Sustainable Agriculture

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Intensive corn-soybean agriculture not sustainable, U of M scientist says

By Gyles Randall, University of Minnesota soil scientist

Present-day corn and soybean production in southern Minnesota does not appear to be sustainable from economic, environmental, ecological and sociological perspectives. Let's examine these four factors:

1. Economics is a primary determinant as to whether an agricultural production system is sustainable -- to the producer, the agricultural infrastructure and the surrounding community. Global competition, primarily from Argentina, Brazil, and China, will put extreme pressure on the U.S. corn and soybean market.

   Due to low prices, federal assistance with loan deficiency payments (LDPs) has been the primary source of profit for most corn and soybean producers the last two years. Unfortunately, LDPs have stimulated all-out field edge to field edge production, since the farmer is rewarded based on number of bushels produced. Although economically good for the producer, this government policy has come at the expense of soil and water stewardship and has created severe long-term consequences.

   Coupled with global competition and taxpayers questioning government payments to produce crops they see as not essential to food in grocery stores and restaurants, the economic picture for current corn-soybean production becomes bleak.

2. Environmental factors have become more prominent in recent years when determining the sustainability of crop production systems. In my travels throughout south central and southeastern Minnesota, I've never seen as much erosion as in the last few years. We've had some intense rains, but we've also converted the landscape to a crop production system (corn and soybeans) that is extremely susceptible to soil erosion.

   We must question the sustainability of the corn-soybean rotation from an environmental perspective. This is due to more soil erosion, greater and more “flash flood" runoff water compared to cropping systems containing alfalfa and grass perennials, and more loss of nitrate-nitrogen to ground and surface waters.

3. Ecological factors must be considered when evaluating sustainability. More and diverse plant and wildlife is considered highly favorable in a rural ecosystem and presents an aesthetically pleasing quality, which is gaining value in American society. But the current corn-soybean cropping system provides little opportunity for animal and plant diversity on the landscape.

4. Sociological impacts are also seen as side effects of present-day corn and soybean agriculture. As farms get larger to support profitable corn and soybean production, we have fewer farms and farm families. Rural populations decline, student numbers in schools dwindle and church membership shrinks. Producers often bypass the local community to purchase inputs at larger regional outlets where prices are cheaper due to volume purchases.

And as more production contracts are developed between agribusiness and the farmer, the farmer will gradually assume the role of "custom operator" or "indentured servant" and lose the freedom to manage. These trends will likely continue regardless of the cropping system, but the corn-soybean rotation has speeded the process.

The bottom line: We will need substantial changes in federal farm policy, cropping systems and usage of crops produced on the farm to sustain a healthy environment and rural community.

(Gyles Randall is a soil scientist and professor at the University of Minnesota Southern Research and Outreach Center, Waseca. He may be reached at (507) 835-3620, grandall@soils.umn.edu).

GAO report says improvements needed to further promote IPM

Integrated pest management (IPM) has not reduced pesticide use nationwide, according to a recent report from the General Accounting Office (GAO).

In fact, total use of agricultural pesticides has actually increased since the U.S. Department of Agriculture's IPM initiative started decades earlier, the report says. Use of a subset of chemical pesticides identified as the riskiest by the Environmental Protection Agency has declined somewhat. However, this subset comprises over 40 percent of pesticides used in U.S. agriculture.

While the use of chemical pesticides has resulted in important benefits, their use can have unintended adverse effects on human health and the environment, the report says.

"Furthermore, the use of chemical pesticides has caused or exacerbated some pest problems. Chemical pesticides become less effective as pests develop resistance to them, just as human pathogens develop resistance to antibiotics. More than 500 insect pests, 270 weed species and 150 plant diseases are mow resistant to one or more pesticides, making these pests harder and more costly to control.

"In addition, many chemical pesticides kill not only the target pests, but also eliminate beneficial organisms that would naturally keep pest populations in check," the report says."Without the benefit of these natural controls, growers become more dependent on chemical pesticides.

"Because of this scenario, sometimes referred to as the 'pesticide treadmill,' the National Academy of Sciences concludes there is an urgent need for an alternative approach to pest management that can complement and partially replace chemically-based pest management practices."

The report calls for USDA to address deficiencies in the leadership, coordination and management of the IPM initiative. In commenting on a draft of the GAO report, USDA agreed to take several actions to implement the recommendations.

The complete report is available at www.GAO.gov, then click on GAO reports. It should appear under reports released to the public Sept. 28.

The farm depression won't end until the global economy is revived

The economic slump in the United States is part of a global slump or worse yet, a global depression, says Willard W. Cochrane, professor emeritus at the University of Minnesota. And Cochrane says the U.S. farm economy, now an integral part of the global economy, can't recover until the global economy is somehow revived.

The global economic slump has been induced by restricted purchasing power throughout the world, Cochrane says."The governments of the economic heavy hitters -- Japan, Germany and the U.S. -- must embark upon large public works programs financed by progressive income tax receipts or budget deficits, thereby widening the flow of purchasing power.

"I am talking about major efforts to improve educational systems, redesign and rebuild urban transit systems and move to cleaner energy-producing systems."

Complementing these public goods-producing activities should come efforts to reduce income inequalities in the major and emerging economies, Cochrane says."In the U.S. this means increasing the minimum wage (perhaps by 50 percent), imposing a wealth tax on the rich and adopting fair trade practices to protect our workers from imports produced under very low wage conditions.

