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**Introduction**

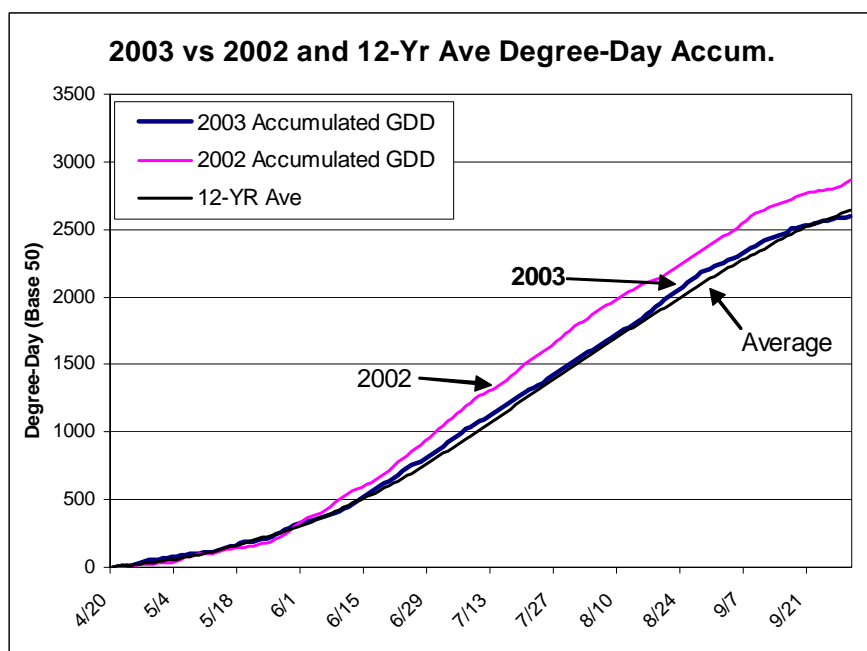
Continued favorable weather has allowed soybean harvest to advance quickly and has allowed area farmers to get a good start on corn harvest. Preliminary data from the soybean aphid survey shows a definite advantage for controlling the soybean aphid; please take a moment to fill out the survey if you haven't already done so. The 2003 degree-day accumulation came up just shy of the 12-year average but was considerably less than the previous two years. As soil tillage operations begin, remember that residue left on the soil surface is vitally important to protect your most important natural resource; the soil.

**Row-Crop and Forage Information**

Soybean Aphid Survey If you haven't yet taken the soybean aphid "treated vs. non-treated" survey, please take a moment to do so. You can find the "Treated vs. Non-Treated" on-line and printable form at these URL's:  
[http://www.extension.iastate.edu/carroll/crops/aphid\\_treatment\\_form.htm](http://www.extension.iastate.edu/carroll/crops/aphid_treatment_form.htm) (on-line form)  
<http://www.extension.iastate.edu/carroll/crops/Soybean%20Aphid%20Insecticide%20Treatment%20Survey.pdf> (For Printing)

The limited amount of data that has been submitted shows a 9.1 bu/A advantage for using an insecticide to remove the aphids from the soybean field. The range is from 0 to 18 bu/A. All of the data points in so far only include ground application of insecticide. We are also very interested in aerial applications, so if you have this type of data, please submit it. Data received so far can be found at this URL:  
<http://www.extension.iastate.edu/carroll/crops/soybean-aphid.htm>.

Year-End Degree-day Totals The 2003 growing season (April 20 – September 30) ended up just short of the 12-year growing degree-day (base 50) average with a season end total of 2,596 degree-days compared to the 12-year average 2,640. This year's total was much less than the last two previous years with 91% and 92% of 2002 and 2001 degree-day accumulations respectively. Late June and late August were the only two periods where degree-day accumulations were above normal.



**Degree-Day Comparisons**

Year	Degree-day	% of Ave.
2003	2596	98%
2002	2860	108%
2001	2813	107%
12-yr Ave	2640	

## Soil and Soil Fertility

### Manage Crop Residue to Protect Your Soil

**Resource** As tillage plans are made for this fall, keep in mind the important role that crop residues play in the overall conservation plan. The amount of soil lost to erosion each year is directly proportional to the amount of crop residue remaining on the surface. You may already have made substantial changes in your farming operation to reduce erosion, but at the heart of your conservation plan should be some provision for conservation tillage. Conservation tillage is defined as tillage that leaves at least 30 percent of the field surface covered with crop residue after planting.

