Consider Crop Residue Levels in Your 1992 Tillage Plans

Ignoring your conservation plan this spring could prove costly!

Buying chemicals, seed, parts, fixing machinery, too much rain, not enough rain, finding good help for the planting season... You've got a lot on your mind - but you better add one more item. Dig out your conservation plan and make sure you'll be in compliance at the end of the hectic planting season, or you may end up with more on your mind than you bargained for.

According to Shirley Gammon, assistant state agronomist with the Michigan Soil Conservation Service (SCS), the organization's field staff will be conducting spot checks on 5 percent of all farms with conservation plans this year. Fields will be selected by a random drawing of ASCS farm tract records for inspection.

In addition, those farms that revised their conservation plans last year, and those farms which have complaints filed against them with the SCS, will also be inspected. SCS staff will be looking primarily at residue levels in your fields after completion of planting to see if you're meeting the requirements of your conservation plan, called for in the 1985 farm bill.

Gammon says those residue levels vary from farm to farm based on the specific conservation plan established by the farmer and the district conservationist. A number of those plans call for residue levels of 30 percent after completion of planting.

"It's not a blanket statement that farms have to have 30 percent residue levels after planting; it's what's in their specific plan that we check them on," explained Gammon.

"Thirty percent is a standard measurement that seems to work well with most farms."

Gammon says that if a producer has doubts about being able to meet the required levels of field residue after tillage and planting, then a phone call should be made immediately to the district conservationist.

"Producers shouldn't just Ignore the potential for a problem and hope they don't get pulled for a spot check," cautions Gammon.

"If they foresee a problem, we can often come up with possible substitutes that will result in adequate erosion protection, before a farmer gets into a compliance problem."

A producer is selected for a spot check and there is a compliance problem, the farmer and his conservationist will be notified and they will begin withholding farm program benefits, according to Gammon. The producer does have an appeal process, but basically he has to be actively applying his plan and be in compliance," she said.

Those farm program benefits mean all USDA farm program benefits, cautions Gammon. To protect your farm, and maintain farm program eligibility, turn to page 10 for other photo samples of various levels of field residue, as well as tips on things you can do to preserve residue levels.

"If farmers have any questions on exactly what they have to do to stay in compliance, now is the time to ask the district conservationist and clarify those questions rather than waiting," advised Gammon.

The Former USSR - Has Anything Changed Besides the Name?

"In spite of what is often said in the popular press, the CIS economy has not been privatized, prices have not been freed, and there has been no movement toward significant market reform in the Commonwealth of Independent States (CIS)," claims Richard Ebeling, professor of Economics from Hillsdale College.

Ebeling, who spent an estimated three months over the last year in the CIS, spoke to nearly 120 members of Michigan Farm Bureau's Commodity Advisory committees about the state of affairs in the former USSR. He claims that despite all the news of reform, nothing has really changed other than the name and a few faces, jeopardizing the future of the CIS and putting it on a crash course for failure.

"All of the ministries, all of the institutional structures, the vast majority of the personnel who ran the ministries and the bureaucracy 12 months ago are, for all intents and purposes, still the same people in control today," explained Ebeling.

According to Ebeling, the lack of reform even applies to the state owned collective farms, which were to have been privatized by March 1, according to a decree issued by Russian President Boris Yeltsin, technically abolishing collective farms.

Those collective farms were to have been incorporated to allow those who worked on the farms to become joint stockholders, or they could be divided up into family plots. But Ebeling says those grand plans have fallen miserably short of expectations.

"The plans have been ignored, evaded, but not implemented," exclaimed Ebeling. "If nothing does change in the agricultural sectors soon, and I mean very soon, it could be an economic disaster for Russia."

Ebeling cautioned that without privatization of land, and real reform, the situation will be critical by next fall and winter, since surplus food and money previously available was used to get through last winter.

"Unless they privatize the land, unless they give the farmers incentives by price and profit opportunities, unless they privatize the industrial sectors so that there is a way on the real market to acquire tractors, and other farm equipment and implements, nothing will happen," said Ebeling. "The economy needs to be privatized radically and prices need to be freed simultaneously so that prices can communicate information about costs and selling prices."

Ebeling was equally critical of aid extended to the CIS by the United States government, saying that despite short term gains for U.S. agriculture, such aid commits the CIS to almost certain failure.

"What incentives are there to be a private farmer in Russia, if the United States is either giving food away or at a below market subsidized price that destroys all profit incentive in the foreseeable future for the Russian farmer," asked Ebeling.

Ebeling suggested that farmers would be better off to forego the short term market benefits, and that the U.S. government say no to future aid of the CIS institutes the radical reform measures needed to get "their own house in order" so that they can begin to pay for their imports.

