



Extension Ag Update

providing education and research support to the agricultural industry

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Residue may be Key Infiltration Factor

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During and after planting can be a good time to compare the impact of various tillage and conservation practices on soil erosion and water infiltration in fields. Residue left on the soil surface from no-till and other high-residue tillage systems helps protect the soil from raindrops, which reduces the breaking apart of soil particles and ultimately the erosion of soil. Residue's impact on protecting the soil surface from erosion is well accepted. However, there is also growing interest in the impact of residue and less tillage on increasing water infiltration, which can reduce runoff as well as maintain moisture supplies.

Purdue studies have shown that fields with no residue on the surface similar to conventional tillage can have a 45% runoff rate as compared to no-till fields with high residue that have runoff rates as low as 0.5% of the rainfall. At about 40% residue cover, which is comparable to many mulch tillage systems, the runoff rate was about 40%. The same study shows about 12 tons per acre soil loss with no surface residue as compared to 3.2 tons at 40% residue and 0.3 tons at 93% residue levels. Runoff velocity rates for the same three residue levels were 26, 14, and 7 ft./min., respectively. Less runoff means less soil erosion and more water infiltration, which can enhance groundwater supplies, reduce stream volumes and velocities, and reduce streambank erosion and lessen sedimentation. Increased infiltration also is a good indicator that soil structure is improving for better rooting, less compaction and better air, water and nutrient movement.

While evaluating the field residue for sheet erosion and water infiltration, be sure to check other erosion structures for necessary maintenance or need for new construction to reduce gully erosion or streambank erosion.

Late Planting Guidelines

Ellen Phillips, Extension Educator, Countryside Extension Center, 708-352-0109, phillipse@mail.aces.uiuc.edu

The Illinois Agronomy Handbook provides the following guidelines for late planting. Below are estimated yield losses for corn and soybeans if planting is delayed.

Corn

- May 1 to May 10 > ½ bushel yield loss per day of delay
- May 11 to May 20 > 1 bushel yield loss per day of delay
- May 21 to May 30 > 1 ½ bushel yield loss per day
- After May 30 > about 2 bushels yield loss per day
- June 10 > 3 bushels yield loss per day

Soybeans

Planting in the first half of May generally results in the best yield. Delaying planting beyond the middle of May results in decreased yields, and at an ever-increasing rate as the calendar date gets later. By the end of June, yield potential drops to roughly 50% to 60% of what could have been obtained with timely May seeding. While delayed planting reduces soybean yield potential; the yield penalty for late-planted soybeans is not as great as that for corn. For late-planted soybeans, consider the following.

1. Use Mid to Full Season Variety

Delayed planted fields do not need an earlier maturing soy bean variety. Generally, for each 2 to 3 day delay in seeding beyond the optimum planting period only a one-day delay in maturity will result for the same variety.

2. Use Narrow Rows

It results in maximum sunlight interception in a shorter time.

3. Increase Seeding Rate

- Planting delayed to June 10, increase seeding rate by 10 - 15%.
- Planting delayed to June 20, increase seeding rate by 20- 30%.
- Planting delayed to July 1, increase seeding rate by 50%.

- ▶ University of Illinois
- ▶ Extension Fact Sheets:

▶ Soybean

<http://www.ipm.uiuc.edu/agriculture/corn/corn.html>

Insects: Bean Leaf Beetle
Bean Leaf Beetle, Black Cut Worm, Blister Beetles, Corn Earworm, Grasshoppers, Mexican Bean Beetle, Potato Leafhopper, Soybean Aphids, Soybean Cyst Nematode, Two Spotted Spider Mite

Diseases: Rhizoctonia Root and Stem Rot of Soybeans, Root and Stem Diseases of Soybeans, The Soybean Cyst Nematode Problem, Soybean Varieties with Soybean Cyst Nematode Resistance, Sudden Death Syndrome of Soybeans, White Mold

Corn

<http://www.ipm.uiuc.edu/agriculture/corn/corn.html>

Insects: Armyworm, Black Cut Worm Chinch Bug, Corn Leaf Aphid, Cornblotch Leaf Miner Corn, Earworm Corn Flea Beetle, Corn Rootworm, Corn Root Aphid, Grasshoppers, Picnic Beetles, Sap Beetles Stalk Borer, Two Spotted Spider Mite, Wireworms

