Water Watch

A newsletter for the Maquoketa River Watershed

Project News

Nutrient management field demonstrations increase in 2003

by Chad Ingels, nutrient and manure management specialist, Maquoketa Watershed Project

The scope of nutrient management issues and geographic locations of manure, nitrogen, phosphorus and pesticide management field demonstrations has increased for crop year 2003.

Engaging new cooperators is the primary goal for this crop year. Partners include the Iowa Corn GrowersAssociation members and Mud Creek project (Muscatine County) nutrient Best Management Practices (BMP) priorities. Agriculture supply company research and Iowa State University Agronomy research in northeast Iowa have also resulted in expanded geographic coverage of field demonstrations.

Emphasis has been placed on field-scale, multiple manure-rate, side-dress application of nitrogen, including multiple rates and timing, and manure, phosphorus (P) and nitrogen (N) management in no-till corn production. N and P management from laying flock manure is also receiving attention.

Multiple management alternatives on some of the 15 cooperating farms will provide 37 data sets from crop year 2003 to build multi-year and multi-location northeast Iowa information for evaluation by area crop and livestock producers.

Seven corn following soybean growers are hosts of replicated trials using six N rates ranging from zero to 150 pounds per acre and three P rates which include one- and two-year P crop removal rates.

Multi-year and location data sets collected in crop years 2000, 2001 and 2002 on 16 northeast Iowa farms demonstrate that 90 pounds of N is the optimum economic N application rate in an average corn production environment.

The optimum N rate increased to 115 pounds of N per acre in 2002 when corn yields from the 120 pound N rate averaged 213 bushels per acre across seven farms.

No yield response to added P has been found on the 16 farms during the last three years. This is primarily due to 88 percent of the demonstration site soils testing high or very high in P prior to the P trials.

Field-scale Geographic Information System-Global Positioning System multi-rate N demonstrations are in progress on six farms. This demonstration includes side-dress N being applied on four of the farms. The Iowa Corn Growers Association is supporting yield loss and end-of-season corn stalk nitrate N analysis costs on the field-scale trials. The same costs are covered for the three multi-rate (four or five rates) swine and dairy manure cooperators.

Seven producers are evaluating N and P manure nutrient resources from swine and laying flocks. In addition, three of the producers are evaluating purchased manure.

A seed treatment and potential mid-season replicated insecticide treatment trial is in place if the soybean aphid infects northeast Iowa fields as it did in 2001.

Cooperators are Bruce Reade, Wayne Braun, John Kummerfeldt, Larry and Mark Recker, Matt and Larry Gaul, Steve Goldenstein, Jon Downer, James Ingels, Collin Jensen, Trout Run Farm, David Petersen, Joe Wingert, C & J Farms, Nolan Knight and RandRod Farms.

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Household hazardous materials require careful disposal

by Charles Wittman, communication specialist, Maquoketa Watershed Project

What do you find when you look under your sink or in your garage? It's likely that you'll find everyday products that are used for cleaning, home improvement, vehicle maintenance, lawn and garden care, crop protection or fertilization.

Many can cause personal injury or illness during handling and use. These household hazardous materials (HHMs), if not disposed of properly, can be a potential problem for ground and surface water quality and the environment.

What are household hazardous materials? And why can they be a problem? HHMs are placed in four categories:

•Toxic products can cause injury or death if inhaled, ingested or absorbed through the skin.

•Caustic or corrosive chemicals or its vapors can cause deterioration or irreversible alteration in body tissues, or wear away or deteriorate the surface of a material.

•Flammable or combustible materials can ignite or explode under normal working conditions.

•Reactive materials can explode through exposure to heat, sudden shock, pressure or incompatible substances.

HHMs may fit into more than one of these categories. Aerosols may be flammable and toxic; rechargeable (NiCad) batteries are toxic, corrosive and reactive; oven cleaner is toxic and corrosive; and motor oil is flammable and toxic.

Oelwein city councilman Duane Brandt and Rose Moser with a display of common household hazardous materials shown at the Oelwein meal site the week before Fayette County's two-day HHM drop site events held in April. (Photo courtesy Oelwein Daily Register)

An HHM safety chart, listing HHMs, nonhazardous alternatives and guidelines for proper disposal, can be found at the Iowa Department of Natural Resources (IDNR) Land Quality and Waste Management Assistance Division's Web site, http://www.state.ia.us/dnr/wmad/index.html, under Hot News.

The IDNR says nearly 80 percent of Iowans get their drinking water from groundwater sources. "If improperly used and disposed of, HHMs often end up in our drinking water. Contaminated water leads to a water purity problem, often resulting in costly water treatment," according to the IDNR web site.

"HHMs dumped in storm sewers can quickly contaminate surface water, which is also used as a drinking water source and is critical for fish and other aquatic wildlife."

An example of improper disposal is when automotive oil is poured down a storm sewer – a pint can form a slick as big as a football field on a pond or lake, according to the IDNR.

Product labels alert consumers if the product is considered hazardous. Look for words such as poison, danger, warning or caution.

Some HHMs can be disposed easily at home. For example, left-

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HHM cont.

over latex paint can be painted on cardboard or newspaper and left to dry before disposing in the trash; empty aerosol cans and alkaline batteries can be placed in the trash.

But many unwanted HHMs should only be disposed of through Regional Collection Centers (RCC). In the Maquoketa River watershed, most counties have a facility, a drop-off site or other program for dealing with HHMs. There are four RCCs serving these counties.

