

FIELD & FEEDLOT



NORTHWEST AREA EXTENSION

MAY 2008 ISSUE

Resources for Crop Producers and Agronomists

By Mark Licht, ISU Extension Field Agronomist

At the time of this writing, there has been nearly no spring field-work done and definitely no corn or soybean planting yet. My hope is that by the time you read this you will have at least gotten the corn planted. At any rate, it is that time of year to remind you all of some handy resources that have been around and a couple of new resources to provide you with some help as you go through the growing season.

First, Crop Newsletters

Nearly all ISU Extension field agronomists put out a crop newsletter throughout the growing season. Joel, Paul and I all have a newsletter that goes out via email. If you would like to get on any or all three please send us an email: Joel (western NW Iowa) at jldejong@iastate.edu; Paul (eastern NW Iowa) at kassel@iastate.edu; or Mark (southern NW Iowa) at lichtma@iastate.edu.

Second, Resource Websites

- ◆ From campus comes the ISU Agronomy Extension webpage (www.agronext.iastate.edu). This webpage has a subpage for corn, soybeans, fertility, soil management, water quality, weather and more. Many of the subject matter subpages have links to supporting publications. It also has a News and Updates window that contains some articles and news releases pertaining to crop production.
- ◆ The second webpage I want to mention is **NEW**. It is Integrated Crop Management News (www.extension.iastate.edu/CropNews). The Integrated Crop Management News is replacing the ICM newsletter of old. Articles will be posted as generated to facilitate quick dissemination. You can sign up for a free weekly or daily email alert that notifies you when new articles are posted.
- ◆ The third webpage is a joint venture with ISU and Iowa Farmer Today. It is the Crop Watch blog where agronomists from industry and ISU post what we see and hear along with some helpful tips to go with our observations. This blog is in its second year and can be found at www.iowafarmertoday.com/blog.

Third, Publications at Hand

- ◆ Many of ISU Extension publications can be found at the Extension Online Store (www.extension.iastate.edu/store/). However, there are some that are not at the Extension Store website.
- ◆ A **NEW** publication for soybean production is the *Soybean Disease and Pest Management Field Guide*. This is a great resource and can be found at the Extension Online Store or at a county Extension office. This resource is full color, pocket sized, rigid and waterproof. It's a must have.
- ◆ Another **NEW** publication is a set of soybean management factsheets. These are available at a county Extension office or as a pdf at http://extension.agron.iastate.edu/soybean/extension_pubs.html. The six publications cover variety selection, soybean planting date, row spacing in soybean, optimum plant population in Iowa, managing soybean cyst nematodes, and managing soybean for high yield.

Reducing Hay Loss & Cost!

By Beth Ellen Doran, ISU Extension Beef Field Specialist

The latest planting intentions indicate that the acres for pasture and hay production are declining. Livestock producers can probably anticipate another year of high pasture and hay prices. Because of this, it will be critical to reduce hay losses after harvest and when feeding.

Hay dry matter losses depend on several factors - the number of years it is stored, the moisture level of the hay and where the hay is stored. In Nebraska studies, hay stored outside for a year had an 11.7% loss in dry matter. The losses in year 2 were doubled (23.1%) and in year 3 were tripled (32.6%). To avoid really excessive storage losses, use outside stored hay in the first year following harvest. In an Iowa study, hay stored outside (for 39 weeks) with moisture levels of 15.6% had a 4.2% loss in dry matter; whereas, hay stored outside with moisture levels of 19% had four times greater loss in dry matter (16.8%).

If unmanaged, outside stored hay can lose as much as 1/3 of its dry matter (Table 1). If you can keep outside stored hay off the ground and under some kind of cover, storage losses are not much greater than with inside storage. During weathering, hay surprisingly holds its protein content, but loses both dry matter and digestibility.

