Your response needed for continued subscription. See back panel.

Breeding forages for landscape diversity

We often think of sustainable agriculture in terms of landscapes. But Nancy Ehlke, a geneticist at the University of Minnesota, has been working on a smaller scale of the genetics of crops. She is leading a group of researchers in a plant breeding program designed to improve crops to make them more suitable for sustainable agricultural practices.

Ehlke's team begins by selecting crops that would be environmentally and economically suitable for Minnesota's farms. Legumes such as clovers, birdsfoot trefoil and alfalfa are an economical source of protein and minerals for livestock. They make a quality cover crop, improve soil and water quality, reduce the need for extra fertilizer and work well in rotational grazing systems.

Because they are perennial forages, they limit the need to till land and thus reduce soil erosion as well. Each species has drawbacks and challenges, though, highlighting the need for improvement through plant breeding. Birdsfoot trefoil, for example, does not hold up well under intense grazing pressure; and like many forage legumes, its poor seedling vigor makes it difficult to establish a stand. Ehlke's team has initiated a breeding program designed to select disease-resistant birdsfoot trefoil.

The project is also working on breeding turfgrass, the grasses that grow on our lawns and athletic fields. In addition to their decorative effect, they prevent soil erosion, provide a cooling effect in warm weather, and clean the air. Ehlke sees these grasses as a major area of potential economic growth in Minnesota. If turfgrass can be bred for pest resistance, winter hardiness, efficient water use, and tolerance to wear and tear, reasons Ehlke, then inputs on lawns can be reduced and water could be conserved as well. Breeding ryegrass for winter-hardiness is the first step toward increasing the turfgrass market in Minnesota.

Ehlke's project includes an effort to develop new varieties of perennial crops for the seed production industry. Like forage legumes, the perennial seed crops allow reduced tillage and thereby protect the soil from erosion and provide wildlife habitat. They also distribute the workload across the growing season. Native species are yet another aspect of the project. Ehlke sees native plants as a unique opportunity to increase the diversity of agricultural systems. For instance, the prairie legume Illinois bundleflower has the potential to be used as a perennial grain crop, as part of a forage mixture, and possibly even for biofuel.

"I would like to have an impact and get farmers seeds they can use," explains Ehlke. The overall goal of the team's research is to continue to find a way to provide farmers with economically advantageous crops that encourage more sustainable practices at the same time. She may be reached at ehlke001@umn.edu.

—By Daniel Ungier, MISA intern

Check these new entries on the MISA website

You may be interested in these new items on MISA's home page at www.misa.umn.edu:

—*The Curse of American Agricultural Abundance: A Sustainable Solution* (see the

University of Minnesota Extension Service

following article)

—“Organic Feed for Poultry and Livestock: Availability and Prices”

—“Swept Away: Chronic Hardship and Fresh Promise on the Rural Great Plains”

—”State of the States” Report from Organic Farming Research Foundation

New book by Willard Cochrane

The Curse of American Agricultural Abundance: A Sustainable Solution, is the title of a new book by Willard W. Cochrane, professor emeritus at the University of Minnesota.

Advisor to President Kennedy, consultant for foreign governments, and spokesman for family farmers everywhere, Cochrane has been a leading expert on agriculture and its problems in the United States since the 1940s. Cochrane analyzes the propensity for American agriculture to produce too much and the inability of our social and economic system to make effective use of that unending abundance. He then offers his vision for American agriculture in the 21st century.

Cochrane looks at two periods in agricultural history: 1953–66 and 1997–2002. Structurally, technologically, and organizationally the two periods are as different as night and day, but in terms of the big economic picture—too much production pressing on a limited commercial demand with resulting low farm prices and incomes—they are mirror images of each other.

With this understanding, Cochrane argues that Americans no longer need to farm fragile ecosystems with intensive chemical methods, make huge payments that result in fewer farms and higher farming costs, or bear the environmental consequences of all-out production. Instead, he outlines a bold new strategy for how we can enjoy our abundance and focus our efforts on quality of life and protecting the environment in our rural areas.