"Finally, it is time to restructure the farm production plant in the United States along less intensive, more sustainable lines," Cochrane says."This means less dependence on export markets, and financing this restructuring job with the funds now going to support the incomes of big crop farmers."

Cochrane may be reached at the Department of Applied Economics, COB, University of Minnesota, St. Paul, MN 55108.

Minnesota SARE Producer Grant recipients are named

Congratulations to the following Minnesotans for receiving grants to test or demonstrate innovative sustainable agriculture or agroforestry practices on their land. The producers and titles of their projects are:

Andy Hart, Elgin, *Zumbro River Watershed Cover Crop.*

Charles Knierim, Breezy Point, *Four-Season Production in a Northern Climate Greenhouse.*

Warren Roberts, Oak Creek Farm, Deer Creek, and Melvin Klockman and Steven Iverson, *Organic Hog Production using Several Organic Feed Rations as Compared with Conventional Hog Production.*

Roger Peterson, Lewiston, and Charles and Lynette Pederson and Tim Kohner, *Reducing Heating Costs in Greenhouses.*

Dave Serfling, Preston, and Dwight Ault, Glen Bernard, and Dick Carroll, Comparison of Winter Farrowing Techniques on Four Farms for High Value Pork Production for Niman Ranch.

Joe Lancaster, Wilder Forest, Marine on St Croix, *Utilizing Bats to Control Agricultural Pests.*

Paul Sobocinski, Wabasso, *Sustainable Straw Based Farrowing System Modified after the Swedish Model.*

Tom McMillin, Kellogg, and Tim Pronschinske and Roger Schultz, *Marketing Sustainable Wood Products: An Approach to Assist Producers in Diversifying their Financial Portfolio while Sustainably Managing their Woodland for the Future.*

The grants are from the federally funded Producer Grant Program of the North Central Region Sustainable Agriculture Research and Education (NCRSARE) program. Each year, a call for proposals is issued around the first of the year, grant proposals are due around the end of March, and funding decisions are made in June. For more information about SARE or the producer grant program, see the website at www.sare.org/ncrsare, or call the NCRSARE office in Lincoln Neb., at (402) 472-7081.

Reducing insecticide use in apple production is topic of new video

Maggots for Lunch...No More is the title of a new 13-minute videotape produced by Larry Zilliox and Jeff Hahn of the University of Minnesota Extension Service. This is an entertaining and educational video demonstrating the production of high quality apples that are free of apple maggots.

The process eliminates the need to use insecticides all summer long to control the apple maggot fly. The videotape can be purchased from the University of Minnesota Distribution Center by calling (800) 876-8636, or (612) 624-4900. Ask for item number VH-07655-GO.

Global warming conference set for Staples on Oct. 20

The Sustainable Farming Association of Central Minnesota is hosting a Global Warming Conference on Oct. 20, 2001 at the Staples Technical College in Staples, Minn.

Registration starts at 8:30 a.m. and the program runs from 10 a.m. to 4 p.m. Speakers include J. Drake Hamilton, Minnesotans for an Energy Efficient Economy; John Pastor, ecologist at the University of Minnesota, Duluth; Gordon McIntosh, professor and author of "Minnesota Agriculture and the Reduction of Greenhouse Gases;" and Lisa Daniels, of Windustry, who will speak on financing for wind energy.

Food will be provided by Whole Farm Coop (www.wholefarmcoop.com). The entrance fee is $15, which includes lunch. For more information contact Lynda Converse at (320) 594-2456 or converse@rea-alp.com.

MDA is accepting applications for sustainable ag grants

The Minnesota Department of Agriculture (MDA) is now accepting applications for grants from Minnesota farmers, researchers, nonprofit organizations, and educators who have innovative ideas for sustainable farming systems. The MDA's Energy and Sustainable Agriculture Program will award up to $210,000 to grant projects this fiscal year.

Individual grants up to $25,000 are available for three-year projects that benefit the environment, increase farm profits through cost reduction or enhanced marketing, and improve farm family quality of life. Eligible projects may include but are not limited to enterprise diversification; cover crops and crop rotations to increase nitrogen uptake, reduce erosion, or control pests; conservation tillage and weed management, especially in organic production; integrated pest management systems; livestock production

and manure management systems; nutrient and pesticide management; energy production such as wind, methane, or biomass; and growing for and accessing marketing opportunities.

Since 1989, 208 grants have been awarded throughout Minnesota. Examples of approved projects include Leo Seykora in Steele County, who is looking at the effects of rye as a cover crop for wooly cupgrass control in organic soybean production. John Fisher-Merritt in Carlton County is demonstrating the design, installation, and cost effectiveness of an automated temperature control and monitoring system on an earth heated and cooled produce root cellar. Dave and Diane Serfling in Fillmore County are comparing different farrowing systems to supply hogs to a specialty market demanding humanely raised, antibiotic free and high quality meat during the summer months.

Projects must be on Minnesota farms. Joint applications for watershed projects or from farmer groups are encouraged. Matching funds may increase funds available for multi-participant projects.

Applications and more information are available from the MDA website, www.mda.state.mn.us, or by contacting Wayne Monsen, Energy and Sustainable Agriculture Program, MDA, 90 W. Plato Blvd., St. Paul, MN 55107, 651-282-2261, or e-mail: at Wayne.Monsen@state.mn.us. Completed applications must be received at MDA by 4:30 p.m. on Friday, Dec. 14, 2001. An independent panel will review applications.

What we're about

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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.