"While that, in the short run, means a few less dollars in your pocket, I personally think that in the longer run, if the Russians do the right thing by integrating themselves into a true world market economy, it will be more profitable for you," Ebeling said. "All you'll make now is some short-run profits with no long-term improvements for either them or us."

When asked about the role that agriculture could play in easing hunger concerns in the CIS, Ebeling responded that technological education and management skills are desperately needed and would be very useful to the Russian farmer, but again argued that all the training will be worthless without true reform measures.

"The Russian farmer needs the western knowledge and expertise that American farmers possess," said Ebeling. "But all of that technological knowledge is not going to be applied or implemented or taken advantage of unless the institutional changes take place, so that people have the opportunity in a real market to take advantage of it."
Flooding of a Different Kind Shuts Down the CBT

No it wasn't flooded fields across the corn belt that halted Chicago Board of Trade (CBT) action for three full days in mid-April. It was a break in the walls of a network of underground tunnels flooding the basement of the CBT with Chicago River waters, that brought trade activity to a stop, according to Knight Ridder News.

Commonwealth Edison spokesman Warren Vahl said water poured into the basement of the CBT at a rate of 30,000 to 40,000 gallons an hour. Massive pumps were used to remove the water at roughly the same rate to prevent the walls of the building from collapsing.

At one point, water was within three to four feet of a critical telephone and electrical equipment. Divers hired by ComEd lowered into the CBT basements by crane through a hole cut in the sidewalk directly east of the building. The divers were able to determine that most of the water was entering through a series of conduits that bring fiber optic communication cables from the tunnels into the CBT.

Trading firms with computer, clearing and phone systems at the CBT were hard hit by the flooding, unable to clear trade transactions. Many firms moved temporarily to the Chicago Mercantile Exchange which wasn't affected by the flood.

Although it's too early to estimate dollar losses, according to Les Rosenthal of Rosenthal/Collins Group, trade volume for the month of April was trailing 10 percent behind last year's pace. Cargill Investor Service's operation was brought to a virtual standstill because their entire phone and computer system were based at the CBT.

According to Bruce Sutherland of Michigan Agricultural Commodities, Inc. such an incident had to happen, now was the time fiscal year budget.

According to MDA Director Bill Schuette, MDA will minimize the impact of the cuts in its food safety responsibilities. "It's not easy - it means that we're lean but we're still getting the job done," he said. "There are no budget implications for Rights-to-Farm, as an example of the things we're doing to make sure we meet out responsibilities to agriculture."

Schuette said the executive order means a reduction in MDA staff, by not filling positions that have been, or will be, vacant. Legislators have 10 days to approve the executive order.

The executive order reduces MDA's budget for agriculture to cut another half million dollars from its current fiscal year budget. The 1.8 percent cut follows a $14.1 million budget cut last October, at the start of the current fiscal year.

By contrast, in 1992 the department will spend about $62 billion, almost six times the present expenditure. By 2020, the budget is projected to increase by 27 percent of the budget now goes to discretionary programs .

Engler's Executive Budget Order Impacts MDA

The executive order issued by Gov. Engler recently to bring the state's budget out of a projected $500 million shortfall, could mean that once the legal battle over Agriculture to cut another half million dollars from its current fiscal year budget. The 1.8 percent cut follows a $14.1 million budget cut last October, at the start of the current fiscal year.

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Minor Crop Protection Assistance Act

MBF Position

MFB supports the legislation and has asked members of the Michigan congressional delegation to cosponsor H.R. 4764. This bill is important to Michigan producers of fruits, vegetables and other commodities.

As of April 15, Congressmen Dave Camp, Bob Davis and Paul Henry had cosponsored the bill.

MBF Contact

Al Almy, Ext. 2040

Soybean and Oilsseed Loan Origination Fee

MBF Position

An petition has been received by the International Trade Commission (ITC) from Hong Kong asking for the granting of a Generalized System of Preference (GSP) status for goya cheese. If granted, the imports of this cheese from Hong Kong would be allowed free of all U.S. tariffs. The duty free import status could result in the importation of an estimated 50,000 to 100,000 tons of goya cheese. A similar petition by Hong Kong was rejected less than one year ago.

MBF Contact

Al Almy, Ext. 2040

McCarran-Ferguson Act

MBF Position

MFB opposes attempts to repeal or modify the McCarran-Ferguson Act and has written all members of the Michigan congressional delegation to urge support of continued state regulation of insurance. The current system of state regulation allows states flexibility in addressing problems.

MBF Contact

Al Almy, Ext. 2040

H.R. 4764 has been introduced to increase the research, registration and availability of safe chemicals for “minor crops.” The high cost of developing the data required by EPA regulations is leading many pesticide manufacturers to voluntarily cancel “minor uses” of their products.