Diseases: Corn Leaf Blights and Spots of Corn

Alfalfa

<http://www.ipm.uiuc.edu/agriculture/alfalfa/alfalfa.html>

Insects: Alfalfa Weevil, Blister Beetles, Armyworm, Black Cut Worm, Clover Leaf Weevil Grasshoppers, Meadow Spittlebug, Pea Aphids, Potato Leafhopper, Spotted Alfalfa Aphid, Tarnished Plant Bug

Diseases:
Root and Crown Troubles of Alfalfa

Wheat

<http://www.ipm.uiuc.edu/agriculture/wheat/wheat.html>

Insects: Grasshoppers
Diseases:
Barley Yellow Dwarf Virus Disease of Small Grains, Ergot of Cereals and Grasses. Foliar Diseases of Wheat, Scab of Cereals, Soilborne Mosaic of Winter Wheat, Wheat-streak Mosaic

Rural Route 2 at 1-800-468-1834

<http://www.extension.uiuc.edu/ruralroute/>

The Rural Route 2 service is designed to help farm families get through tough times. This **confidential service** provides referrals for farm business and family financial advice; helps manage economic as well as personal situations; helps locate local support; and identifies assistance through the Illinois Farm Development Authority.



Research

Better Mosquito, Tick Repellents in the Wind?

Judy McBride, ARS News Service, USDA, (301) 504-1628,
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Slap, slap . . . scratch, scratch. It's a familiar aggravation for billions of people who live with mosquitos. But effective repellents to keep those pests from biting—and possibly transmitting serious diseases—have been few and far between. Now, the Agricultural Research Service is seeking a patent on a method for selecting the most effective version of a repellent discovered by ARS researchers more than 20 years ago.

Using the method, ARS entomologist Jerome Klun recently identified one version that is three to four times more effective at preventing yellow-fever-transmitting mosquitos from biting than the original repellent. It's also the optimal version against the species that transmits West Nile virus. The original repellent, called 220 for short, is based on piperidine, a hexagonally-shaped molecule found in trace amounts in black pepper. Two other chemical groups are attached to this hexagon, but each can attach at two different angles. So the repellent can appear in four different versions, known as optical isomers, that can be identified by the way they bend light rays. The number of potential repellents is not limited to these four optical isomers. Other chemical groups can attach to the piperidine scaffold at various locations and angles, yielding dozens of candidates for testing, according to Klun, at ARS' Chemicals Affecting Insect Behavior Laboratory in Beltsville, Md.

<http://www.barc.usda.gov/psi/caib>.

Unlike DEET—the principal mosquito repellent for half a century—piperidine-based repellents don't dissolve plastics, such as sunglass lenses or auto paint. And early reports from an interested company suggest they easily formulate into creams. The original piperidine-based repellent has undergone toxicological testing in a U.S. Army laboratory and passed muster for experimental use on people. Products intended for commercial sale in the United States would have to undergo additional toxicological testing required by the Environmental Protection Agency.

► Resources to Consider

► Pest Management and Crop Development Newsletter

<http://www.ag.uiuc.edu/cespubs/pest/>

A weekly newsletter during the growing season, providing up-to-date information on current pest problems and management options for growers. To order: call (800) 345-6087 or write U of I Extension Newsletter Service, 528WN Bevier Hall, 905 South Goodwin Urbana, IL 61801

2002 IL Agricultural Pest Management Handbook

<http://www.ipm.uiuc.edu/publications/pm-handbook/index.html>

Sixteen chapters covered current pesticide recommendations for pest of Illinois crops.

Manure Transport Rates and Land Application Costs for Tank Spreader System,

Extension bulletin E-2767, 16 p.

