

Looking Out For The Environment

Managing Crop Residues

Conservation tillage has long been used to improve tilth, conserve moisture and provide food and cover for wildlife. It's also an excellent way to prevent soil erosion and protect surface water supplies from contamination by field runoff. About 65 percent of the environmental compliance plans signed by farmers include some form of conservation tillage.



The key to protecting surface water near your farm is to implement your approved conservation plan. Crop residues on your fields will absorb the impact of falling rain and slow water runoff, reducing

erosion considerably. Soil conservation practices will also help reduce the unwanted movement of ag chemicals from your fields into streams or lakes.

The amount of residue you will have depends on the crop you



last harvested. Corn, for example produces about pounds of residue per bushel,

while soybeans produce about 50 pounds. In addition, the size, texture and weight of each individual piece of corn residue is greater, so more ground cover is provided.



To be sure your tillage operations are meeting residue goals, use the measur-

ing steps outlined below. If you are missing the targets, look for ways to boost residues.

The Right System For You

The proper tillage system for you will depend on your soil type, weather conditions and tillage



practices. Remember, the more you till the residue, the more it is buried.

Every tillage operation you perform reduces the remaining cover somewhat.

The tillage practices you select should allow for at least 30 percent residue cover on your field after planting. Some compliance plans require as much as 40 to 50 percent residues on the soil surface.

Use the accompanying measuring steps to determine the amount of residue in your fields. After awhile you'll know what a certain residue level looks like. For more information on residue management, contact your local Soil and Water Conservation District, the Soil Conservation Service or the Cooperative Extension Service.

HOW TO KEEP CROP RESIDUES

1. Include a high residue producing crop, such as corn, in your rotation sequence.
2. Reduce the number of tillage passes.
3. Plant rye or wheat as winter cover crops.
4. Set chisels and disks to work the soil shallower.
5. Drive slower during tillage operations.
6. Use straight shanks and sweeps on chisel plows instead of twisted shanks.
7. Convert to a minimum till or no till system.

Measuring Residue

Choose a typical part of the field. Select a 100 foot line with marks every 12 inches. Stretch the line diagonally across the crop rows so each end of the line is over a row.

Walk the line and count each mark with crop residue directly under it. (Don't count residue smaller than 1/8 inch in diameter.)

The total number of marks directly over a piece of residue is the percent cover for the field. For example, if you counted 45 marks, you have about 45 percent crop residue.

Repeat the procedure at least three times in different areas of the field and average the findings.

This information is provided by the Alliance for a Clean Rural Environment, a non-profit, non-political organization encouraging environmental stewardship and protection of water quality, supported by the makers of crop protection chemicals.

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Keeping Your Well Water Safe

Is Your Ground Water Vulnerable?

For rural Americans, wells are the most important source of water for their family, animals and crops. A turn of the tap brings water for drinking, cooking, livestock, crop irrigation and many other uses.

Because it's so valuable, it's critical that we all make every effort to keep our well water safe. To protect it from contamination, you need to know as much as you can about the chemicals you use and the land

you farm. Listed on the right are some factors that will determine just how careful you need to be.

Some combination of four major factors determine whether an ag chemical is likely to reach ground water: properties of the chemical, properties of the soil, conditions of the site, and chemical use management practices. Runoff into nearby surface water is also affected by these factors. For each site and combination of factors, the potential

for water contamination can vary greatly.

Agchemical containers often list on their labels warnings about their potential to leach to ground water. If you can't find the information you need, your Cooperative Extension Service, USDA's Soil Conservation Service, EPA or manufacturer's representatives can provide information on the leaching potential of different ag chemicals.

Chemicals on Hand:

If spilled on the soil, would your ag chemical products leach downward instead of binding to the soil?

If spilled, would your products break down slowly in the soil?

Site Characteristics:

Is the water table (ground water) near the surface of your farmland?

Are there sinkholes or unsafe wells on your property?

If spilled, would your products runoff toward wells or surface water supplies?

Soil Properties:

Is your soil porous allowing large quantities of water to move through it rapidly?

Is soil organic matter insufficient to help bind spilled chemicals and slow their movement in the soil?