The legislation would define “minor use” as the use of a pesticide at a concentration or in a use that does not provide sufficient economic incentive to support registration if the use has not been determined to pose an unreasonable risk to health or the environment. It would allow the EPA administrator to waive certain data requirements for a minor use, only if it is determined that the minor use does not present an unreasonable risk to human health or the environment. It provides 10 years of protection for registration data submitted after the date of enactment that relates solely to the minor use registration.

The EPA administrator would be required to complete the review of applications for registrations of certain minor uses within six months. The administrator also could provide conditional amendments to pesticide registration to permit additional minor uses of certain pesticides, provided such uses do not significantly increase any risks associated with the pesticide.

Both USDA and EPA would be directed to establish minor use programs to identify and coordinate development and registration of minor crops of protection chemicals. The legislation also establishes a minor use matching fund to help ensure the continued availability of minor use chemicals.

MBF Contact

Vicki Pontz, Ext. 2046

S.B. 1, sponsored by Sen. Nick Smith, would repeal the Michigan Inheritance Tax and implement the federal Pick-Up Tax. Twenty-nine other states have repealed their estate tax and rely on the federal inheritance tax which exempts estates up to $600,000.

A substitute for S.B. 1 was reported out of the Senate Finance Committee and phases out the inheritance tax beginning Oct. 1, 1994, by exempting the first $100,000. On May 15, 1995, the exemption would increase to $200,000 and finally on Jan. 1, 1996, the state inheritance tax would be eliminated and replaced by the federal pick-up tax.

The bill has passed the Senate and is awaiting action by the House Taxation Committee.

The Legislature has not agreed to restoring funds vetoed by the governor in the current 1991-92 budget. The vetoes included $1.1 million to Soil Conservation Districts and $5 million in horse racing.

To compound the problem, the Legislature and the governor are attempting to deal with an estimated $800 million in revenue shortfall for the current fiscal year which ends Sept. 30. A portion of the $800 million could be restored through a series of increased fees for various activities, including water testing, fruit and vegetable inspection and inspection of food markets. The House has not moved the bills, stating that they are tax increases proposed by the governor and the Senate.

Revenue projections have been more optimistic than realistic in the past year. Fiscal year 1992/93 budgets are being developed, with some adjustment in current specific line items, but in total there are no increases and several department budgets are showing a decrease.

Michigan Farm News

(517) 323-7000
Crop and Planting Update - Wheat Suffers

Iowa
Corn planting was underway in all parts of the state, with 3 percent of the acreage reported the week beginning April 25, according to Knight Ridder News. Corn planting is proceeding at a faster pace than in 1991 and is slightly ahead by 1 percentage point. Oats are reported well ahead of normal with 85 percent of the acreage planted, compared to 71 percent for the same time in 1991. Over 20 percent is reported to have emerged compared to the five-year average of 15 percent.

The state’s winter wheat crop is rated 3 percent excellent, 25 percent good, 42 percent fair, 24 percent poor and 6 percent very poor. Early indications are that 19 percent of the winter wheat crop and 13 percent of the state’s alfalfa acreage will be lost due to winterkill.

Topsoil moisture is rated 2 percent short, 73 percent adequate, 25 percent surplus. Subsoil moisture is rated 88 percent adequate, and 12 percent surplus.

Illinois
Farmers in the southern third of the state have made substantial progress in corn planting, while cool temperatures and intermittent rain slowed activity in northern portions of the state. Corn planting began the week of April 20 was 13 percent complete, up from 8 percent for the same period in 1991. Oat seeding is reported 80 percent done, up from 75 percent in 1991.

Winter wheat was rated 25 percent good, 40 percent fair, 17 percent poor, and 18 percent very poor. Wheat in major producing areas have shown improvement. Alfalfa is rated 38 percent good, 54 percent fair, and 8 percent poor.

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Effect of Warm Winter on Insect Outlook for 1992
Doug Landis, MSU Field Crop Entomologist

The unusually warm winter of 1991-92 has prompted a number of questions regarding how insect abundance will be affected in field crops in 1992. While long-range predictions of insect abundance are, in most cases, impossible, some logical conclusions may be drawn from a knowledge of a specific insect’s biology and life styles.

Researchers recommend scouting for first generation corn borers when the corn plants reach about knee high. The most common symptom of early corn borer feeding is the familiar “shot hole” damage on the leaves.

Corn Rootworm
Adult numbers in 1991 were low in much of the state, however, there could be higher egg survival due to warm temperatures, moderate snow cover and lack of soil drying. Soil type is the dominant influence with light soils less susceptible to corn rootworm injury.

All fields of corn in 1992 that will be corn again in 1993 should be scouted in July and August to predict the need for rootworm control in 1993.