Manure storage, hauling and application are increasingly important concerns for livestock producers. This bulletin helps farmers examine their options for manure transport and application including hauling rates for various spreaders, ownership and operating costs, horsepower requirements and costs associated with various operations. Contact the: MSU Bulletin Office, 10-B Agriculture Hall, Michigan State Univ., East Lansing, MI, 48824-1039, 517-355-0240, FAX 517-353-7168. or <http://eenet.msue.msu.edu/bulletin/ordrinfo.html>

Natural Enemies in Field Crops: A Guide to Biological Control, Bulletin E2721

Extensive information on the biological control of insects, diseases and weeds in field crops. 65pp. To order: MSU Bulletin Office, 10-B Agriculture Hall, Michigan State University, East Lansing, MI, 48824-1039, 517-355-0240, or <http://ceenet.msue.msu.edu/bulletin/ordrinfo.html>

Clean Sweep 2001: Dishing the Dirt on Nationwide Pesticide Disposal

Nancy Fitz and Jude Andreasen, Office of Pesticide Programs, The U.S. Environmental Protection Agency (EPA), fitz.nancy@epa.gov, (703) 305-7385 or andreasen.jude@epa.gov, (703) 308-9342 or at the website <http://www.epa.gov/pesticides> Source: <http://aenews.wsu.edu/Mar02AENews/Mar02AENews.htm#CleanSweep>

This report summarizes of state and local government efforts to protect the environment by collecting and disposing of unwanted agricultural pesticides. Over the past twenty years, state and local governments have collected and safely disposed of more than 24.6 million pounds of unwanted pesticides. These efforts, known as “Clean Sweep programs,” focus on agricultural pesticides but may also include other pesticides, such as those used by home-owners, golf courses, or highway departments along their rights-of-way. There is no federal mandate to conduct these collections.

Clean Sweeps are the results of state and local initiatives. The states have adopted a variety of approaches to finance and implement their programs. While some programs are conducted on the county level, Clean Sweep Report classifies the information by state. All of the programs have the same goal: fostering environmental protection and pollution prevention by removing these potentially hazardous materials from the environment.

Forty-six states have conducted at least one Clean Sweep program. The number of states participating in Clean Sweep activities increased rapidly from the late 1980s to the middle 1990s. Based on data provided by the states, EPA estimates that Clean Sweep programs nationwide collected over 24.6 million pounds of unwanted pesticides from 1980 through 2000. A relatively small amount of pesticide was collected through 1991 – about 2.0 million pounds. The annual total averaged almost 2.9 million pounds between 1995 and 2000.

Science Without Boundaries

<http://www.ostp.gov/html/gstw.html> Jim De Quattro, ARS News Service, USDA, (301) 504-1626, JimDeQuattro@ars.usda.gov

Designed for children about 8 to 13 years old, but has links to more advanced material. It highlights the importance of science education in preparing today's students for tomorrow's discoveries for helping resolve global issues such as poverty, disease, food supplies, environmental degradation and sustainable use of natural resources. Links to Spanish and English versions of the site can be found at: <http://www.ars.usda.gov/is>

▶ More Resources to Consider

▶ Law and Taxation

<http://www.farmdoc.uiuc.edu/legal/index.html>

New information and discussion have been added on recent court cases as well as topics such as “Abusive Trust Schemes”, “Income Tax Consequences of Changing Business Entity” and “Reverse Like-Kind Exchanges”

IL Crop Budgets for 2002

http://www.farmdoc.uiuc.edu/manage/enterprise_cost/2002_crop_budgets.html

Historical crop production costs by region of Illinois

http://www.farmdoc.uiuc.edu/manage/enterprise_cost/crop_revenue_less_variable_cost.html

By the Numbers Newsletter

<http://agebb.missouri.edu/valueadded/newsletter/numbers/index.asp>

Editor: Joe Parcell, Missouri Value Added Development Center

This newsletter is about breaking down complex analyses into simple information reports. The newsletter is going to provide numbers and figures about trends in the food industry, consumer purchasing patterns, industrial uses, international trends, and pricing information.

GMO Crop Economics

<http://www.leopold.iastate.edu/pubinfo/papersspeeches/biotech.html>

A survey by Mike Duffy, Iowa State University economist, using crop data from 2000, were very similar to what he found in 1998; there is no economic advantage for Iowa farmers to plant Roundup Ready soybeans or Bt corn.