The HHMs requiring special disposal include ant and roach killers, insecticides, mercury batteries, brake fluid and oil-based paints. Other HHMs, such as lead-acid car batteries, can be recycled through retail dealers. The IDNR reports 700 collection sites in the state where do-it-yourself mechanics can take waste fluids, oil filters and other automotive waste items.

Here's a brief rundown of the county HHM disposal programs in the Maquoketa River watershed:

Clinton County has a permanent HHM facility at their landfill west of Clinton, which serves Clinton, Jackson and Jones counties. The facility is open during landfill hours, 7:30 a.m. to 4:30 p.m. weekdays and 7:30 a.m. to noon on Saturdays. The facility has a mobile unit that makes four to six visits annually to smaller communities, according to Jason Bahnsen, site supervisor. Requests for the visits usually come from community representatives on the solid waste agency board, says Bahnsen.

The Clinton County mobile unit made a rare out-of-county visit to **Fayette County** for two HHM drop-off days in April, one in the north and one in the south of the county. The public response to the two events was "just tremendous," according to a county spokesman. There were no plans for a drop-off day in the fall and there are no drop-off sites in the county.

HHM spills

For small HHM spills, the IDNR recommends using common sense:

Keep the area well ventilated; open windows or doors. Keep children and pets away from the area. Wear protective clothing and gloves.

Contain and cover a liquid spill with absorbent material (cat litter, clay or sand). Sweep and scoop material into a container with a lid or into double plastic bags. Take the waste-filled container to a Regional Collection Center for safe disposal.

Buchanan County has a drop-off site at a small warehouse on the landfill site north of Independence. Residents may drop off HHM at the site by appointment. The county contracts with the Bremer RCC for pick up and disposal.

Several years ago **Clayton County** hosted a "toxic waste" day, funded by state environmental monies, a county spokesperson said. Although it was successful, with funding cuts it's unlikely to be continued, the spokesperson said. The county currently does not have a site where HHMs can be left.

Delaware and **Dubuque** counties are served by the Dubuque RCC, located at the county landfill near Highway 20 west of the city of Dubuque. The RCC serves both residential and Conditionally Exempt Small Quantity Generator (CESQG) facilities. Dubuque County previously held one-day HHM cleanup days, according to RCC manager Nancy Otterbeck. Now, the RCC holds periodic, one-day mobile events, such as the pickup site event at New Vienna this spring. There are plans for a fall site in Delaware County.

Residents of the two counties can take their HHM to the landfill site if they call ahead and make an appointment. There's no charge for households, but there's a fee for small businesses. At the site, the HHMs are packed in 55-gallon drums and four times a year the drums are trucked to a Chicago firm which specializes in disposal of HHM.

Jones County has a contract with the Clinton County RCC and landfill, according to Stuart Ireland, chairman of the solid waste managment commission. The county has a drop off site at the county home near Amber. County residents can drop-off HHM at the site 8 a.m. to 3:30 p.m. Monday through Friday and 8:30 a.m. to 4 p.m. Saturdays. In the three years of the program it has worked well, says Ireland.

Jackson County has a transfer station for HHM near Andrew, in the center of the county, which is open for drop-offs from 8 a.m. to 4 p.m. weekdays and 8 a.m. to noon on Saturdays. Again, the HHM is transferred to Clinton RCC. Jackson County held HHM days before the opening of their dropoff site, according to a county spokesperson.

Nitrogen losses significant from tile drainage

Corn and soybean production has been identified as a major contributor of nitrate nitrogen (NO_3-N) to surface water. University scientists have observed much greater drainage volumes and NO_3-N losses (30 to 50 times higher) from corn and soybean compared to crops such as alfalfa and CRP.

A study conducted in southern Minnesota showed 65 percent of the annual tile drainage volume and 70 percent of the annual NO_3-N losses in subsurface drainage occur in April, May and June. Concentrations and losses of NO_3-N are greatest in wet years following abnormally dry years, according to Gyles Randall, University of Minnesota.

Nitrate losses to tile drainage are significantly influenced by rate of N application and moderately influenced by time of N application. Southern Minnesota studies conducted during the last 25 years have found a 15 to 20 percent reduction in NO_3-N losses in tile drainage by reducing N application rates from 160 pounds to 120 pounds per acre for corn following soybean.

Spring application of anhydrous ammonia can reduce NO_3-N losses by 15 to 20 percent compared to fall application of anhydrous ammonia in University of Minnesota studies.

Pasture walks in Maquoketa watershed

Two pasture walks are sheduled for June in the Maquoketa River watershed. The first is **June 11** at 1 p.m. at the Dan Pfab farm, Bernard. Pfab is developing a grazing system for a 70-cow Holstein dairy and has a new, low-cost milking parlor.

Pfab's farm is four miles northeast of the Highway 151-County Y21 intersection in Dubuque County, then south one-half mile on 12-Mile Road.

On **June 26**, at 6:30 p.m., the Andrew Jackson Demonstration Farm is the site of the second pasture walk. The farm has a newly-expanded system for stockers and cow-calf, new seedings of orchard grass, white clover, alfalfa, reeds canary grass, kura clover and fescue. The demonstration farm is north of Andrew in Jackson County on Highway 62 to County Road Y61.

For more information, contact Iowa State University Extension specialist Larry Tranel, Dubuque, (563) 583-6496 ext. 14.

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