Agricultural Newsletter

UW-Madison College of Ag & Life Science
University of Wisconsin-Extension

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Biodiesel Fuels in Agricultural Equipment

Ronald T. Schuler
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During the 2006 Wisconsin Farm Technology Days, biodiesel fuel was used in the engines of field demonstration machines with no apparent problems in any of the engines. A blend (B5) of five percent biodiesel and ninety-five percent diesel fuel was used. US farm machinery manufacturers and fuel suppliers indicate that this blend (B5) of biodiesel provides several advantages over straight diesel but suggest following some appropriate service and maintenance procedures when using biodiesel.

The biodiesel provides a fuel alternative that is renewable and reduces the dependency on petroleum imports. When added to diesel fuel at low levels, the cetane rating and lubricity are improved. The cetane rating is an indication of the knock characteristics of a diesel fuel, much like the octane rating for gasoline. Most diesel fuels available today have a cetane rating from 40 to 44, while the cetane rating of soy biodiesel is about 47.

Lubricity is the ability of the fuel to lubricate which is especially important in the fuel pump and injectors where clearances between parts are very small and pressures may be rather high. Adding one to two percent by volume of biodiesel to diesel fuel significantly improves the lubricity of diesel fuel. Higher portions of biodiesel have very little impact on the diesel fuel lubricity improvement.

The biodiesel blends have reduced emissions of some pollutants but may increase others. Sulfur, aromatics and hydrocarbons emissions will be less but the nitrous oxides will increase slightly.

Other issues regarding biodiesel fuels include moisture absorption, cold weather problems, and some seal and material compatibility. All these issues become more important when using higher blends of biodiesel. Nonetheless, at the five percent level, several normal recommended practices should be completed. With moisture absorption, there is an increased risk of microorganism growth in the fuel tank which may lead to an increased clogging of the fuel filters. Any steps to reduce the potential of water entering the fuel system should be followed. Examples include insuring fuel caps are properly installed, more frequently draining the water from the water trap on an engine, keeping tanks filled, including storage tanks, and adding a water trap on the fuel storage tank to separate the water from the fuel as it is drawn from the storage tank.

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During cold weather, fuel clouding or wax separation may occur, especially with higher blends of biodiesel. This may lead to fuel filter clogging and hard starting. This should not be a problem with B5 but is a concern with higher levels of biodiesel.

When changing from diesel to biodiesel, more contaminants will be present in the fuel initially because the biodiesel acts as a solvent. Therefore fuel filters should be changed immediately after changing to the biodiesel. The filters can be changed at the normal recommended interval after several filter changes.

In closing, a five percent blend of biodiesel can be used in most new farmer tractors, which was demonstrated during the 2006 WI Farm Technology Days. But the machinery owner should check with their machinery dealer to insure the manufacturer approves its use and warranties will be honored. When using B5 biodiesel, be sure to follow a few maintenance steps, especially those dealing with minimizing moisture in the fuel.

Nutrient application guidelines bulletin has been updated

Kevin Schoessow
Area Agricultural Development Agent
Burnett, Sawyer, & Washburn Counties

While the average farmer or gardener may not may not find the recent revision of UW-Extension publication A2809, *Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin* by the UW-Madison Soil Science Department as front page news, crop consultants, nutrient management planners and UW-Extension staff will find the new A2809 certainly noteworthy. This publication has served as a guideline for Wisconsin's soil test program and nutrient application recommendations since the 1960s. Over the years this publication has been updated several times to reflect research advances, additional correlation and calibration data, and shifts in philosophical viewpoint.

Highlights of the revisions include: 1) complete reorganization of material into chapters; 2) addition of P_2O_5 and K_2O crop removal information; 3) new lime recommendations; 4) maximizing economic return to nitrogen (MRTN) for corn added; 5) preplant nitrate test (PPNT) and pre-sidedress nitrate test (PSNT) information added; and 6) probability of response to starter fertilizer in corn added.

These guidelines can help farmers--be they conventional or organic--make appropriate use of lime, fertilizer, manure, and other nutrient sources which can significantly increases farm income. It is equally important to follow these new guidelines to prevent the over-application of nutrients which can reduce the potential for environmental damage.

Fundamentally, Wisconsin's soil testing program and nutrient application guidelines remain the same; however, as new information and economics change so must our thinking on how to best manage crop nutrients.

Beginning January 1, 2007, these guidelines will be included in all soil test reports from Wisconsin certified soil testing laboratories. Copies of A2809 and many other publications are available on line at learningstore.uwex.edu or by contacting your local UW-Extension Office.