Virtual Library of Sustainable Development

<http://www.ulb.ac.be/ceese/meta/sustvl.html>

An extensive of world wide sustainable and environmental links.

In nearly seventy-five percent of the states with Clean Sweep programs, the state's Department of Agriculture or the pesticide regulatory agency has the lead for organizing and overseeing the program. Twenty-five states use single-day events as their only collection method, but other states use combinations of single-day events, permanent sites, and on-site pick up. Most collected material is incinerated as hazardous waste. Based on data from fifteen states, the cost per pound to dispose of unwanted pesticides has decreased significantly over the past decade. However, the cost of Clean Sweep programs is minor compared to the cost of cleaning up the pollution that can result from improper disposal of unwanted pesticides. The quantity of unwanted pesticides collected and disposed by Clean Sweep programs is only a tiny fraction of the pesticides used in the US.

University of Illinois Plant Clinic: Open May 1 - Sept. 15

1401 W. St. Mary's Road, Urbana, IL 61802, 217-333-0519

<http://www.cropsci.uiuc.edu/research/clinic/clinic.html>

The University of Illinois Plant Clinic has served as a clearinghouse for plant problems since 1976. Services include plant and insect identification, diagnosis of disease, insect, weed and chemical injury (chemical injury on field crops only), nematode assays, and help with nutrient related problems, as well as recommendations involving these diagnoses.

Microscopic examinations, laboratory culturing, virus assays, and nematode assays are some of the techniques used in the clinic. This multidisciplinary venture is managed through the Crop Sciences Department but relies on input from many departments, including both research and extension components. Most of the diagnostic work is done at the Plant Clinic, but specialists are consulted as needed in the areas of botany, entomology, horticulture, mycology, plant pathology, soils, soil fertility, and weed science, among others. To submit a sample to the Plant Clinic, call your local Extension office to request Sampling Guidelines and a fee schedule.

Educational Opportunity

Throughout the year University of Illinois Extension offers work shops, round tables, field days and other events to keep producers up-to-date on the most current research based information. Keep in touch with your local Extension Office for programs addressing the topics that interest you and are offered in your County. To find your counties website go to: <http://web.aces.uiuc.edu/ve/>

Expert Forum on Honey Bees

<http://gears.tucson.ars.ag.gov>

Got a question about honey bees? Now you can send your questions by computer to honey bee experts at the Agricultural Research Service's Carl Hayden Bee Research Center in Tucson, Ariz. The center's researchers, who are international authorities on honey bees, will reply via Internet in about 24 hours. A special category called "Student Forum on Honey Bees" gives kindergarten through 12th-grade students the opportunity to use pre-existing questions as a template to help develop new questions on their own.

Specialty Cheese Market Report

http://www.foodmap.unl.edu/report_files/

[The Specialty Cheese Market.pdf](#)

This report presents an overview of the specialty cheese market and the marketing of specialty cheese products. The tremendous growth of the retail and foodservice specialty cheese market is examined. The report also attempts to uncover some of the opportunities and barriers associated with entering the specialty cheese market.

EPA/USDA Reports: Global Warming and Ag

<http://www.epa.gov/globalwarming/emissions/national/methane.html>

Greenhouse Gas Emissions and Agriculture

<http://www.usda.gov/oce/gcipo/greenhou.htm>

These reports present information on agriculture and global warming. Twenty-eight percent of US methane emissions in 1999 came from agriculture

Sizing Silage Piles

<http://www.uwex.edu/ces/crops/ufwforage/storage.htm>

A spreadsheet to automate the process of sizing a silage pile.

About the Ag Update Newsletter

The Ag Update Newsletter is a bi-monthly newsletter providing education and research support to the agricultural industry. Current and past issues may be found at the following website <http://www.urbanext.uiuc.edu/agupdate/index.html>

Contact your county Extension office and request to be put on their agricultural mailing list to receive the local agricultural newsletter and notices about upcoming agricultural events near you. To find your counties location, phone and website go to: <http://web.aces.uiuc.edu/ve/>

For further information about this newsletter, please contact:

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