



# HOEGEMEYER™ HYBRID THEORY

I N T E R A C T I V E   A G R O N O M Y   F O R U M

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## END OF THE ROW

### Thoughts on Grain Marketing

- Short crops peak early and have a long (price) tail.
- Never store a short crop; always store a big crop.
- Big crops keep getting bigger; small crops get smaller.
- The market often predicts things that never happen.
- The one thing certain about markets is that they are uncertain in an ever-changing environment.
- It's not the "facts" that are important in a market. What is important is what people "think" the facts are.
- Don't concentrate your efforts on how high or low a market can go. Concern yourself only with identifying the direction of the price trend.
- Bulls make money, bears make money...but pigs get slaughtered.
- It is always better to be out of a market wishing you were in than in wishing you were out.
- Unhappiness consists of not knowing what you want in a market and killing yourself to achieve it.
- Successful commodity trading requires four things: knowledge, disciplined courage, money and the energy to merge the first three properly.
- Commodity marketing is an art, not a science.

### THE DOCTOR IS IN



### END OF THE ROW



### RIGHT SEED FEATURES



### AGRONOMIST FEATURES



## THE DOCTOR IS IN



### The Industry Race to More Highly Stacked Corn Hybrids

By Dr. Tom Hoegemeyer, Chief Technology Officer

Most everyone has seen the announcements from technology companies concerning agreements allowing stacking of various sources of genes into single varieties. What is driving these plans?

Several things. One issue is refugia (a plural of refuge). Larger planters, as well as bigger farm operations, make it very difficult to change seed to plant a refuge field by field. While most growers have done a commendable job, we all hear of people and situations where "my refuge is my neighbor's field." Not only is such a situation illegal, but it WILL result in loss of effectiveness of the insect resistance we have come to depend upon. Also complicating the situation, different insects and the resistance genes to these insects are different in their basic biology, and really require DIFFERENT refuge rules, which is nearly impossible to manage. We have already seen the emergence of insects—Western Bean Cutworm, for instance—that are differentially affected by different insect resistance genes.

In an attempt to solve some problems, trait providers are seeking alliances that allow them to stack genes with different modes of action or different ranges of pests controlled. There are several pieces of philosophy behind these stacks. First, by stacking several traits in a hybrid, it allows you to effectively control a wider range of insects. Second, if more than one mode of action is involved, it becomes similar to having different active ingredients. This greatly reduces the ability of the insects to evolve resistance to the whole package versus just having one.

Third, this may allow the reduction of the percentage refuge required. Ideally, having a "refuge in the bag" approach would allow a grower to plant entire acreages to the insect-protected hybrid or hybrids without having to change seed. However, even if multi-stacks merely allow percent of refuge area to be reduced, this will result in increased productivity over the whole acreage.

With respect to herbicide tolerance, we are seriously in need of alternatives for the long run. If growers are able to treat the same hybrid or variety with a range of chemicals or active ingredients, it will provide much more management flexibility. It should also allow us to drastically reduce the rate of emergence of resistant weeds—if we are willing to treat acres with more than one active ingredient and/or rotate chemistry over seasons.

Finally, there may be the opportunity to incorporate some disease resistance, stress tolerance, enhanced yield and nitrogen utilization genes directly into a wide range of hybrids. We will be seeing some of these hybrids emerge from the "stack race" over the next three or four years. The issue won't be, "Is an eight-stack better than a five-stack hybrid", it will be much more of an issue to access the value of the whole package of traits—and not just transgenic traits. The results of the Corn Genome Project are just starting to be revealed. Over the next five to ten years, we will see products developed using "native" variation that is now available only in exotic corn collections. This variation will be added to the elite inbred lines and hybrids we are now breeding, and then "stacked" with the transgenic traits we need that are not available (or harder to use) from within natural corn DNA. Corn DNA consists of almost 50,000 genes—over twice as many genes as in humans! Truly, it is a brave new world of biology.

If you have questions, send an email to: [askus@therightseed.com](mailto:askus@therightseed.com), or directly to Dr. Tom at [drtom@hoegemeyer.com](mailto:drtom@hoegemeyer.com).



# The Right Forage for You



**By Dennis Fitzke**  
Alfalfa Product Manager

Are you concerned about the availability and cost of forages? Hoegemeyer offers a slate of unique and innovative products that can help you produce more forage. Please consider the following as you finalize your cropping plans this year.

