the crops that follow it. An added advantage of canola and rapeseed is that planting and harvesting equipment is similar to that used in small grain production.

Canola, rapeseed, and mustard are relatively new to Washington, and growers are just beginning to master the production and management needs of cultivars that are well suited to Washington's cool winters and hot summers. Different cultivars are suitable for spring or fall planting. Planted in late March or early April, the spring-planted cultivars will be ready for harvest in 100 to 120 days. Winter cultivars can be planted in late August or early September (depending on location) and will be ready for harvest in about 10 months (June or July)

Spring-planted canola and rapeseed yields range from 1500 to 2000 lbs per acre under irrigation. Yields of fall-planted canola/rapeseed are

Canola.

normally double that of the spring-sown cultivars. Both spring and fall cultivars require 10 to 12 inches of water. Fall-planted cultivars use residual soil moisture accumulated during winter months and use less irrigation water. Canola and rapeseed deep root systems allow them to not only access soil moisture, but also residual nutrients left from the previous crop (e.g., potatoes). By taking up nutrients leached below the root zone of the previous crop, they can reduce ground water contamination. In addition, their deep root systems break down hard pans. Fall-planted canola has the additional advantage of protecting soil from erosion in hilly areas with high precipitation.

Fall-planted canola/rapeseed has higher flowering rates and better seed set than the spring-planted crop. High summer temperatures cause premature flowering (bolting) and seed abortion, resulting in the low yields of spring-planted cultivars. In addition, fall-planted cultivars escape summer aphid infestation and are not threatened by late season frosts.

Canola/rapeseed are not hosts, nor are they susceptible to Russian wheat aphid, Hessian fly, and certain wheat diseases, such as take-

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all (Gaunmanomyces graminis) and eyespot (Pseudocerospoelle hepitricoides). In rotation, canola/rapeseed reduces the levels of these pathogens in subsequent wheat crops. In addition to these benefits, growers will return more organic residues to the soil, thus enhancing soil organic matter. Pests of canola/rapeseed include flea beetles, aphids, and the cabbage seedpod weevil. The most serious pathogen is Sclerotina white rot.

In the past, Washington shipped rapeseed/canola out of the area for processing. Crushing facilities under construction in Eastern Washington will increase demand for oilseeds to supply high-value meals and oil, as well as other value-added products (formulated feeds, proteins, amino acids, etc.) which can be marketed locally. These additional value chain materials will reduce the cost of production and also open new markets to growers. Oil-free meal would be a high protein feed source for livestock. The emergence of a biodiesel industry will provide an additional outlet for this oil. High erucic acid cultivars could be used for biodiesel production and high glucosinolate meal would benefit organic farming and/or serve as a bio-pesticide potting soil additive to reduce houseplant insect, weed, and soilborne disease infestations.

Other Biodiesel Feedstocks

Mustards (Brassica spp.) tolerate drought better than canola or rapeseed, but yields only 25% to 30% oil, compared to 40 to 45% for canola and rapeseed. Mustards can be produced on marginal soils, but respond well to fertilization and water applications. In the PNW, mustard is commonly planted as a green manure crop prior to potatoes and its use has resulted in reduced chemical inputs in potato production systems. This is due to the high concentrations of glucosinolate compounds found in mustard meal.

Mustard.

Since 2002, the Integrated Cropping Systems (ICS) group in Prosser, Washington, has recommended that growers include oilseed cover crops containing glucosinolates into their rotations to control soil pathogens and to protect soil resources. Research by Andy McGuire (WSU Extension) showed the incorporation of these cover crops offset soil fumigation costs by up to $100 per acre. As a result, mustard oilseed cover crop acreage increased from 400 to 20,000 acres in recent years. To further improve farm profitability, the ICS group has investigated the productivity of the cover crop to produce seed while maintaining the desired benefits of biofumigation. Currently, mustard cover crops and other oilseed green manures are incorporated in the fall prior to reaching seed maturity. For the past three years a number of oilseed crops have been investigated to fill a feedstock niche for the emerging biodiesel market. These studies are designed to show how oilseed crops fit into high-value irrigated vegetable cropping systems.

While mustard oil can be used as a biodiesel feedstock, its high glucosinolate meal can be used as a soil fumigant which suppresses nematode and weed populations, and as a fertilizer for organic or horticultural production.