Focus on Energy agribusiness and agriculture program

Compact fluorescent lighting on farms

You can reduce energy costs by installing energy efficient lighting. It can be as simple as changing your current incandescent bulbs out with fluorescent lamps. Fluorescent bulbs or CFLs use less watts per light output (lumens) and so therefore less energy. A farmer can expect savings of almost $75 over the life of a 100 watt-equivalent CFL.

CFLs are most applicable in low moisture, low dust environments such as utility rooms, office spaces, machine sheds and residences. They can also be used in feed rooms and animal housing if you install fixtures that are approved for use in wet locations. A water or vapor tight fixture must be used in any animal housing as well as wet or damp environments such as milk houses and feed rooms. Check the CFL packaging for the bulb to see if it can be used in enclosed fixtures. CFLs can overheat if they are not used in the appropriate fixture.

Focus on Energy is a public-private partnership offering energy information and services to residential, business, agricultural and industrial customers throughout Wisconsin. The goals of this program are to encourage energy efficiency and use of renewable energy, enhance the environment, and ensure the future supply of energy for Wisconsin. Eligibility is based on your utility service area. To determine your eligibility for Focus on Energy programs, please call us at 1-800-762-7077 or visit the website at www.focusonenergy.com.

Risks for the 2007 cropping season

Phil Holman
Asst. Superintendent
Spooner Ag Research Station

Price Risk: Depending on whose information you read or listen to there are differing opinions on what grain prices will be at harvest time in 2007. One thing is for certain: price projections are much higher than heading into any other planting season. High prices, however, will also bring high price volatility. Prices could go up greatly, down greatly, or stay somewhere similar to where they are projected today. Take the price risk into account into your crop production plans. The only way you can count on high prices is by using a marketing strategy to lock in a price or limit the potential price decline.

Production Risk: It doesn't matter how high the price of corn gets if a drought causes yields to be zero. This year ended very dry but snow should sufficiently recharge topsoil moisture and (I hope) normal rainfall will produce a good crop. Producers should check into the different types of crop insurance if they can't afford a production disaster. Newer types of crop insurance will also include both price and production protection through minimum income per acre insurance.

Production Timeliness Risk: With current corn price projections, many are thinking of greatly increasing their corn acres. Producers need to determine how much corn they can logically plant and harvest in a timely manner. Another production risk management tool is crop diversification. Different crops also help spread the workload while maximizing production for each.

Harvest Storage Availability: Lastly, consider if you will have storage for a large bushel harvest crop. Commercial storage in Northwest Wisconsin is still somewhat limited and could be at a premium next year.

Dairy L: More comments on hairy heel warts

Tom Syverud
Extension and Outreach Educator
Ashland and Iron Counties

In a previous newsletter, an article on hairy heel warts from a Dairy-L Internet discussion generated this follow-up from a local dairy farmer. She wrote of her experiences and efforts to minimize the impact of this problem in herds she worked with during and just after college. She had these additional recommendations:

1) Feed a balanced diet,
2) Offer free choice calcium carbonate to all animals,
3) Keep a close watch salt intake which may indicate that the diet is not balanced,
4) Check the pastures for debris,
5) Scrape the feed lots often,
6) Clean feedlots of gravel that is washed in, and
7) Get on a regular hoof trimming schedule.

Cost share and other grants

Kevin Schoessow
Area Agricultural Development Agent
Burnett, Sawyer, & Washburn Counties

EQIP, WHIP sign-up: NRCS is taking sign ups for cost share practices include prescribed grazing, pasture and hayland planting, fencing, tree and shrub planting, prairie grass establishment and many others. For more information, contact NRCS before the **December 29 deadline**.

Drought Assistance: Twelve counties in NW Wisconsin have been declared eligible for disaster assistance through the federal Livestock Grant Assistance Program. Only producers of grazed livestock are eligible. Livestock producers can get an application by visiting DATCP's website: www.datcp.state.wi.us and searching for 'drought assistance,' contacting the Farm Center by phone at 1-800-942-2474 or e-mailing center@datcp.state.wi.us, or visiting your county Farm Service Agency. Applications must be returned to DATCP and postmarked by 1/5/07.

2007 Johne's Program: Farmers who have a certified veterinarian complete a Johne's risk assessment and herd management plan completed by February 28, 2007 can apply for reimbursement of 2007 Johne's disease management costs. Contact **Dr. Andrea Foley,** Division of Animal Health at andrea.foley@datcp.state.wi.us or at 608-224-4874.