European Corn Borer
Huge populations in 1991 were due to near perfect conditions for the first generation egg laying and over-wintering survival. Look for earlier than normal emergence if warm trend continues.

Alfalfa Weevil
Eggs are typically laid in the spring although survival of eggs deposited in the fall is known as far north as northern Illinois. Be alert for early weevil damage due to over-wintering of eggs (previously undocumented but possible in extreme southern Michigan) or early emergence of spring-laid eggs throughout the state. Parasites have been effective in suppressing populations in 1990 and 1991.

Potato Leafhopper
The severity of infestation is tied to the intensity and timing of spring migration events (typically May and June). A warm winter in the south may have the potential to promote earlier migrations, but conditions in Michigan will determine if populations survive.

Japanese Beetle and Bean Leaf Beetle
The northern portion of the range for both insects extend into southern Michigan and both populations have been on the increase. Look for these insects to be more numerous and to further expand their range northward in 1992 due to favorable over-wintering conditions.

Flea Beetle
Adult survival tends to be better in mild winters. Although this insect is seldom a serious pest of field corn, it does carry Stewart’s wilt disease to seed corn. Seed corn producers in southwest Michigan experienced increased numbers of flea beetles in 1991 and should be on the lookout for potential problems again in 1992. Canola, especially spring planted, and sugar beets are also damaged by flea beetles and plans should be made to watch these fields following seedling emergence.

Reprinted from MSU CES Field Crop Advisory Team Alert, April 1, 1992 issue.
Market Outlook

Dr. Jim Hilker, Dept. of Agricultural Economics, Michigan State University

Corn

The USDA incorporated the lower than expected March 1 corn stocks figure (discussed in the last issue) into their April 10 Corn Supply Demand Report shown in Table 1. Corn usage for 1991-92 was lowered 100 million bushels from the previous month’s estimate.

The bottom line was not bad as the projection for food, seed, and most importantly, industrial uses was increased 45 million bushels. The net change was reflected in the 55 million bushel increase in the projected ending stocks. The 1991-92, 14.6 percent ending stocks to use ratio is still considered fairly tight and leaves room for a significant weather market.

Weekly exports have been running near the expected rate, but are tied closely to credit allocations. This is tied directly to the credit situation in the world market, most specifically the CIS region. While we have seen production shortfalls in some areas of the world, we have seen increases in others which have been nearly offsetting.

A combination of weather and planting progress will be the most significant factors in the market the next few weeks as long as the Russian political situation stays stable.

Table Eggs

Allan Rahn, MSU Ag Econ Dept.

The typically strong pre-Easter egg price rally has not materialized this year. Egg prices (New York, Grade A, large white, in cartons, to retailers) moved up 3-cents per dozen since early March.

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A combination of weather and planting progress will be the most significant factors in the market the next few weeks as long as the Russian political situation stays stable.
EPA Approves Atrazine Use Requirements

The Environmental Protection Agency has approved label changes for the use of atrazine, a widely used herbicide in corn, for the 1993 crop year and will apply to all products containing atrazine.

According to Steve Spain, CIBA-GEIGY's product manager for atrazine, the changes will reduce the total amount of atrazine used and surface water runoff from treated fields.

The revised label will eliminate non-crop total vegetation control uses of atrazine. For agricultural uses, the maximum rate for a single application will be reduced to 1.6 or 2 pounds of atrazine per acre, depending on the amount of soil-holding crop residue in the field. Presently atrazine can be applied in amounts of up to three pounds per acre.

The new label also creates buffer areas between atrazine application sites and surface water. Atrazine applications will not be permitted within 66 feet of the points where field surface water runoff can enter streams and rivers, or within 200 feet of lakes or reservoirs.

First Annual Meeting of FCS of Michigan's Heartland Successful

Nearly 900 stockholders and guests attended the first annual stockholder's meeting series for Farm Credit Services (FCS) of Michigan's Heartland held in early April in Midland, Alpena, Traverse City, and Lansing. According to CEO James Bremer of FCS of Michigan's Heartland, four meetings were held to bring the information as close to members as possible.

Members approved the downsizing of the organization's board due to the recent merger, according to Bremer. "The individuals who were serving on the board were good people, and it was a difficult task for the membership to select new board members," he said.