Safflower (Carthamus tinctorius) belongs to the Compositae family and can be used for food, flower arrangements, medicines, or dyes. Safflower can tolerate extreme weather conditions. It is considered a low input and drought tolerant crop, but it responds well to irrigation and fertilizer. Planted in early spring, it reaches maturity in about five months in Washington, yielding 3000 to 3500 pounds of seed with oil concentrations of 42 to 48%.

Safflower.

Soybean (Glycine max) grows very well in the PNW with irrigation when the proper maturity group is chosen. The southern Columbia Basin requires early varieties of maturity groups 00, 0 or 1 to produce well. High yields require innoculating soybean seed with *Bradyrhizobium japonicum*, especially on land not previously planted to soybean. Soybean yields range from 3500 to 4000 pounds per acre under irrigation. Soybeans posses a lower oil concentration (15-20%) than canola or rapeseed, but its high protein meal provides a high quality livestock feed.

Soybeans.

While other oilseed crops, such as meadow foam, camelina, and crambe, grow in central Washington, weed problems and low economic returns make them a risk at this time.

Summary of Field Research

Table 1 presents results from field trials at Paterson, Washington which included only spring-planted cultivars. Crambe performed the poorest due to significant weed competition and the lack of herbicides available to

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Table 1: Biofuel Variety Trials at Paterson, WA Preliminary Yield Data (2004-2005)

	Crop/ Variety	Yield (lb per acre)	Oil (%)	Biodiesel Yield (gal per ac)	Acreage to Support 5 Million Gallon Facility
Crambe	Belann	830	11.6	12.6	397,445
	Meyer	1056	17.3	23.9	209,430
Spring Mustard	Idagold	1306	17.6	30.0	166,453
	Pacific Gold	2194	28.8	82.6	60,545
Soybeans	S1918-4	3881	17.6	89.2	56,044
	S2422-2	3897	18.5	94.2	53,097
	S2100-2	3510	15.6	71.6	69,875
	S2788	3304	17.3	80.3	62,283
	87009	3645	20.6	98.1	50,961
	232	3564	18.7	87.1	57,415
	IA1007	3383	16.4	72.5	68,970
	IA1008	3546	19.1	88.5	56,498
	IA1010	2605	18.1	61.6	81,156
	IA1013	3216	16.8	70.6	70,824
Spring Rapeseed	Garnet	1876	32.7	80.2	62,364
	Sterling	1770	33.8	78.1	63,997

control broadleaf weeds. For spring mustards and spring rapeseed, yields averaged 90% of their yield potentials, except for Idagold, a spring mustard which exhibited a 35% yield reduction. Soybean yields were greater than expected, averaging over 60 bushels per acre, compared to a national average of 48 bushels per acre under irrigation. Safflower yields were 50% of expected, primarily due to the challenge of adequately controlling weeds. Oil contents varied among the spring crops, but all were within the range of values reported in the literature.

Depending on which oilseed is grown, these field trial results indicate an estimated 50,000 to 80,000 acres would be needed to support a single five million gallon biodiesel facility. The use of petrodiesel in Washington approaches nearly one billion gallons annually.

If the 2% mandate passes (this is part of a Washington state renewable energy initiative on the November ballot), 20 million gallons of biodiesel would be needed annually. This biodiesel production would require 250,000 to 350,000 acres of dryland and irrigated crop land to produce the feedstock necessary. The number of acres needed could be reduced through breeding high seed oil content and through increasing yields by improving production systems. Further research would be needed to meet these goals.

Organic Fertilizer Calculator: A New Planning Tool for Comparing the Cost, Value, and Nitrogen Availability of Organic Materials

Nick Andrews, Oregon State University Extension

Choosing between different organic fertilizers can be difficult since their nutrient ratios, nitrogen (N) availability, ease of use, and cost can vary widely. At Oregon State University (OSU), we have developed a fertilizer calculator comparing fertilizer cost, nutrient value, and nitrogen availability. By calculating these factors up front, you can plan a cost effective treatment that avoids excessive or deficient fertilizer application.

Calculating fertilizer application rates first requires a soil test to determine soil pH, organic matter, and nutrient levels. Nitrogen management in organic systems can be a little more complex than under conventional management so we also recommend a mid-season monitoring test such as petiole nitrate analysis.