Table 1. Round Bale – Hay Storage Losses

Storage Conditions	Approximate Dry Matter Losses, %
Outside, on ground, without cover	13-30+
Outside, on ground, plastic or tarp cover	8-9
Outside, on drained surface, without cover	7-8
Outside, on ground, net wrapped	6-7
Outside, on ground, full plastic 'sleeve'	5-6
Outside, drained surface, plastic or tarp cover	5-6
Inside bale storage	5

Michigan State University researchers compared four types of round bale hay select feeders - cone, ring, trailer and cradle. A total of 160 non-lactating pregnant beef cows were assigned to the four feeder types. Each type provided approximately 17 inches of linear feeder space per cow. Hay that fell onto a concrete surface surrounding the feeder was considered waste, and was collected and weighed daily. The results are summarized in Table 2.

Table 2. Hay Feeder Wastage

Item	Hay Feeder Type			
	Cone	Ring	Trailer	Cradle
Daily hay disappearance, lb/cow	26.4 ^b	26.8 ^b	30.6 ^c	28.4 ^{b,c}
Daily hay waste, lb/cow	0.9 ^b	1.6 ^c	3.5 ^d	4.2 ^d
Hay waste, %	3.5 ^b	6.1 ^b	11.4 ^c	14.6 ^c
Net hay intakes, lb/cow ^a	25.4	25.1	27.1	24.3

^a Hay disappearance minus hay waste

^{b,c,d} Within a row, means without a common superscript differ significantly (P<.05)

There were significant differences among hay feeders in hay wastage, ranging from 3.5 to 14.6%. If you assume a hay price of \$100/ton, this range in wastage translates into a saving of almost \$20/cow/season (120 days). With 20 cows accessing a feeder, the savings/feeder/season would be \$400.

And last, but not least, the Iowa Beef Center has a new edition of the professional version of BRANDS (Beef Ration and Nutritional Decisions Software).

Whether you use the professional or the standard version of BRANDS, the results can be the same. In a time of high feed costs, it's critical to formulate rations that meet the needs of the animals. To control costs, this will mean formulating rations for different ages of animals and different stages of production. BRANDS can help you do this. For more information about BRANDS, go the Iowa Beef Center website at <http://www.iowabeefcenter.org> and select IBC Software on the left menu.

Uneven Corn Heights

By Joel DeJong, ISU Extension Field Agronomist

We have all seen cornfields that look uneven in growth. Many times this is due to emergence at different times. As you would suspect, fields that emerge and grow at the same pace likely will yield better than fields where growth is uneven because of differing plant to plant competition levels. So, we really try to establish plants as uniformly as possible.

How much yield do we lose if we have an uneven stand? Several universities in the upper Midwest have tried to look at that issue over the years. ISU Extension Corn Specialists Roger Elmore and Lori Abendroth have tried to summarize that data and have created a worksheet to help calculate what the yield loss is from these uneven stands. If you are looking at these problems, get a copy from their internet site at: <http://www.agronext.iastate.edu/corn/production/management/early/height.html>.

A lack of uniformity in plant heights typically means that the vegetative stages between plants vary. The severity of yield loss associated with uneven heights is dependent on the percentage of plants affected and how far behind they are. Although the field may look very poor, the yield loss may not be as severe as thought by the producer or agronomist. Use their tool to assess what the estimated yield loss will be for that particular field. How does it work? First: Count how many late plants are in 1/1000th of an acre, and divide that number by the total plants found in 1/1000 of an acre. Of course, we would like you to do this in several areas to get a good average. For example, we counted 32 plants in the area, but 8 were quite a bit smaller. That would mean 25% are late emerging plants in this case.

Next you will need to determine the growth stage of both the late and original plants. To do this, you may have to take an average for the late plants as there may be considerable variation. For example, if the late plants vary from V3 (three leaf collars visible) to V5 (five leaf collars visible); then use V4 as the average for these late plants. Let's also assume that the average for the bigger corn is V-7. Their calculation indicates it takes about 3 days to move to the next growth stage in this worksheet, so V7 minus V4 = 3 stages, multiply by 3 per stage, then this would mean that the smaller plants are 9 or 10 days behind.

There is no magic formula to determine how much yield loss that causes. Instead, there is a table in the worksheet mentioned above that summarizes much of the research about what yield losses occurred at different delay time periods and percentages of small plants. For our example, this table showed that when 25% of the stand was 10 days behind, the yield maximum has been reduced by 6%. Yields would likely have been reduced by 10% if these plants were 21 days different in size. An observation in these fields – the little plants often do not produce much, but those competitive plants next to them often make up for at least some of that lost potential.