New directors for Production Credit Association (PCA) include:
- Robert Weaver, Leelanau County
- Charles Wilcox, Shiawassee County
- Brent Wilson, Gratiot County
- Don Harfield, Mecosta County
- Glen Williams, Shiawassee County
- John Kinne, Ingham County

Newly elected to the Federal Land Credit Association (FCLA) were:
- Gerald Lehman, Ogemaw County
- Tom Murphy, Isabella County
- Greg Wilson, Gratiot County
- Charles Wilcox, Ingham County

At the first board meeting of the new directors, Gerald Cole (below) was elected executive board chairperson, Gerald Lehman was elected FCLA board chairperson, and Robert Weaver was elected PCA board chairperson.
Educate Tractor Operators In Safety Techniques

In Michigan, about half of agriculture-related deaths each year are the result of tractor upsets. It is estimated that the use of rollover protective structures (ROPS) on all tractors would reduce the number of those deaths by a third—but safety experts also say that the equipping of all tractors in Michigan with ROPS is not a practical expectation.

One thing farmers can do is to educate every user of tractors—whether those tractors are ROPS-equipped or not—about techniques that reduce the potential for accidents.

You should make sure all the operators know how your tractor works. Teach them how to drive it and operate its equipment. Have them read the operator’s manual. Show them the hazards on your place and what to do to avoid trouble. Supervise them until you’re sure they can operate the tractor safely.

Here are safety instructions for you to pass along to anyone who operates your tractor:

- Securely fasten your safety belt if the tractor has ROPS.
- If possible, avoid operating the tractor near ditches, embankments, and holes.
- Reduce speed when turning, crossing slopes and on rough, slick, or muddy surfaces.
- Stay off slopes too steep for safe operation.
- Watch where you are going, especially at row ends, on roads, and around trees.
- Do not permit others to ride.
- Operate the tractor smoothly. No jerky turns, starts, or stops.
- Hitch only to the drawbar and hitch points recommended by tractor manufacturers.
- When the tractor is stopped, set the brakes securely and use park lock if available.

Remember, too, that youthful hired laborers under age 16 are not allowed to operate a tractor of 20 PTO horsepower or more. Exceptions can be made for youths ages 14 and 15, however, if they have completed either the 4-H or the Agricultural Science tractor operation program, have been instructed by their employer in the safe and proper operation of the equipment, and are properly supervised.

Pesticide Application—Last Minute Reminders—

- Well Locations
  - Never clean spray equipment near wells.
  - Never calibrate sprayers near wells.

- Equipment Preparation
  - Properly calibrate and maintain equipment.
  - Check solution tanks for leaks.
  - Mix only enough product for the job at hand.
  - Avoid overfilling spray tank, including “foam over.”
  - Keep hose out of chemical solution.
  - Triple rinse containers and add rinse to spray tank.

- Application Area
  - Avoid spraying near surface water, sinkholes or dry wells.
  - Maintain grass waterways and buffer strips to retard surface runoff.

- Equipment Clean-Up
  - Avoid rinsing at the same site repeatedly, unless water containment facilities are used.
  - Use dedicated equipment where possible to reduce the number of rinsings.
This method can be used on any alfalfa stands after the seeding year, Undersander says. If herbicide costs can be reduced or yields increased, cultivation becomes a wise choice. Reduced herbicide use also helps reduce potential for groundwater contamination. But row cultivation takes time and residue management can be a problem in conservation tilled fields.

Demonstration plots for six weed control systems in corn and soybeans will be established in early May and include:
1. No herbicide, no cultivation.
2. Broadcast herbicide, no cultivation.
3. Broadcast herbicide, one cultivation.
4. Band herbicide, one cultivation.
5. Band herbicide, two cultivations.
6. No herbicide, two cultivations.

No-till and ridge till cultivation equipment will be demonstrated on ridges in corn residue; moderate residue cultivators will run in chisel plowed corn ground; and low residue equipment will be operating in conventionally tilled soil.

Automatic guidance systems will also be demonstrated with emphasis on equipment design, sweep, shovel and point selection for a wide range of cultivation requirements.

Counting Stems is Best Way to Predict Alfalfa Yields

Counting stems is the best way to determine potential yields in your alfalfa stands, say two University of Wisconsin agronomists. If you don't count at least 40 per square foot, you probably should plow it down.

Each spring, many farmers go through the routine of checking their greening alfalfa stands to decide whether or not to plow them down.

In the past, it has been difficult to figure out when to plow down stands because of potentially poor yields. Now agronomists Dan Undersander, UW-Madison, and Dennis Cosgrove, UW-River Falls, have discovered that counting the stems rather than plants can better estimate how well alfalfa stands will produce.

Previously, researchers believed that stand density (number of plants per square foot) was the best indicator of yield. Farmers were encouraged to replant if the stands had less than a recommended stand density, which varied with age of the stand. But many farmers were getting good yields even with thin stands, says Undersander.

"We found that we could get good yields with much fewer plants than we figured, without regard to age of stand," he says.

In their study, Undersander and Cosgrove discovered that farmers could get six tons of alfalfa per acre with as few as seven plants per square foot, regardless of stand age after the sowing year. The key is not the number of plants but the number of stems, says Undersander.