The fertilizer calculator is an Excel spreadsheet with separate instructions on both the OSU and Oregon Tilth websites. The calculator includes five worksheets:

1. Fertilizer analysis. Enter the percent dry matter and the "as-is" nutrient analysis for the fertilizers (this is the nutrient content information provided on the label). The calculator will estimate percent plant available nitrogen (PAN).

2. Nutrients provided. Enter nutrient requirements and fertilizer application rates and get estimates for each nutrient provided including PAN after 28 days and by the end of the season.

3. Costs. Enter the price per pound for each fertilizer to obtain the cost per acre and the price per pound for each nutrient.

4 & 5. Table 1 and Data Set. These provide the background information used to estimate the percentage of total N mineralized and made available to crops (PAN).

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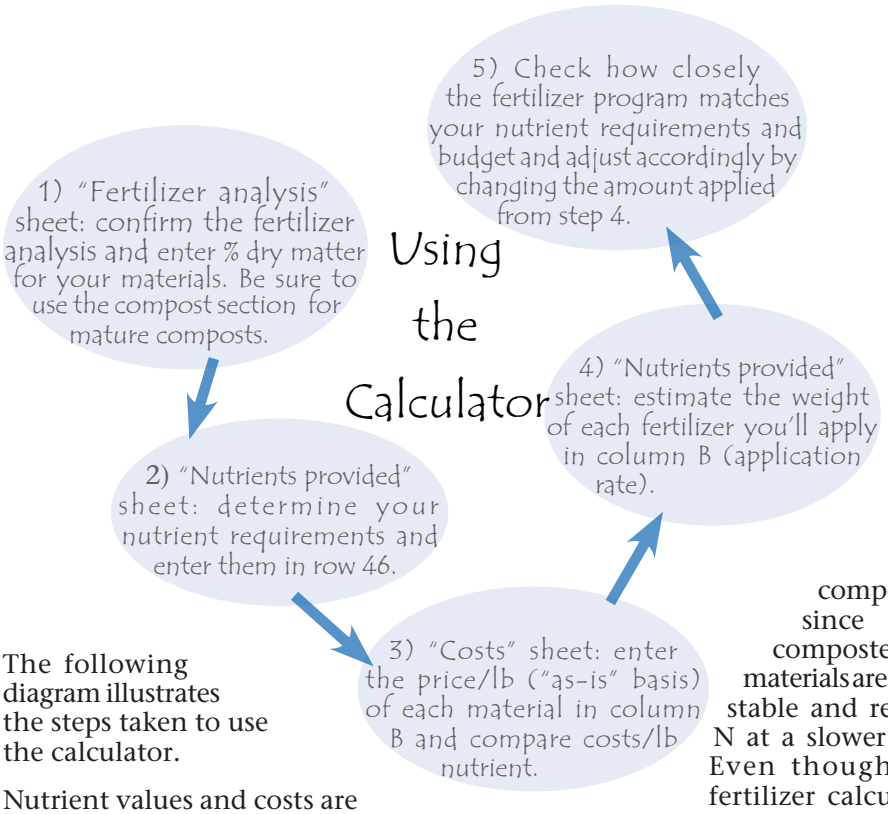


The following diagram illustrates the steps taken to use the calculator.

Nutrient values and costs are always calculated based on the fertilizer label nutrient content information ("as-is"). When calculating the application rate and cost of compost or manure, it will be necessary to first have the material analyzed or ask your supplier for this information. It will also be necessary to determine if your material is uncomposted or composted since composted materials are more stable and release N at a slower rate. Even though the fertilizer calculator provides some representative averages from Oregon suppliers, manure and compost nutrient values can vary considerably, so we highly recommend having your material analyzed.