The foreword is written by Richard A. Levins, agricultural economist at the University of Minnesota and the author of *Willard Cochrane and the American Family Farm* (Nebraska 2003). Both books are available from the University of Nebraska press. See http://www.nebraskapress.unl.edu/thepress.html for details.

Want to learn more about certified organic food?

“Certified Organic Food: What Is It? Who Grows It?” That’s the name of a new on-line course authored and instructed by Tim King, a farmer, former MISA board member and co-founder of the Whole Farm Cooperative.

The course, which is hosted at Suite101.com’s Suite University, has four chapters. The chapters walk students through a history of organic certification, take them on organic farm tours, introduce them to small and large organic processors and review some of the research regarding organics on nutrition and taste. Along the way they can participate in discussions about the integrity of the organic certification system and who is responsible for maintaining that integrity.

Students can sign up to take the course in two ways. They can sign up for the interactive course, which King will instruct beginning Sept. 1 and at two additional dates in the fall and winter, or they can register for the quick course any time. The quick course allows students to work through the lessons and assignments on their own, without active instruction. The quick course costs $9.95 and the interactive course costs $19.95.

“I wrote this course because, after working as Whole Farm Cooperative’s marketing manager, I realized a lot of people were committed to eating organic foods but would benefit from a deeper discussion of organics,” King says. “I believe many people who eat organic foods could become more astute organic food buyers by taking this course.”

The link to look at the course overview, introduction and curriculum can be found at http://www.suite101.com/course.cfm/18004/overview/229462.

‘Farming with the Wild’ book introduction is Oct. 8

An evening with authors and leaders in the Wild Farm Alliance is scheduled Oct. 8, 7:30 p.m., at The Open Book, 1011 Washington Ave. S. in Minneapolis

The new book by Dan Imhoff, *Farming with the Wild: Enhancing Biodiversity on Farms and*

Ranches, will be introduced. Imhoff and other speakers will address the movement to develop an agriculture that accommodates and celebrates wild nature while producing a living for families on the land.

Since agriculture covers roughly two-thirds of the continental landscape in the U.S., and about 40 percent of endangered species are listed because of agriculture's vast footprint, farming and ranching are contributing to the great loss of biological diversity. Yet, there are agricultural models that support native species and ecological processes. This evening's event will feature these models with images from Dan Imhoff's books and explore the opportunities and pitfalls of expanding the concept of farming with the wild.

The event is sponsored by the Land Stewardship Project, the Institute for Agriculture and Trade Policy, Ruminator Books and the Wild Farm Alliance. For more information, call (651) 653-0618 or (612) 870-0453.

Locally grown food tastes great and travels less

A new report from the Leopold Center for Sustainable Agriculture shows that locally grown produce traveled an average of 56 miles from farm to point of sale. The same types of produce from conventional sources within the United States traveled an average of 1,494 miles—nearly 27 times farther—to reach the same points of sale.

Leopold Center Marketing and Food Systems Program leader Rich Pirog and Iowa State University student Andrew Benjamin looked at produce sales to institutions that participated in an All-Iowa meal brokering project coordinated by Practical Farmers of Iowa (PFI). The data represented fresh fruits and vegetables from 34 Iowa farms sold in 2001 to 23 conference centers, hotels and other institutions in central Iowa.

Their comparisons showed that mileage varied widely by produce type. Conventionally sourced broccoli traveled more than 90 times farther than its local counterparts, and carrots and sweet corn more than 70 times farther.

Using a formula representing both distance and weight of the load transported, Pirog and Benjamin calculated a weighted average source distance, or the food miles for each of 16 produce types in the PFI-brokered sales data. The pair then examined 1998 records for these 16 produce items arriving at the Chicago and St. Louis terminal produce markets, and current national produce shipment data to determine which states in the continental United States supply the upper Midwest with 50 percent or more of the produce.