By counting stems, farmers can determine how many tons they can potentially harvest per acre. Undersander says farmers who count 40 stems per square foot potentially could harvest four tons of alfalfa per acre. Fifty-five stems per square foot can yield up to six tons to the acre. Low soil fertility, lack of water, or insect or disease attacks can reduce yields, Undersander notes.

"What this will do that we haven't been able to do before is to make plow down decisions based on yield expectations," Undersander says. "If they're not counting at least 40 stems, it might be a field they should consider plowing down."

This method can be used on any alfalfa stand after the seeding year, Undersander notes. The best time to count stems is when stems are three to eight inches high.

Row Crop Cultivation Focus of 1992 Ag Expo's Field Demonstrations

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WE HELP MICHIGAN KIDS PAINT BRIGHTER FUTURES

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MAKING YOUR FUTURE MORE PREDICTABLE

Row Crop Cultivation Focus of 1992 Ag Expo's Field Demonstrations
Tillage operations bury some crop residues to various degrees. Just how much residue is buried depends primarily on the type of machine used, how it’s used, and the type of residue it’s used on.

The chart at right has been developed from research data. For each machine listed, the numbers to the right are the ranges of crop residue that you could expect to leave after one pass with that piece of equipment. The actual residue level can vary, however.

Pieces of machinery listed are those commonly used in corn and soybean tillage operations. It’s best to set equipment to work shallower, drive slower, and use tillage points that fracture the soil rather than turn or throw it.

Use the chart to compare tillage implements for their ability to leave residue on the soil surface and to get a rough estimate of the percent of residue you can expect to leave after planting from a specific tillage system. Multiply each of the machinery operations’ numbers together, and choose from within the range listed.

Begin calculations with the residue remaining after harvest and use the overwintering weather factor. As a general rule of thumb use the higher number listed for the weather factor.

Example Calculation
Here’s an example of how to calculate ground cover after planting:

\[0.95(\text{% cover after harvest}) \times 0.90(\text{overwintering weather factor}) \times 0.60(\text{field cultivator with sweeps}) \times 0.90(\text{planting}) = 0.37 \times 100 = 37\% \text{ ground cover after planting}.\]

Repeat the procedure at least three times in different areas of the field and average the findings. Avoid measuring areas such as end rows, or point rows.

Measure residue before and after any field operation to find out how much residue is buried with a single pass of that piece of equipment.

For purposes of crop residue values for soil conservation systems, the residue cover is measured after planting.

Look down, not out across the field, for an accurate estimate of ground cover. Percent ground cover is dependent on both the amount of crop residues and its distribution. Residues spread evenly across the rows produce the highest percentages of ground cover.

How to Measure Crop Residue

Use any line that is equally divided into 100 parts. Fifty foot cable transect lines are available for this purpose. A 50-foot nylon rope with 100 knots or marks six inches apart or a 50-foot tape measure using the 6-inch and foot marks also works well.

Stretch the line diagonally across the crop rows. Walk back along the line looking for residue underneath the marks. Count the number of marks (tabs or knots) that have residue under the leading edge when sighted from directly above the mark. It is important to use the same point on each mark for accuracy. Don’t count residue smaller than 1/8 inch in diameter.

Walk the entire length of the rope or wire. The total number of marks with residue under them is the percent cover for the field. If your rope or tape has only 50 marks, multiply by 2; for 25 marks, multiply by 4.