All crop residues (stalks, straw, chaff, and even the finest materials) stop rain splash, slow and trap runoff, and allow water infiltration. Plant residue also improves soil organic matter, which enhances soil physical and chemical properties such as soil tilth, aggregate stability, and cation exchange capacity. Plan your tillage management systems to provide crop residue coverage, such as Mulch-tillage, No-till or Strip-tillage.

<b>Estimate residue following tillage operations</b>		
Multiply each operation by the existing percentage of residue left to find how much ground cover will be left after each tillage operation.		
<b>Operation</b>	<b>Corn</b>	<b>Soybeans</b>
After harvest	0.90-0.95	0.80-0.90
Over winter decomposition	0.80-0.90	0.70-0.80
Plow	0.02-0.07	0.00-0.02
Chisel (twisted shank)	0.40-0.50	0.10-0.20
Disk (off-set, deep)	0.25-0.40	0.10-0.20
Paraplow	0.65-0.75	0.35-0.45
Chisel (straight shank)	0.50-0.60	0.30-0.40
Disk (tandem, shallow)	0.65-0.75	0.25-0.35
Anhydrous applicator	0.75-0.85	0.45-0.55
Field cultivator	0.80-0.90	0.55-0.65
Plant	0.80-0.90	0.80-0.90
Till-Plant	0.55-0.65	0.55-0.65
Source: Conservation Catalogue. USDA Soil Conservation Service, Des Moines, Iowa, October 1991.		

Soil erosion leaves others dealing with the problems of unwanted sediments, negatively effects aquatic habitat, and contributes to water pollution and excess nutrient runoff. It is also carelessly washing away your most important and irreplaceable resources. Using crop residue is a simple, powerful strategy for saving that resource.

### Top 10 Ways to Leave More Residue

1. Follow a crop rotation sequence with high-residue-producing crops (e.g., soybeans do not provide the same protection as corn)
2. Wait until spring for tillage operations
3. Reduce the number of tillage passes
4. Plant rye or wheat as a winter cover crop, especially when growing low-residue crops, such as soybeans
5. Set chisels and disks to work shallower
6. Stop using the moldboard plow
7. Drive slower on tillage operations; driving faster throws more soil and covers residue
8. Use straight shanks and sweeps on chisel plows; twisted shanks may bury 20 percent more residue
9. No-till drill soybeans instead of planting them conventionally; no-till drilling keeps more residue on the soil surface and generally produces a quicker canopy
10. Convert to a no-till system

Source: [Use crop residues for soil conservation](#) ICM Newsletter 5/3/1999. Michael J. Tidman and Gerald Miller. And [Plan for 2002 residue before harvest](#), ICM Newsletter 9/17/2001. Mahdi Al-Kaisi, Assistant Professor, Department of Agronomy, and Mark Hanna, Extension Agricultural Engineer, Department of Agriculture and Biosystems Engineering and Michael Tidman

## Meetings and Dates for your Calendar

**CROP ADVANTAGE** (Carroll) date has been set for Wednesday, January 14, 2003. CROP ADVANTAGE, a regional crop clinic, will be in Carroll at the Carrollton Inn. Key note speakers will be Elwynn Taylor and Palle Pedersen (new soybean specialist). Other speakers will discuss organic crop production, weed and insect management, foliar fertilizer, and pollen drift issues.

Crop Update Newsletter Prepared By:  
Todd Vagts, ISU Extension Crops Specialist  
Serving northwest Iowa

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University Extension

For further information pertaining to this newsletter; please contact me or any of the county extension offices. This newsletter can also be accessed on-line at [http://extension.iastate.edu/carroll/crops/newsletter\\_2003.htm](http://extension.iastate.edu/carroll/crops/newsletter_2003.htm). If you would like this letter to be emailed directly to you, please send an email with the desired email address to [vagts@iastate.edu](mailto:vagts@iastate.edu).

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Todd Vagts  
Iowa State University Extension  
Field Specialist, Crops

1240 D. Heires Avenue                      Office: 712-792-2364  
Carroll, IA 51401                              Cell: 712-249-6025  
Email: [vagts@iastate.edu](mailto:vagts@iastate.edu)                      Fax: 712-792-2366  
Web Page: <http://extension.iastate.edu/carroll/crops/homepage.html>

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