Agriculture Diversification and Development Grants: Proposals must be received in the Division of Agricultural Development at DATCP by March 15 at 5 p.m. The 2007 RFP, guidelines, template, evaluation sheet, tips and past projects are available online at www.datcp.state.wi.us, search 'ADD grants' or call Mike Bandli at 608-224-5136.

Grow Wisconsin Dairy Team Grants: As part of a comprehensive Value Added Dairy Initiative, farmers, coops, and dairy businesses can apply through the following grants: Dairy Farm Organic/Grazing Transition or Farmer Entry, Dairy Farm Modernization, Local Dairy Development, Value Chain Development, Commodity Innovation. Visit, www.GrowWisconsinDairy.org, or contact Jim Cisler, at james.cisler@datcp.state.wi.us or 608-224-5137.

Dairy 2020 Grants: Early Planning Grant for farm dairy business planning and dairy modernization, Milk Volume Production (MVP) Grant for capital assistance to purchase milk cows. Visit http://commerce.wi.gov or contact Irv Possin, at jpossin@commerce.state.wi.us or 920-322-1888.

2006 crop research trial results

Phil Holman
Asst. Superintendent
Spooner Ag Research Station

The 2006 growing season proved especially difficult in Northwestern Wisconsin. Extremely dry conditions affected all the non-irrigated trials. The May 1 to September 30 growing season was 6.2 inches short of normal rainfall.

Variety Trial Averages:

Alfalfa	
Irrigated sandy loam soil	5.6 tons dry matter/acre
Corn Silage	
Irrigated sand loam soil	7.4 tons dry matter/acre
Non-irrigated silt loam	2.7 tons dry matter/acre
Corn Grain	
Non-Irrigated sandy loam soil	not harvested
Non-Irrigated silt loam soil	35 bu/acre
Irrigated sandy loam soil	wildlife damaged
Soybean	
Irrigated sandy loam soil	42 bu/acre
Non-irrigated silt loam	24 bu/acre
Small Grains (non-irrigated silt loam)	
Oats	61 bu/acre
Barley	33 bu/acre

Complete University Variety trial Results including the data from the Spooner Ag Research Station can be found at:

Alfalfa:	http://www.uwex.edu/ces/forage/pubs/A1525-2006.pdf
Corn:	http://corn.agronomy.wisc.edu
Soybeans:	http://soybean.uwex.edu/soytrials/printable/index.cfm
Small Grains:	http://soybean.uwex.edu/wheattrials/printable/index.cfm

Dairy Road Show seminar to be held in Rice Lake on January 10

Otto Wiegand
Area Agricultural Agent
Burnett, Sawyer, and Washburn Counties

The 2007 Dairy Road Show will be held in 15 locations around the state in January. The Road Show is a good opportunity to hear the latest developments in hot topics for dairy farmers. The subjects to be covered will include: managing cows with mastitis, strategies to improve profitability, twinning and neonatal calf mortality, and compost and bedded-pack housing.

The nearest location in NW Wisconsin will be WITC at Rice Lake on Wednesday, January 10, from 10:30 to 3:00. The cost, which includes lunch and materials, will be $20 if pre-registered by January 8, or $30 for late registrations. Other sites in northern and central Wisconsin include Menomonie, Loyal, Medford and Plover.

For more information and registration, contact Otto or Kevin at Spooner UW Extension, 800-528-1914 / 715-635-3506, Tim at the Barron County UW Extension, 715-537-6250, Ryan at Polk County UW Extension, 715-485-8600, or Aliesha at Rusk County UW Extension, 715-532-2151.

This Quarter's Events

January 4, Thursday, 9 a.m. - 5 p.m., Wisconsin Local Food Summit, Stevens Point. Contact: 262-857-1948 or aic.uwex.edu/localfood.cfm

January 10, Wednesday, 10:30-3:00, WITC, Rice Lake – Dairy Road Show. Contact: Tim, 715-537-6250 (see article)

January 10, Wednesday, 8 a.m. - Noon, Agronomy Update Meeting, Eau Claire Holiday Inn, campus area. Contact: 715-839-4712

January 16-18, Tuesday - Thursday, Wisconsin Fertilizer, Aglime & Pest Management Conference, Madison. Contact: 608-249-5311

January 23-24, Tuesday - Wednesday, Rice Lake Farm Show, Cedar Mall, Rice Lake. Contact: Tim, 715-537-6250