### Estimates of Residue Cover After Machinery Operations

<table>
<thead>
<tr>
<th>Machine or operation</th>
<th>Percent Residue Left</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corn/Small Grain</td>
</tr>
<tr>
<td>Over winter weathering</td>
<td>80-95</td>
</tr>
<tr>
<td>Moldboard plow</td>
<td>0-10</td>
</tr>
<tr>
<td>Paraplow/Paratill</td>
<td>80-90</td>
</tr>
<tr>
<td>V ripper/subsoiler</td>
<td>70-90</td>
</tr>
<tr>
<td>Chisel plows with:</td>
<td></td>
</tr>
<tr>
<td>Sweeps</td>
<td>65-85</td>
</tr>
<tr>
<td>Straight chisel points</td>
<td>55-60</td>
</tr>
<tr>
<td>Twisted points</td>
<td>40-60</td>
</tr>
<tr>
<td>Coulter chisel plows</td>
<td></td>
</tr>
<tr>
<td>Sweeps</td>
<td>60-80</td>
</tr>
<tr>
<td>Straight chisel points</td>
<td>50-70</td>
</tr>
<tr>
<td>Twisted points</td>
<td>35-55</td>
</tr>
<tr>
<td>Disk chisel plows:</td>
<td></td>
</tr>
<tr>
<td>Sweeps</td>
<td>55-75</td>
</tr>
<tr>
<td>Straight chisel points</td>
<td>45-65</td>
</tr>
<tr>
<td>Twisted points</td>
<td>30-50</td>
</tr>
<tr>
<td>Diskies</td>
<td></td>
</tr>
<tr>
<td>Offset light duty</td>
<td>45-55</td>
</tr>
<tr>
<td>Offset heavy duty</td>
<td>35-45</td>
</tr>
<tr>
<td>Tandem disk (as a secondary operation)</td>
<td>40-60</td>
</tr>
<tr>
<td>Tandem disk after harvest, before other tillage</td>
<td>80-90</td>
</tr>
<tr>
<td>Field cultivators as primary tillage operation:</td>
<td></td>
</tr>
<tr>
<td>Duckfoot points</td>
<td></td>
</tr>
<tr>
<td>Sweeps or shovels 6-12&quot;</td>
<td></td>
</tr>
<tr>
<td>Sweeps 12-20&quot;</td>
<td>80-90</td>
</tr>
<tr>
<td>Field cultivators as secondary operation:</td>
<td></td>
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<tr>
<td>Duckfoot points</td>
<td>60-80</td>
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<td>Sweeps or shovels 6-12&quot;</td>
<td></td>
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<tr>
<td>Sweeps 12-20&quot;</td>
<td>75-85</td>
</tr>
<tr>
<td>Finishing tools:</td>
<td></td>
</tr>
<tr>
<td>Soil finisher</td>
<td>45-65</td>
</tr>
<tr>
<td>Seedbed conditioner</td>
<td>75-95</td>
</tr>
<tr>
<td>Cult-mulch</td>
<td>70-90</td>
</tr>
<tr>
<td>Harrows</td>
<td>70-90</td>
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<tr>
<td>Drills:</td>
<td></td>
</tr>
<tr>
<td>Hoe openers</td>
<td>50-80</td>
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<tr>
<td>Disk openers</td>
<td>80-90</td>
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<tr>
<td>No-till coulters</td>
<td>75-85</td>
</tr>
<tr>
<td>Cross slot openers</td>
<td>90-95</td>
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<tr>
<td>Planters:</td>
<td></td>
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<tr>
<td>Runner planters</td>
<td>85-95</td>
</tr>
<tr>
<td>Double disk opener planters</td>
<td>80-90</td>
</tr>
<tr>
<td>Sweeps or double row cleaning disks</td>
<td>60-80</td>
</tr>
<tr>
<td>Ridge-till planter</td>
<td>60-70</td>
</tr>
<tr>
<td>No-till planters with:</td>
<td></td>
</tr>
<tr>
<td>Offset double disk openers</td>
<td>90-95</td>
</tr>
<tr>
<td>Smooth coulter</td>
<td>80-90</td>
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<tr>
<td>Ripple coulter</td>
<td>85-90</td>
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<tr>
<td>Fluted coulter</td>
<td>80-85</td>
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<tr>
<td>2 or 3 fluted coulters</td>
<td>75-85</td>
</tr>
<tr>
<td>Anhydrous applicator</td>
<td>75-85</td>
</tr>
<tr>
<td>Knife-type fertilizer applicator</td>
<td>60-80</td>
</tr>
<tr>
<td>After Harvest*</td>
<td>75-95</td>
</tr>
</tbody>
</table>

* Begin calculations with residue remaining after harvest.
A Dozen Ways to Leave More Residue

1. Follow a crop rotation sequence with high residue producing crops. Soybeans don't provide the same kind of protection as corn, for example. Also, high yields give more residues.

2. Wait until spring for tillage operations. This is most important on low residue producing crops such as soybeans. Fall tillage on low residue ground is very prone to wind erosion in late winter and early spring.

3. Reduce the number of tillage passes. In most cases, this is as important as the type of tillage performed.

4. Plant rye or wheat as a winter cover crop. This is a good option when you are growing low-residue crops such as soybeans or corn silage.

5. Set chisels and disks to work shallower. Tilling deeper buries more residue.

6. STOP using the moldboard plow.

7. Drive slower on tillage operations. Driving faster throws more soil and covers more residue.

8. Use straight points and sweeps on chisel plows. Twisted points may bury 20 percent more residue.

9. No-till drill soybeans instead of planting them in a prepared seedbed. No-till drilling keeps more residue on the soil surface, and reduces soil water losses and volatility.

10. Convert to a no-till system. No-till disturbs residue only in the row.

11. A straight alignment of disk blades buries less residue.

12. Strive for even distribution of residue from the combine at harvest. Also, leave residue size as large as possible. Smaller particles such as chopped soybean residue will decompose more quickly than larger particles and will be buried more easily.