With a little more limited availability for some of the hybrids this year, this is likely a year when we need to calculate carefully before we make a replant decision. This information should help us to do that better. Another replant decision tool I use frequently is the publication titled “Corn Planting Guide” to estimate yield expectations from various planting dates and remaining stand counts. You can get a copy on the web here: <http://www.extension.iastate.edu/Publications/PM1885.pdf>, or contact your local Extension Office to get this very good reference.

New Iowa Farm Custom Rate Survey Available

Adapted from Ag Decision Maker article by William Edwards, extension economist, 515-294-6161, wedwards@iastate.edu

For many years Iowa State University Extension has surveyed farmers, custom operators and farm managers to gather information about current rates for performing machinery operations and services. The purpose is to provide benchmark information that can be used for negotiating a fair and competitive charge for individual situations. The first survey, done in 1974, listed 38 different field operations. The most recent survey covered a total of 134 machinery operations, rental rates and miscellaneous services!

Rates Reflect All Costs

Custom farming rates assume that the operator provides the machine, fuel and labor. Thus, custom rates should reflect the costs of depreciation, interest on investment, insurance, housing, repairs and maintenance, fuel, lubricants, repairs, labor and a profit margin. However, some operators who do a small amount of custom work in addition to farming their own land may be satisfied just to cover their variable costs, this is, fuel, repairs and labor. In the long run, though, machinery must be replaced and a return on investment earned.

The values reported on the survey are simply the average of all the responses received for each category. The range of the highest and lowest responses received is also reported. These values are intended only as a guide. There are many reasons why the rate charged in a particular situation should be above or below the average. These include the timeliness with which operations are performed, quality and special features of the machine, operator skill, size and shape of fields, number of acres contracted, and the condition of the crop for harvesting. The availability of custom operators in a given area will also affect rates.

Methodology

Efforts are made to survey a balance of both custom operators and farmers, managers and landowners who hire custom work done. This year 581 surveys were mailed out, and 185 were returned. Of the people who responded, 34 percent indicated that they performed custom work, 17 percent indicated that they hired work done, and 49 percent indicated that they did both. Those who performed custom work reported slightly higher rates than those who hired it done, generally around 5 to 10 percent higher. Anyone who would like to be included in future custom rate surveys should contact William Edwards at wedwards@iastate.edu.

Several new operations were included in the 2008 survey. Complete harvesting includes combining the crop as well as supplying a grain cart and truck or wagon, plus drivers, to deliver grain to farm storage. Also included this year was combining corn with a stalk chopper head, baling large square straw or stalk bales, and managing grain stored in on-farm bins.

Machinery Rental

Sometimes machinery owners rent pieces of equipment to another operator, who provides the fuel and labor to operate it. In the case of a pulled implement, the renter often provides the tractor, as well. The Iowa Farm Custom Rate Survey shows average rental rates for about 20 commonly rented machines. For machines not included in the survey, a short worksheet is provided that starts with a custom rate and subtracts the cost of fuel, labor and a tractor in order to estimate a rental rate.

Complete custom farming rates include tillage, planting, pest control and harvesting. These rates have not increased as fast as rates for individual operations, possibly because the number of operations performed has decreased over time. See *Information File A3-12, [Historic Iowa Farm Custom Rate Survey](#)* for more information on trends in average rates.

Adjusting rates for volatile fuel prices has been a problem in recent years. In this year's survey it was suggested that respondents assume that diesel fuel would cost an average of \$2.75 per gallon delivered to the farm in 2008. However, prices have increased since then. One convenient way to adjust custom rates is to use *ISU Extension publication Pm-709, [“Fuel Required for Field Operations,”](#)* which contains estimated fuel consumption values per acre for many common operations. This publication is also available on the Ag Decision Maker web site as information file A3-27. Multiplying the fuel used per acre by the change in the price of fuel since the survey was conducted can provide an estimate of the most recent cost increases per acre.

The 2008 Iowa Farm Custom Rate Survey is available at county Extension offices or on-line as publication FM-1698, from the ISU Publications Store, or as *Information File [Iowa Farm Custom Rate Survey](#)* on the Ag Decision Maker web site.