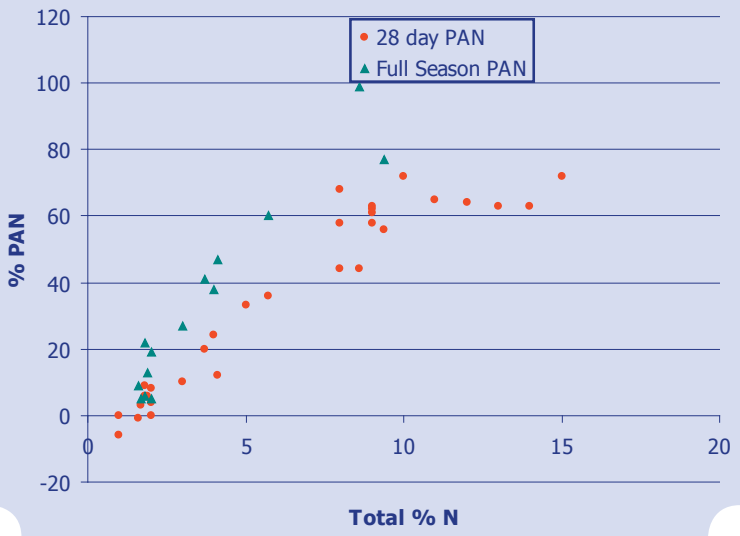
The calculator will enable you to estimate plant available nitrogen (PAN) using an equation developed by researchers at Oregon State University and Washington State University. In order to generate PAN estimates, the model requires an estimate of % dry matter of the material used. The calculator lists typical dry matter estimates, or ask your fertilizer supplier for this information.

Plant Available Nitrogen (PAN) estimates the amount of N a given fertilizer will release through mineralization over a certain time period. It is expressed as a percentage of the total % N. The amount of N shown on fertilizer labels is the total N in the product. Except for slow release synthetic fertilizers, all of the N in conventional fertilizers is generally available to plants very quickly, while non-synthetic or organic fertilizers tend to release N gradually since microorganisms must first break down the material. The 31 different organic fertilizers tested ranged from 1.6% to 15% total N. Higher percentages of total N correlated with higher percentages of PAN (Table 1 and Figure 1). We used this information to create the fertilizer calculator which estimates PAN after 28 days and a full season (approximately 125 calendar days).

Table 1: Plant Available Nitrogen (PAN) Estimates

Amendment Total N (% dry wt.)	Amendment C:N	Plant-Available N Estimate	
		28 days % of Total N	Full Season % of Total N
Uncomposted materials			
1	35	<0	0
2	18	0	15
3	12	15	30
4	9	30	45
5	7	45	60
6	<6	60	75
7	<6	60	75
8+	<6	60	75
Composts			
1	30	0	5
2-3	15-10	5	10

Figure 1: Total % N and % PAN



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Limitations of the Fertilizer Calculator

Be sure to use the nutrient content values on fertilizer labels since these are guaranteed analyses.

The calculator provides estimated values only since nutrient content of organic materials and their availability vary considerably. Results should not be considered exact.

Caution is needed when using manure or compost analyses as results will vary depending on whether they are on a fresh weight or dry weight basis. Calculated values for manure or compost that are based on our averages instead of actual material analysis are only estimates and calculator results should not be considered exact.

Nutrient analyses of organic fertilizers vary (i.e., not all bloodmeals are identical in nutrient value) and the values shown in the calculator may not be the same as those in the fertilizer you are using. Be sure to check the guaranteed analysis on the product label or lab tests of the exact product you are using and adjust values accordingly.

Data for the PAN model originate from solid organic fertilizers applied to soil. These PAN estimates will not work for liquid fertilizers, but calculations for other nutrients based on guaranteed label analyses are valid.

The calculator estimates mineral nutrients and does not estimate the value of microorganisms or organic matter in some organic materials. Amounts of dry matter applied can provide a rough estimate of the relative ability of different materials to contribute to soil organic matter.

The calculator estimates plant available nutrients for the year of application but does not estimate the slow release of nutrients in the years following application.

A substantial amount of the ammonium nitrogen in manure can be lost to the atmosphere if the manure is not incorporated into the soil immediately after application. The calculator does not account for such losses.

For an amendment with high levels of non-organic material (i.e., compost made with soil), the C:N ratio is more useful than total N in estimating PAN.

We invite you to test the fertilizer calculator and let us know how it works in your situation. The calculator will be updated based on your input and new research findings, so check the OSU Small Farms or Oregon Tilth websites to ensure you have the newest version. If you would like help using the calculator, or have questions about how to monitor N during the season, please contact Nick Andrews at OSU Extension: (503) 678-1264 ext. 49.