Conservation Reserve Program (CRP) Can Improve Your Profits

"Why waste energy trying to make a profit on unproductive cropland?" questioned Homer R. Hilner, state conservationist for USDA's Conservation Reserve Program in recent years. USDA's Conservation Reserve Program (CRP) gives farmers the option of concentrating on the most productive farmland. The June 15-26, 1992 sign-up period is the next opportunity farmers will have to apply for enrollment in the program.

Although many land used to grow crops two or more years during the 1986-1990 period is eligible for enrollment, farmers can offer only their least productive fields and unproductive cropland adjacent to drainage ditches and streams for enrollment in the program. Soil compaction and fertility are usually problems on severely eroded land and land that was covered with sod before when drainage ditches were dug.

Focusing on land that does not require extra fuel, extra fertilizer and extra work for yields that are usually lower than in the rest of the field is more efficient and profitable. Vegetative cover on cropland adjacent to drainage ditches helps protect water quality and is one of the most visible things farmers can do to protect water quality. These filter strips need to be at least four rods (66 feet), but not more than six rods (99 feet) wide to meet programs requirements.

Renters also benefit when landowners enroll unproductive land along ditches in the program because they no longer have to rent the unproductive land.

Everyone benefits because of reduced water pollution and all forms of wildlife in what form?

1. Have concerns surfaced in your community about animal care, research animals or the raising of livestock? If so, in what form?

2. What kinds of techniques and motivations have you observed animals using to draw attention to themselves?

3. Why is it important for all facets of agriculture to become involved in communicating positive messages about the animal industry?

4. What kinds of opportunities are there for your CAG or county Farm Bureau to counteract the negative messages about animal rights activists?
Calibrating Granular Insecticide Application Units

When was the last time you calibrated your soil insecticide application units and what product did you use? If the answer is anything other than, "I did this year using the product I intend to apply in 1992," you had better plan on spending a little time with your planter in the near future.

Proper calibration of granular applicators is critical for effective and economical use of soil insecticides. A spot check of several producers and applicators over the last several years has shown that while some are right on, others have been under or over applying by as much as 50 percent. Commonly asked questions regarding calibration are as follows:

Q. "Can't I just use the settings recommended on the insecticide bag?"

A. Most manufacturers who provide such guidelines caution growers that while they are a good starting point, they should not be used as the sole calibration method. Varying age or state of repair of equipment as well as moisture conditions may affect these settings significantly.

Q. "I usually just calibrate one unit, then set all the others to the same adjustment. Any problems with this?"

A. If all your units were perfectly identical, this should work. However, in the real world, this is seldom the case. As an example, MSU field crops entomology researchers recently purchased about two dozen new units for use in their screening trails. In calibrating them they found that to deliver the same amount of product, the settings varied by as much as four adjustment units on the applicators scale. If they had chosen a single setting for all units, some would have been off by up to 20 percent.

Q. "I've switched products from last year, but it is still a 15 percent G. Will the same settings work again?"

A. Unfortunately not! Most applicators on the market use a varying opening (orifice) size to regulate the amount of product delivered. The density, relative size and moisture content and makeup of the carrier (usually sand or clay) determine how fast the product will flow through a given opening. Since carriers vary from product to product, you cannot use your calibration in this situation. In addition, since a company may change its carrier from year to year, one should re-calibrate every year even if using the same product.

Suggestions For Calibrating

Check the overall condition of your equipment and replace worn or damaged parts. When working with the insecticide units, remember that they probably contain residue from last year. Wear protective equipment including gloves and eye protection.

Products can be calibrated by either a weight or volume method. The volume method is somewhat easier but requires that pre-calibrated tubes be available for each product to be calibrated. These may often be obtained from your agri-chemical supply dealer.

If using the tubes, be sure to follow the manufacturer's recommendations exactly. In general, you attach the collection tubes to the dispensing units and drive the planter normal planting speed over a fixed distance (usually between 250 and 1,000 feet). At the end of the course, you compare the volume of output to the scale on the side of the tube. The tubes have been pre-calibrated so that each mark corresponds to a given number of ounces. Adjust the units up or down until all give the desired output. If tubes are not available, then the output from each unit must be weighed on a postal scale or other instrument capable of weighing in ounces or grams. Procedure to follow:

1. Measure and mark off a course 250 feet long. It is best to make calibration runs in a worked field, versus on a road, to account for normal wheel slippage.
2. Disconnect all the drop tubes and collect granules in plastic bags attached to each applicator unit. It helps to number the bags and units to keep them correctly identified.
3. Drive over the course at planting speed. Rather than starting from a dead stop, bring the tractor to planting speed and lower the planter at the mark.
4. Weigh the material collected. Record and compare with the following table.
5. Adjust units to deliver more or less material as necessary to test until all units consistently provide the desired output.

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