- A great interim hay crop in rotation with alfalfa; will utilize the alfalfa nitrogen credit.
- Excellent choice for double-cropping behind wheat or oats, on dryland or under irrigation.

Hundreds of Hoegemeyer customers planted Tiffany Teff in 2007 under a wide range of growing conditions and parameters. Here are some reports:

- Because of Tiffany's soft texture and nutritive values, hay producers say it is becoming the preferred forage with many horse owners.
- Some growers are finding that dairies prefer Tiffany Teff over brome and orchard grass for their dry cows.
- Other growers are putting up big, round bales for feedlots to use as grinder hay.
- Several customers interseeded Tiffany into older alfalfa stands after taking the first cutting of alfalfa in order to maximize forage production and produce highly desirable grass/alfalfa mix hay. A customer in Kansas said he sprayed alfalfa with glyphosate to control weeds, then no-tilled Tiffany. An Iowa customer was delighted with his results from disking an alfalfa field, then firming with a cultipacker and seeding Tiffany with a conventional drill.
- Many growers double-cropped Tiffany behind wheat or oats by spraying the stubble with glyphosate to control weeds, then no-tilling Tiffany. A Nebraska grower commented, "My double-crop Tiffany under a pivot was more profitable than the wheat."

**Tiffany Teff** is a new, high-yielding, warm season annual grass hay with quality and palatability rivaling Timothy. Teff is fast becoming the new high-value forage grass alternative. Tiffany Teff is the result of plant selections made by Target Seed breeders from elite lines identified from the USDA world collection of teff grasses. Tiffany Teff is a fine-stemmed, multi-cut grass with a shallow, massive root system. It is capable of producing high yields, with quality rivaling and surpassing many other grass hays.

- Plant height at maturity can range from three to four feet, with forage yields of four to eight tons/acre depending on the environment.
- Can be cultivated on a wide range of soils and environments, tolerating drought to waterlogged conditions.



Hoegemeyer Alfalfa Product Manager Dennis Fitzke and Adam Hansen, a Hoegemeyer dealer from Audubon, Iowa, check out a Tiffany Teff field.



Hoegemeyer partners with Target Seed to offer alfalfas that are selected for traffic and compaction tolerance, which results in the development of varieties with unique plant types. Other benefits include larger roots, more crown buds per plant, more stems per crown and more leaf mass per plant.

Field results show that all alfalfa varieties do not persist or yield the same under wheel traffic and compacted soil conditions. Tests indicate:

- 40% of the field is subjected to wheel traffic each year
- Yield loss is 16%-26% in traffic areas
- Forage quality is reduced in traffic damage areas

High-return, traffic-tolerant alfalfa varieties for the Western Corn Belt include:

#### **TS4007 NEW**

- Improved forage quality, digestibility and traffic tolerance
- Selected for increased leaf size and dark green color
- Combines high quality with superior yield and persistence

#### **TS4002 NEW**

- Developed for growers that need yield and longevity in difficult environments
- Recommended under poor moisture conditions such as dryland and limited irrigation
- Bred for improved yield and persistence in marginal saline soils

#### **Rugged**

- Withstands traffic, compaction and grazing tolerance
- More tolerant to frequent cutting schedules and late fall cutting
- Top choice for fields that will experience grazing pressure

Economical alfalfas include:

**Bulldog:** a four dormancy alfalfa for Nebraska, Iowa and South Dakota

**Bandit:** a five dormancy alfalfa for Kansas, Oklahoma and Missouri

Please contact the Hoegemeyer office at 1-800-AG LINE 1 or your representative to discuss how these products can help you produce more forage and profit in 2008.

Email questions/comments to: [d.fitzke@hoegemeyer.com](mailto:d.fitzke@hoegemeyer.com).

## Dr. Tom Answers Your Questions on Rootworm Protection

We get lots of questions concerning new traits, but this year most of these questions revolve around rootworm genes, their effects and the relative need for them in different situations. Here are two questions people often ask:

### **Do "triple-stack" hybrids—with RW protection—have less root lodging at harvest?**

A hybrid with good roots and RW protection will be a hybrid with good roots in environments with the presence or absence of RW pressure. A hybrid with mediocre roots and RW protection will be a hybrid with mediocre roots in environments with the presence or absence of rootworm pressure. This is determined not by the one or two genes giving rootworm resistance. It is determined by the dozens—or hundreds—of other genes affecting root structure and carbohydrate partitioning between above- and below-ground parts of the plant. However, RW protection does simplify management.