For More Information:

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Perennial Wheat in the Pacific Northwest

Kevin Murphy & Stephen Jones, WSU Crop & Soil Sciences

Background and Rationale

In the Pacific Northwest (PNW), wheat is grown on approximately 4 to 5 million acres and is the primary cash crop in non-irrigated regions. The most common wheat-based cropping rotation in low rainfall regions is winter wheat followed by summer fallow. While this rotation preserves necessary moisture for winter wheat, it also exposes soil to wind and water erosion for 12 months of every 24 months which suggests the need for alternative wheat-based cropping systems. Eastern Washington towns with evocative names like Dusty and Windust illustrate the problem.

On the way to Windust.

Changing the lifecycle of annual wheat back to the perennial it was before approximately 10,000 years of cultivation offers one solution to limit the problem of exposed and oft-tilled soils.

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For the past 10 years, we have been making crosses between annual wheat and perennial wheat grasses from the Thinopyrum species. Progeny from these crosses were selected for their ability to regrow after the grain was harvested in both greenhouse and field conditions. Annual wheat dies after harvest one hundred percent of the time while Perennial wheat hybrids have the capacity to regrow, survive the following winter, and set seed in the next year.

Plant Breeding Update

Since water is a major limiting factor to regrowth in perennial wheat, we planted perennial yield trials in three different rainfall regimes near the Washington towns of Kahlotus, Ritzville, and Pullman in September, 2005. Kahlotus represents a low rainfall region with 250 to 300 mm precipitation per year. Ritzville represents a slightly higher rainfall

Perennial Wheat Nursery (Ritzville, WA)

region with 300 to 400 mm per year and Pullman represents a high rainfall region of Washington with approximately 500 mm per year.

Thirty-one perennial wheat breeding lines were grown in replicated trials with two annual hard red wheat varieties, Finley and Bauermeister. The nurseries were harvested in August, 2006. In Kahlotus, the best perennial wheat breeding lines yielded approximately 50% of the annual varieties. In Ritzville and Pullman, where water was more abundant in 2005-2006, the best perennial wheat breeding lines yielded approximately 60% of the annual varieties. These perennial lines represent the most advanced breeding lines in this program, but thousands of other promising lines are being currently tested in multiple locations.

It seems reasonable yields will increase through further years of breeding that primarily selects for the ability to regrow year after year. By mid-September, regrowth of all perennial breeding lines was evident and each line was rated for regrowth vigor. As

Perennial Wheat Regrowth.

expected, the annual varieties did not regrow. In each nursery, the perennial line showed signs of regrowth, ranging from 20% regrowth to 100% regrowth. Regrowth will be monitored and rated every three weeks throughout the fall and winter. Survivability will be evaluated next spring. Second year yields will be measured at the August harvest.

In Kahlotus and Ritzville, where the standard cropping rotation is winter wheat/summer fallow, the perennial lines will again produce a crop in August 2007, while the annual lines will remain fallow. In Pullman, the high rainfall allows for an annual cropping system and the gains realized by a second year wheat crop may not be as significant as it will be in regions with a winter wheat/summer fallow rotation.

Future Research

When crossing perennial wheatgrass with annual wheat, additional traits transfer to the progeny along with the ability to regrow after harvest. The progeny often have tenacious glumes which result in poor threshability. The breeding lines show different levels of threshability and continued selection should eliminate the tenacious glume trait. End-use quality may also be negatively affected. The milling and baking quality of all 31 breeding lines are currently being tested at the USDA Quality Lab in Pullman. Based on a previous study of wheatgrass/wheat hybrids, micronutrient content is expected to increase in the perennial breeding lines. The lines are currently being tested for mineral nutrient content of calcium, copper, iron, magnesium, manganese, phosphorus, selenium, and zinc at the Grand Forks Human Nutrition Research Center in North Dakota.

Disease resistance will be of utmost importance to the success of perennial wheat. The breeding lines showed variation in resisting stripe rust, with many of the lines being completely resistant. In addition, Texas A & M researchers along with Dr. Tim Murray, WSU Plant Pathologist, are screening 20 lines for resistance to Cephalosporium stripe. USDA researchers in Aberdeen, Idaho, are screening the lines for common bunt resistance. We are currently collaborating with researchers in Turkey, Kazakstan, China, and Australia to develop perennial, high yielding wheat varieties with good end-use quality, high levels of micronutrients, and excellent disease resistance. Plans are under way to formalize this collaboration of an increasing number of countries and scientists.

Ritzville wheat farmer (and Washington State Senator) Mark Schoesler (L) with WSU Winter Wheat Breeder Stephen Jones.

