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### Introduction

Soybean harvest has progressed rapidly across the state, and should be near completion in west-central IA by the end of the week. Harvest of corn is beginning to pick up. I've been in quite a few corn fields recently, and stalk quality is only getting worse. All fields I've been in have some degree of stalk rot, so be sure to ID the worst fields and get those harvested first. Every wonder why you can see green wheel tracks in soybean fields with iron chlorosis, well MN had the same question and provide some answers in the link provided below. When corn grain is dried, it loses weight due to water loss. Use the information provided to help calculate the weight loss or shrinkage during the drying process. As fields are harvested, nutrient and soil management will be the next big endeavors. Use the links provided near the end of this newsletter to get all the information you need to make the best recommendations.

### Crop Management

ISU Yield trial data is being made available much quicker and easier this year. You can find preliminary results online at this web address: <http://extension.agron.iastate.edu/varietytesting/index.aspx>. Keep checking back as new data will become available as trials are harvested.

Green wheel tracks Every wonder why in some years you can see wheel tracks showing up as green streaks in soybean fields, particularly in areas with iron deficiency. The University of MN also wondered why and over the last year has implemented some research to try to explain why this happens. The data from this year may provide some answers, such as soil compaction at deeper soil levels, NO<sub>3</sub>-N and carbon dioxide levels in the soil. Full details of the study can be found here: <http://www.extension.umn.edu/cropenews/2005/05MNCN46.htm>

Calculating Shrink Weight loss due to drying is referred to as "shrink". Shrink is comprised of weight loss due to removal of water and miscellaneous handling losses. Shrink factors used by grain handlers typically account for both water shrink and handling loss. Weight loss due to water shrink is by far the largest weight loss factor. There are several mathematical equations and methods to determine "water" shrink, but to simplify the process, the water shrink factors have already been calculated and are presented in table 2. The "water" shrink factor to use depends on the desired final moisture content of the grain. A good estimate of handling loss is 0.5%, which is added to the water shrink to obtain "total shrink".

Final grain moisture content	Water shrink factor
--%--	--% shrink per point--
15.5	1.183
15.0	1.176
14.0	1.163
13.0	1.149
12.0	1.136

Water Shrink = (percentage points removed) \* (water shrink factor)

Total Shrink = (Water Shrink + 0.5%)

*Example:* You plan to dry shelled corn from 25% to 15.5% moisture (a removal of 9.5 percentage points), the water shrink would be [9.5 \* 1.183 (from table 1)], or 11.24% of the original grain weight. Total shrink would be [11.24% + 0.5% (handling loss)], or 11.74%. So if we started out with 1000 lbs of 25% moisture corn, we would end up with 882.6 lbs of grain dried to 15.5% moisture; [1000 lbs \* 0.1174 (total shrink loss) = 117.4 lbs of lost weight; then 1000 lbs – 117.4 lbs (lost weight) = 882.6 lbs of dry grain]

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Source: Calculating grain weight shrinkage in corn due to mechanical drying, D.R. Hicks and H.A. Cloud, Univ. of MN. NCH 61.  
<http://www.extension.iastate.edu/Publications/NCH61.pdf>

Data Collection I am looking for comparisons between treated and non-treated areas of fungicide and/or insecticide treatments applied to soybeans to control either (or both) soybean foliar disease or soybean aphids. If you would like to share your results, please fill out one or both of the following forms.

Please find the “Treated vs. Non-Treated” printable PDF form at these URL’s:

Soy aphid insecticide treatment form: <http://www.extension.iastate.edu/nwcrops/Soybean-Aphid-Insecticide-Treatment-Survey-2005.pdf>

Soybean disease fungicide treatment form: <http://www.extension.iastate.edu/nwcrops/Soybean-fungicide-Treatment-Survey-2005.pdf>

## **Pest Management**

Glyphosate resistance Concerned about glyphosate resistance in your fields? Dr. Bob Hartlzer summarizes new research on managing resistance development in an article titled “*Glyphosate Resistance Management – Is it Worth the Effort?*” found at this web address: <http://www.weeds.iastate.edu/mgmt/2005/glyphosate.shtml>

## **Soil and Fertility Management**

As we enter the period of soil fertility and soil management, this would probably be a good time to browse though much of the excellent information ISU Extension has available on these subjects. Topics related to soil management can be found at this web address: <http://extension.agron.iastate.edu/soilmgmt/Default.htm> and topics related to soil fertility can be found at this web address: <http://extension.agron.iastate.edu/soilfertility/>

Manure Management Information pertaining to all aspects of manure and manure nutrient management can be found at the IMMAG web site found at this web address: <http://extension.agron.iastate.edu/immag/>

Nutrient and Manure application software Go to this web address if you are looking for software to help with calculating commercial and manure nutrient applications <http://www.agry.purdue.edu/mmp/>

Soil Sampling Dry Soils When collecting samples this fall for soil testing, watch the soil sampling depth. It can be difficult to sample to the recommended 6-inch depth when soils are dry and hard. If you can't sample to the correct depth, don't take the samples. Shallow sampling will result in incorrect results and recommendations. If low rainfall persists after harvest, less K may be leached from remaining crop residues. This could impact soil test K results. (Dr. John Sawyer, ISU Extension Soil Fertility Specialist in “Drought impacts on soil fertility management” (<http://www.ipm.iastate.edu/ipm/icm/2003/10-6-2003/droughtsoilimpact.html>))

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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\\_2004.htm](http://extension.iastate.edu/carroll/crops/newsletter_2004.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).

This newsletter is available via fax (in selected counties) or e-mail and can always be found on the web at [http://www.extension.iastate.edu/nwcrops/newsletter\\_2005.htm](http://www.extension.iastate.edu/nwcrops/newsletter_2005.htm) If you would like to receive this newsletter in a format (different than what you currently receive), please let me know by phone (712-792-2364) or email ([vagts@iastate.edu](mailto:vagts@iastate.edu)).

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