Within the conventional data set pumpkins, cabbage and potatoes traveled the fewest miles, between 8 and 15 times farther than their local counterparts. Pirog and Benjamin also found that the sum of the food miles to supply the 16 fruits and vegetables from local sources was 715 miles, about the distance from Des Moines to Denver.

The sum of the food miles for the conventional produce was 25,301 miles, roughly a trip that would circle the earth pole to pole starting and ending in Des Moines, plus 440 additional miles north to the Canadian border.

"We're now researching how best to communicate the food miles concept to consumers who want local food but also demand freshness, taste and quality," Pirog says.

For a copy of the report, "Checking the Food Odometer: Comparing Food Miles for Local Versus Conventional Produce Sales to Iowa Institutions," contact the Leopold Center at (515) 294-3711, or go to www.leopold.iastate.edu/pubinfo/papersspeeches/food_travel072103.pdf.

Calendar of events

These events are sponsored by numerous organizations. More information is available at www.misa.umn.edu and at www.sfa-mn.org.

Sept. 19. On-farm Milk Processing Workshop and Field Day. Fairfield, Iowa. 515-232-5661.

Oct. 10th. Extending the Grazing Season. WCROC. 320-589-1711.

Oct. 11th/12th. 2003 Twin Cities Earth Charter Community Summit. St. Paul. 651-647-1631.

We're going bi-monthly…

We hope you find this newsletter informative and valuable. We are committed to continue producing the Sustainable Agriculture Newsletter, but due to budget cuts, we need to reduce costs.. We've decided to go on a bi-monthly schedule, so you'll notice that this issue is a September/October edition. We'd also like to check to see that everyone who is currently on our mailing list would like to continue receiving the newsletter and if so, whether you would prefer to read the newsletter on your computer rather than receive a paper copy.

We are happy to continue mailing printed newsletters to those who wish to receive them. However, the newsletter is also posted electronically on the MISA website each month. If you would prefer to have us notify you by e-mail when that version is posted, rather than receive a hard copy, we'll be happy to oblige!

To continue receiving the newsletter, send your mailing label for this newsletter to Kate Seager in the MISA office (MISA, 411 Borlaug Hall, 1991 Buford Circle, St. Paul, MN 55108). When you send your label, indicate whether you'd like to receive a paper copy or an electronic copy of the newsletter. If you'd like to continue receiving a paper copy and have corrections for your mailing label, please mark the corrections on your label. If you'd prefer to receive an email message telling you that the newsletter is available on the web, draw a line through your mailing label and give us your email address. **If we don't hear from you, we'll remove your name from the mailing list at the end of the year**. Thank you for your support of the newsletter and of sustainable agriculture.

What we're about…

This newsletter is supported by the Minnesota Institute for Sustainable Agriculture (MISA)—a partnership between the Sustainer's Coalition and the University of Minnesota College of Agricultural, Food, and Environmental Sciences (COAFES); the University of Minnesota Extension Service; the North Central Region Sustainable Agriculture Research and Education (NCRSARE) Professional Development Program (PDP); and the Minnesota Department of Agriculture (MDA).

Send story ideas to the editor: Jack Sperbeck, 405 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108, (612) 625-1794, fax (612) 625-2207, e-mail: sperb001@umn.edu. Other editorial board members: Helene Murray, (612) 625-0220, murra021@umn.edu; Beth Nelson, (612) 625-8217, schre002@umn.edu; and Bill Wilcke, (612) 625-8205, wilck001@umn.edu. Please send **address changes** directly to: Kate Seager, MISA, 411 Borlaug Hall, 1991 Buford Circle, St. Paul, MN 55108.

You can find more University of Minnesota Extension Service educational information at www.extension.umn.edu. Also check MISA's home page at www.misa.umn.edu.

Our mission statement: To help bring people together to influence the future of agriculture and rural communities to achieve socially, environmentally, and economically sustainable farms and communities.

To stimulate thinking and discussion about sustainability, we try to present items that reflect different points of view. This being the case, we aren't promoting and don't necessarily agree with everything we publish.

Produced by Communication and Educational Technology Services, University of Minnesota Extension Service.