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Acknowledgements

The Perennial Wheat Breeding Program thanks cooperating farmers Jim Moore of Kahlotus, Washington, and Mark Schoesler of Ritzville, Washington. Funding for this research comes primarily from Washington wheat farmers, USDA competitive and special grants, and individual private donors.

Events

Producing Organic Vegetable Seed

The Organic Seed Alliance will hold two workshops in November and February on topics including: crop variety improvement, seed economics, marketing, technical aspects of seed production, disease management, record keeping, and seed harvesting and cleaning. Growers will meet other growers, seed industry professionals, and university researchers while expanding their seed growing skills. Reserve your space as attendance is limited. Cost is $40 for two days and includes lunch, snacks, and beverages.

November 15-16, 2006 in Williams, Oregon. Workshop presentations will include a summary of the 2005-2006 Organic Seed Field Days, presentation of the new OSA Organic Radish Seed Production Manual, information about growing specific seed crops in Southern Oregon (including, onion, leeks, lettuce, and brassicas), record keeping, and economics of seed production.

February 8-9, 2006 in Mount Vernon, Washington. The first day of workshop presentations will include a summary of the 2005-2006 Organic Seed Field Days, presentation of the new OSA Organic Spinach Seed Production Manual, introduction to organic seed production, new research on organic seed treatments, and factors that favor transmission of seed-borne disease. The second day of the workshop will be an intensive class on the Fundamentals of Plant Variety Improvement taught by OSA Director of Research, Dr. John Navazio.

Please email OSA at info@seedalliance.org (360-385-7192) to register. Advanced registration and payment required. Checks should go to Organic Seed Alliance, PO Box 772, Port Townsend, WA 98368

2007 Harvesting Clean Energy Conference

HCE. Four months from now, Idaho farmers, landowners, and community leaders, will have an opportunity to learn how to make money through renewable energy at the 7th Annual Harvesting Clean Energy Conference January 29-30, 2007, in Boise.

For seven years, the Harvesting Clean Energy Conference has featured farmers and experts from across the country with hands-on experience developing and operating clean energy projects. From wind, biofuels, and solar, speakers will address project feasibility, technical and financial resources, and how to find markets.

Vice Admiral Dennis McGinn, a 35-year Navy veteran and current Senior VP at Battelle, will be the conference's keynote speaker. He is a former naval aviator and test pilot, who later commanded the U.S. Third Fleet and served as director of Naval Aviation Warfare. As head of Battelle's Energy, Transportation and Environment division, his speech will address how energy independence can contribute to national security.

For information on the conference visit the HCE website or call Rhys Roth at 360-352-1763, x101.

Announcements

Expanded Tax Incentives for Donated Conservation Easements Signed into Law

AFT. The President signed into law the Pension Protection Act of 2006, which includes new land conservation tax benefits for family farmers and ranchers. The new law enables landowners who donate a conservation easement to deduct the value of their easement, up to 50 percent of their Adjusted Gross Income (AGI) in any given year, and spread deductions over a 16-year period instead of six years. In addition, qualified farmers and ranchers (taxpayers whose gross income from the trade or business of farming is greater than 50 percent of their gross income for the taxable year) can deduct the value of their easement, up to 100 percent of their AGI in any given year. The provisions only apply to easements donated in 2006 or 2007.

USDA Awards Community Food Project Grants

ATTRA. The USDA announced 32 grant awards totaling $4.6 million to community organizations to help low-income Americans eat healthfully. Projects are funded for one to three years in amounts ranging from $10,000 to $300,000. A list of recipients is posted online.

WSDA Proposed Increases for Organic Certification Fees

At the request of the Organic Advisory Board comprised of organic food industry representatives, WSDA has developed modest fee increases to ensure that organic certifications continue without delay or interruption. The department is now seeking public input on several proposed changes:

Increased application fees from $100 to $250;

$20 renewal fees;

Increased late fees for unpaid accounts;

Fees for expedited inspections.

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Tidbits

Venerable Organic Farming Tradition Grows in Maine

ATTRA. Maine Organic Farmers and Gardeners Association celebrates its 35th birthday this year, having grown to 5,000 members and now certifying more than 300 organic farms in the state, with 25,000 acres. While only a small percentage of the state's agricultural land, it represents steady growth over the past couple of decades, and shows organic food entering the mainstream market. The state now has more than 60 farmers' markets, and many of its dairy farmers are converting to organic production, with estimates that one in four may be organic by next year. With all the growth, however, comes some disagreement over organic standards and how they apply to small producers.