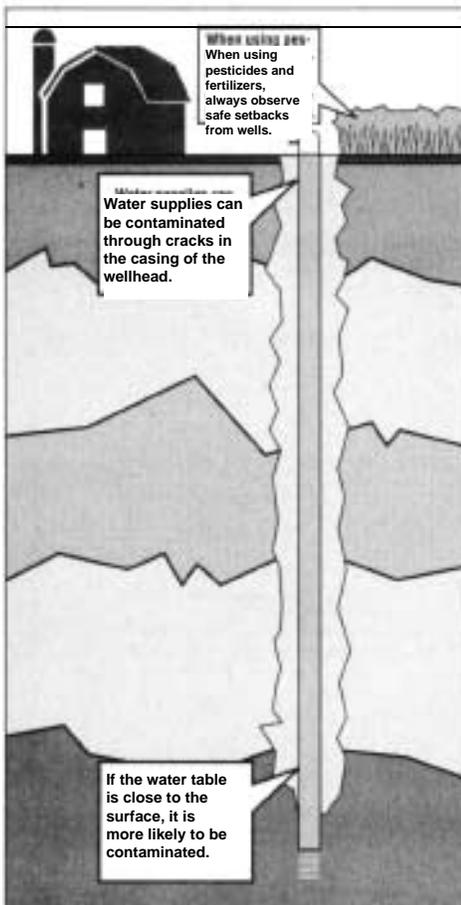
Management Factors:

Do you store, mix or load chemicals near your wells?

Do you fail to properly rinse ag chemical containers?

Is your chemigation or spraying equipment faulty or miscalibrated?

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Farming Smarter

To protect your well water, carefully consider your choice of chemicals, cultivation practices and other management decisions for your crop, soil type, land condition, weather patterns and farming situation. These decisions are especially important if you farm in an environmentally sensitive area- one with highly vulnerable water supplies, wildlife or water fowl.

Doing a better job of managing ag chemicals doesn't necessarily mean a greater burden for you. It just means everyone must keep farming smarter, to protect the very resources that make our countryside such a great place to live.

Below the Surface

If you could look beneath the surface of your farm, you'd likely find a complex system of rock, sand and gravel "containers" (aquifers) that provide water for drinking, irrigation and other uses.

Roughly 97 percent of rural Americans depend on this underground water supply for drinking. Pure water is impossible to find; nature and mankind have dissolved all kinds of things in our water. But, most people find it unacceptable to have even the tiniest traces of pesticides in their water, no matter how insignificant. Keep this in mind as you carry out your crop production activities.

Looking Out For The Environment

Making IPM Work For You



proven, not-so-new pest control system that is gaining popularity is Integrated Pest Management, or IPM. Chances are likely that you already use some IPM practices, but you've never stopped to think of them that way. In practice, IPM blends chemical, biological and cultural pest

control practices to produce a sound economic and environmental strategy.

Whatever you call IPM, it really involves putting the various pieces of the production or maintenance puzzle together to form the most profitable, sustainable and environmentally sensible pest control

system for you.

As you evaluate your total IPM program, consider this:



SUPPRESS, DON'T EXTERMINATE. One focus of an effective IPM program is to suppress

excessive pests, not try to wipe out an entire pest population



This permits a combination of techniques that might be used to limit weed, insect and disease pests to trivial levels, below damage that is serious and represents an economic threshold.



KNOW YOUR SITE'S ECOLOGY. You probably know the agronomic aspects of your property like the back of your hand, but you should also appreciate its ecological and environmental components. For example,



how close are you to wells, wetlands, groundwater recharge areas,

surface water supplies or aquatic wildlife habitats? Has the ecology of your property changed over the past five to 10 years? Have pest problems grown as you've changed practices or removed natural areas that might have been home to

birds or natural insect predators? Keep records of these observations and look for ecological trends.



GET ADVICE FROM THOSE YOU TRUST.

Developing a successful IPM program takes time and extra care to monitor, plan and implement. You can turn to your county Extension agent, local conservation district office or pesticide retailer for help.

Pesticide dealers frequently provide farm services such as field scouting, pest monitoring, field map-



ping, soil and plant analysis, determination of economic thresholds and suggestions on the most appropriate pest control methods. They also can determine if any of the new, more environmentally compatible, microdose pesticides are candidates for your IPM program.



MAKING IPM WORK.

If you haven't already done so, consider incorporating an IPM approach into your pest control efforts. It's an environmentally sound approach to pest control that deserves your attention.

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Practices You Can Use

Examples of IPM practices you can use throughout the growing season include:

- use of insect, disease and nematode resistant seed varieties and transplants;
- encouraging healthy, rapid plant growth by soil testing and balancing soil fertility;
- soil tillage and planting rotation programs that reduce pest populations, runoff and soil erosion;
- adjusting planting dates to escape key insect life stages or weed germination periods;
- scouting for buildup of damaging pest populations and treating with pesticides when economic thresholds are exceeded;
- protection and encouragement of beneficial predator species;
- appropriate irrigation scheduling; and
- selection and proper use of environmentally compatible pesticides.