January 25, Thursday, Meat Production Community Meeting, Ashland. Contact: Jason, 715-373-6104

January 25, Thursday, Private Pesticide Applicator Training, Barron. Contact: Tim, 715-537-6250

January – February, Wednesday-Friday, Phillips, Ladysmith, Ashland, Maple and Spooner - Northern Wisconsin Safari of Ag Specialists - January 17-19, January 24-26, January 31-February 2 & February 7-9, see attached brochure

February 2-3, Friday-Saturday, Holiday Inn, Stevens Pt. - GrassWorks Wisconsin Grazing Conference Contact: Paul Nehring, 715-261-6009, mail@grassworks.org

February 6-7, Tuesday - Wednesday, Upper Midwest Regional Fruit and Vegetable Growers Conference, St. Cloud Civic Center. Contact: 763-434-0400, www.mfvga.org

February 10, Saturday, 8 a.m. - 4 p.m., Shepherd's Clinic, WITC, Rice Lake. Contact: Tim, 715-537-6250

February 15, Thursday, 9:30 a.m. - 3:00 p.m., Heart of the Farm Conference, Ladysmith, focus on the needs of women in agriculture. Contact: Aleisha, 715-532-2157

February 17, Saturday, 9:30 a.m. - 3:30 p.m., Northwest Wisconsin Grazing Conference, WITC, Rice Lake. Contact: Otto or Kevin, 715-635-3506

February 23-24, Friday-Saturday, LaCrosse Center, LaCrosse – MOSES Organic Conference. Contact: 715-772-3153, www.mosesorganic.org

March 6, Tuesday, 9 a.m. - 4 p.m., 2nd Annual Chequamegon Organic Research Education and Training (CORET) Organic Farming Conference, Northland College, Ashland. Contact: 715-373-6104

March 14, Wednesday, 9 a.m. - 3 p.m., Private Pesticide Applicator Training, Spooner Agricultural Research Station. Contact: Kevin, 715-635-3506

March 20, Tuesday, Private Pesticide Applicator Training, Balsam Lake. Contact: Ryan, 715-485-8600

March 22, Thursday, Private Pesticide Applicator Training, Ladysmith. Contact: Aliesha, 715-532-2151

Ashland, Bayfield Counties welcome new ag agent

Jason Fischbach took over duties as the Agricultural Agent for Ashland and Bayfield Counties in October. His predecessor, Vijai Pandian, took a job with UW Extension in Green Bay, WI.

Jason is a 1999 graduate of Carleton College where he studied developmental genetics of plants and sustainable agriculture. He received his Master's Degree from the University of Minnesota in 2003 where he studied the forage potential of warm-season legumes for use in low-input high diversity (LIHD) mixtures of grassland plants for forage or biomass. He spent most of 2001 on the Swedish island of Gotland where he worked on a large organic vegetable and beef farm. Jason has a strong interest in local food systems and perennial plant based agriculture.

As part of this year's Northern Safari, Jason will be giving a talk on opportunities in agroforestry. His office is located in Washburn and can be reached at 715-373-6104 or jason.fischbach@ces.uwex.edu.

Avian Influenza – Are we at risk for the bird flu?

Tom Syverud
Extension and Outreach Educator
Ashland and Iron Counties

Avian influenza is a disease caused by a virus that infects wild waterfowl and domestic poultry. In rare cases, humans and other mammals can be affected. In fact, a low pathogenic strain of avian influenza has been documented at low levels in the United States for decades. The virus currently of global concern is a high pathogenic strain of H5N1 Avian Influenza. This strain first found in Asian countries causes' severe illness and death in poultry. To date this strain has not been found in the US. The High Path H5N1 has caused severe illness in a number of people and mammals in other countries. Approximately 110 deaths have been caused worldwide. The infected people had close contact with sick or dead infected domestic poultry. Practices such as plucking feathers off infected dead birds, selling sick birds in live bird markets, and sleeping in barns with sick birds, where people are exposed to bird droppings, all helped cause infections. Unlike our seasonal flu, which causes 36,000 deaths each year in the US, avian influenza will be an occupational illness of those in close contact with sick and dead poultry.

The High Path H5N1 could reach the US by wild bird migration, smuggling of birds and by travel of infected people. The USDA maintains strict trade restrictions on importation of poultry and poultry products, quarantines live birds, and increased monitoring of commercial markets for smuggled poultry and poultry products. In the event of an outbreak, it is normal practice to humanely destroy healthy domestic birds in a geographical area surrounding the infected birds, and a bird vaccine may be used to protect healthy birds.