Local and Sustainable Foods Change College Dining

ATTRA. Food service at colleges and universities across the country is changing, says a story in USA Today, as cafeterias serve up more local, organic and sustainable foods. The change is driven in part by student requests. A change in food procurement isn't always easy for large universities or their food service providers, since obtaining local produce requires dealing with more suppliers, and can mean more food preparation labor. The effort is appreciated by many students, according to the story, which relates how Yale handles and identifies locally grown food, and how popular it is with students.

Montana Organic Farmer Grows and Distributes Produce

ATTRA. Montana farmer Joe Hamill not only grows organic produce, but established a distribution chain stretching across the southern half of the state, reports the Billings Gazette. From a small start just a few years ago, Hamill has built an operation that sells to restaurants and retailers, as well as individual customers. He even purchased his own refrigerated truck. He connected with another organic operation in the western part of the state, and the two stage a weekly meet to swap organic produce for meat, poultry, and eggs. This allows both businesses to provide their customers more variety

Article Explores Urban Agriculture Potential

ATTRA. An article from Simon Fraser University's student newspaper *The Peak* explores some of the growing worldwide interest in urban agriculture. While combining the terms "urban" and "agriculture" may be a new concept for many, the fact is that community gardens can help provide city dwellers with important access to fresh foods. This helps improve health and food security, and reduces the environmental and social costs of food transport.

Fifth Farm Bill Analysis Paper Released

ATTRA. USDA released the fifth and final in a series of analysis papers related to production agriculture, based on themes raised during Farm Bill forums. This paper analyzes key factors affecting future growth in U.S. agriculture: international trade, research and development, protection of agriculture from pests and diseases, and challenges in preparing the next generation of farmers.

National Agricultural Easement Assessment

AFT. The first national assessment of local agricultural easement programs, based on the examination of 46 programs in 15 states, uncovers practices and approaches that have helped communities protect farm and ranch land across America.

USDA Proposes Grass-Fed Beef Standards

ATTRA. The U.S. Department of Agriculture is once again proposing marketing standards for grass-fed beef, and once again the response from producers and consumers is mixed. The agency's current proposal allows for some feeding of silage and other non-pasture feeds. The agency has indicated it wants to offer a standard applicable to producers in every region of the country. Forage in the proposed rule is broadly defined to include, for example, harvest residue. Some critics among producers claim the proposal is too loose and might allow conventional ranchers to use a grass-fed label on their beef, too. Previously proposed standards in 2002 were also met by protests from within the industry. The comment period for this year's proposed standards brought in 17,000 responses.

American Farmland Trust Analysis of I-933

AFT. In Washington State, the filing of a property rights initiative (I-933) has placed an important issue for agriculture on the November ballot. This new measure is a more sweeping version of a similar initiative—known as Measure 37—that passed in Oregon in 2004. Like the Oregon measure, the Washington initiative would require governments to either pay landowners for any reduction in property values due to government regulation or to waive the regulation entirely.

Washington farmers increasingly feel the impacts of national environmental laws as they are implemented at the local level. And, like their fellow farmers around the country, they are struggling to succeed in a difficult farm economy. The Washington Initiative (I-933), filed as a response to farmer frustration, is supported by the Washington State Farm Bureau. AFT was asked to complete an analysis of the measure by other local agriculture groups, uncertain about the issue, to

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help them evaluate its impacts on the future of agriculture. AFT's analysis concludes I-933 is not the solution to agriculture's problems. Rather, it is likely to cause considerable damage to the future of agriculture.

Farm to College Program Changing Markets and Cafeteria Meals

ATTRA. The University of Montana's Farm to College Program recently celebrated its third anniversary and millionth dollar channeled to Montana food purchases. In-state purchases exceed 13 percent of the University Dining Service's annual food budget. The program helps producers improve their ability to supply institutions, spawning programs at other schools in the state, and involving students in research documenting the effects of the program.

The Organic Myth: How Ideals are Compromised With Mass Markets

The cover story from the October 16 issue of Business Week looks at how the organic food market is changing as demand grows and more national retailers begin supplying organic products. With demand for some organic products outstripping supply, the pastoral image of organic food is jeopardized as manufacturers shop abroad for ingredients and keep organic cows and chickens on an industrial scale. The article explores in particular the effect that a growing market and supply shortages have had on organic yogurt company Stonyfield Farm.