Commercial indoor poultry operations usually have strict bio-security procedures which minimize the chances of spreading diseases, including avian influenza. The backyard small poultry flocks may have the greater risk of being exposed to avian nfluenza, which can be carried by wild birds. When wild birds and domestic poultry share water, feeding and living areas, the possibility of disease transmission significantly increases.

Decreased appetite, severe depression, a drastic decline in egg production, swollen combs and wattles and sudden death are all signs a flock may be infected. Lab tests will be needed to confirm the presence of the disease.

If you don't work around dead birds, follow the standard food safety guidelines; wash hands often, keep raw poultry away from other foods, wash knives and countertops in hot soapy water, sanitize cutting boards and dish-clothes in a 10% solution of bleach. Currently there is not imminent threat to Wisconsin because there is no evidence of sustained human-to-human spread of bird flu in other parts of the world.

Milk Money program continues to help dairy farmers

Dr. Pam Ruegg
Extension Milk Quality Veterinarian

Otto Wiegand
Area Agricultural Agent
Burnett, Sawyer, & Washburn Counties

Wisconsin dairy producers continue to benefit from participation in Milk Money, the popular team-based milk quality improvement program offered through University of Wisconsin Extension in cooperation with the UW Department of Dairy Science, and the Wisconsin Milk Marketing Board.

An analysis of 113 herds completing the Milk Money program revealed an average added $1,033 per month increase per farm in quality incentive income from the time herds begin Milk Money until they complete the program. The 113 Wisconsin dairy herds completing Milk Money averaged 265 cows covering 29,835 cows. At $1,033 herd/month, Milk Money participation is returning a total average of $116,727 per month to the participants.

That means that if the improvements hold for a year, an average Milk Money herd of 265 cows sees another $12,396 in income related to milk quality incentives alone. Pooled together, the 113 herds can reel in an additional $1.3 million over the year if the improvements seen during the four-month program continue. At the start of the program, the 113 herds were getting an average of seven cents per hundredweight (CWT) in quality premium incentive. By the end of the program, the herds had increased their incentives to an average of 27 cents per CWT.

Income improvement from milk quality comes from three areas for Wisconsin dairy producers: increased milk production, improved ability to capture quality incentives from milk buyers, and reduced costs associated with mastitis. The program is not limited to larger, freestall operations. Smaller farms can benefit as well.

Data from farms that enrolled in the program beginning in Fall 2001 and continuing through Spring of 2004 were included in this analysis. Most of the teams (78%) included an Extension Agent.

The formation of milk quality teams resulted in positive changes of herd performance. Most of the standard measurements of milk quality improved during the program. Overall, bulk milk somatic cell counts (BMSCC, an indicator of quality) and standard plate count were reduced by 20.2% and 28.4% compared to the first meeting. Individual cow indices of clinical and sub-clinical mastitis were significantly improved. Cull rates decreased by the end of the program.

Additionally, Milk Money participants adopted a significant number of best management practices and many report increased communications about milk quality issues with their dairy professionals. Many teams continue to meet after the program has formally ended. Teams can branch into other important needs for the farm including business planning, dairy modernization or financial benchmarks.

Contact UW Ag Agent Otto Wiegand at Spooner at 715-635-3506, or Milk Money at UW-Madison at 866-867-6455 / 608.262.9480 for more information or to sign up for the program.

Results of alfalfa seeded with ryegrass trials

Phil Holman
Asst. Superintendent
Spooner Ag Research Station

Two trials were seeded in 2005 with alfalfa and Italian ryegrass.

The first trial examined the rate of ryegrass to seed with 12 lbs/a of alfalfa. Seeding ryegrass rates of 0 to 16 lbs per acre were planted. At some other trial locations, the high rates of ryegrass decreased the alfalfa stand but the ryegrass didn't overwinter causing low yields in the second season. At this trial in Spooner, the ryegrass survived the winter and did not increase nor decrease forage yields.

The second trial looked at adding nitrogen during the seeding year of alfalfa, alfalfa/ryegrass, or alfalfa with an oat covercrop. Yields in the seeding year were highest with the oat covercrop harvested for forage: however, an oat forage produces a lower quality feed. In the second year, there was no significant difference in the forage yields depending on seeding crop or nitrogen rate. There was a small but slight decline in forage yield when nitrogen was supplied in the seeding year.

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Kevin Schoessow
UWEX Area Agricultural Agent

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