Role of Farms in Reducing Global Warming

AFTA. America's farms and forestlands have a major role to play in reducing the threat of climate change, according to two reports released today by the Pew Center on Global Climate Change. Changes in agricultural practices coupled with foresting marginal agricultural lands could offset up to one fifth of current U.S. greenhouse gas emissions, while at the same time creating potential new sources of farming income. For more information about global climate change and the activities of the Pew Center, visit www.pewclimate.org.

Goats Offer Vegetation Management Tool

ATTRA. In states around the country, goats are finding a new role as a municipal vegetation management tool. According to the Grand Forks Herald, Itasca State Park at the headwaters of the Mississippi ,recently used a goat herd to help curb an invasion of noxious weeds without pesticides. The Seattle Times reports on public utility Seattle City Light's intention to use goats to clear vegetation at an overgrown power substation where they couldn't use heavy equipment. And in Carson City, Nevada, the city hired 20 goats to help create a vegetation break in open space, to lessen the danger of fire spreading from wildland to residential areas.

Leopold Center Issues Project Reports

ATTRA. The Leopold Center for Sustainable Agriculture at Iowa State University reports on 21 projects funded by the Center in 2005 and 2006. The Center provided support for research, education, and demonstration projects calculated to help Iowa farmers at all levels with production and marketing issues. Among the project topics were: biological control of the soybean aphid, managed grazing and water quality, supporting direct meat marketing in Iowa, and helping producers market processed foods. The project summaries have been published in this 75-page report.

Value-added Products Key to Small Farm Stability

ATTRA. Though value-added farm products may make up only a small proportion of agricultural revenue in Washington's Whatcom County, those products are the "lifeblood" of farms that produce them, according to a Seattle Times article. The value-added products can help farmers find price stability and a good profit level. While value-added products have been regarded as the domain of small farmers, the Whatcom Agriculture Preservation Committee had been studying how larger area dairy farmers might benefit from developing value-added products of their own, to tap new markets.

Resources

ARS Study Informs Recommendations on Compost Tea

ATTRA. New recommendations for making compost tea are being offered, based on research conducted by USDA's Agricultural Research Service. Studies by ARS showed that additives sold for making compost tea, such as soluble kelp, fish hydrolysates, humic acid, rock dust, and proprietary nutrient solutions, can spur the growth of bacteria. Ingredients commonly added to compost tea may promote growth of a variety of microbes, including pathogens that can cause illness in humans. Recommendations and guidelines for safe production and use of compost tea have been developed by the Compost Tea Task Force, formed by the National Organic Standards Board.

New Online Service Connects Organic Seed Suppliers with Customers

OMRI. The Organic Materials Review Institute (OMRI) , a nonprofit publisher and information service for organic growers, recently introduced an online, organic seed listing service. Once filled, the OMRI Organic Seed Database will provide accurate information on the availability and supply of hundreds of certified organic seed varieties.

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While USDA organic rule requires that organic growers plant organic seed, it also contains an exemption allowing non-organic seed to be used if organic seed is not commercially available. The OMRI Seed Database will provide growers a place to search for available organic seed and also offer certifiers a tool to verify whether organic seed is available in a particular variety.

There is a $25 annual company charge, plus fees based on how many varieties the company wishes to list. Listings are for a 12-month period and can be updated at anytime.

Bark and Wood Boring Beetles of The World

The Bugwood Network www.Bugwood.org announces the availability of Bark and Wood Boring Beetles of The World. This website features over 4,000 images and information on over 400 species of economically important beetles that feed on the cambium layer or wood of living or recently killed trees and shrubs. Bark and Wood Boring Beetles of The World is a complete rework of the former Bark Beetles of North America website. This makes it easier for users to find images and information about a wide array of bark and wood boring beetles.

Energizing Entrepreneurs Website

Visit the home of the RUPRI Center for Rural Entrepreneurship, created in partnership with the Heartland Center for Leadership Development.

This website shares what has been learned about creating supportive environments for entrepreneurs in rural places. While the site focuses on rural, much of the information will be of value to those of you working in urban places. You will find useful tools and specific strategies.

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