### **Do all hybrids benefit equally from rootworm protection?**

No. One can't say that incorporating RW protection will benefit every hybrid by X bu/A with any given rootworm environment. Some hybrids have more rapid root regeneration, some have larger initial root mass, and some just seem to tolerate root pruning better than others. Ag media and advertising have people believing that any hybrid with RW gene protection will be "better." This wasn't true 10 years ago when Bt Corn Borer protection was introduced, and it isn't true now. I think it will take a few years to sort out which combinations of hybrids and genes actually perform in the field. Incidentally, this was true 30 years ago when genetic resistance to the leaf blight complexes became available. There will always be a sorting-out process. The important thing is that we are on the right track, and we are making progress.

If you have more questions, send an email to: [askus@therightseed.com](mailto:askus@therightseed.com), or directly to Dr. Tom at [drtom@hoegemeyer.com](mailto:drtom@hoegemeyer.com).



# The Impact of Proper Planting on Yield and Performance



**By Ryan Spurgeon and Ryan Siefken**  
Hoegemeyer Agronomy Department

They say you can't live in the past, but the complications caused by last year's wet spring are still fresh in our minds. At the time this article is written, it is impossible to predict what type of spring we will have. Therefore, the Hoegemeyer agronomists used past experiences to dream up some thought-provoking questions to try to get you in the right mindset for planting this year.



**Q. True or False? Most row cleaners on planters should be set low enough to move soil, ensuring a clean zone to plant into.**

A. False. Row cleaners are meant to move residue, not soil. If they are moving soil, you may be asking for problems from crusting and erosion in the row zone.

**Q. True or False? Seed-to-soil contact when planting corn is just as important as planting date, insect and herbicide traits, and hybrid selection.**

A. In order to be successful, all of the above need to be "true." Good seed-to-soil contact is essential for a corn plant to begin its development properly. Uniform emergence and proper root development rely on this. By purchasing a hybrid with the best genetics and traits, placing it on the right farm with proper fertility and great growing conditions, you are off to a good start. But if you place that seed into a questionable seedbed that allows for poor seed-to-soil contact, it likely will never have a chance to reach its potential.

**Q. True or False? If planting corn early, it makes sense to plant shallower.**

A. False. Although planting shallow may sometimes put the seed in warmer soil and aid in fast emergence, you shouldn't count on it. The soil temperature at 2.5 inches is less likely to fluctuate than at shallower depths, and the moisture content will be more uniform as well. Shallow planting can actually promote uneven germination and emergence.

**Q. If the seed furrow measures 2 to 2.5 inches deep, does that mean corn seed is planted at the right depth?**

A. When measuring planting depth, it is always important to take into account the structure of the soil. Tilled, "fluffy" soil will settle over time; what was once a two-inch depth may prove to be only an inch deep after a couple of weeks.

**Q. Is it true that modern hybrids are better able to handle cold and/or wet soil conditions early in the year?**

A. It is true that modern hybrids have been bred to have better early vigor than the hybrids that were grown 20 years ago. Another big advantage to modern-day hybrids is the improvements in seed treatments. Seedling survival may have actually improved more with seed-applied insecticides and newer fungicides than with genetics. Soil temperatures remaining above 50 degrees throughout the duration of germination and emergence will result in the most uniform stands.

**Q. Which would most likely benefit from Gaucho® seed treatment—early or late planted soybeans?**

A. You can argue either way here, but the most likely benefit would be when soybeans are planted early. Many times, the first planted soybeans in an area are singled out and attacked by over-wintering populations of bean leaf beetles. Gaucho has good activity on bean leaf beetles through about the V2 stage. Insecticide seed treatments such as Gaucho can also provide up to 60 days residual activity on soybean aphids from the time of planting. This would argue for the later planting date benefiting the most. However, using seed treatments to control aphids is not a reliable means of control. In addition, all of our Gaucho-treated soybean seed is also treated with Trilex®+Allegiance® fungicide, which shows a greater benefit in early-planted fields.

**Q. In a wet spring, you may have to ask yourself, "Do I plant a little wet and risk reduced yields, or do I plant late and risk reduced yields?"**

A. The most recent research done in Iowa has found May 5-10 to be the dates after which corn yields begin to slowly drop off. These dates will hold true as you cross the river into Nebraska, but they become less important as you move south into Kansas. It's important to stress that yield levels are only slowly reduced for a week or two after May 5.

Planting before April 20 has its risks, too. If you plant when the calendar says to but conditions are too wet, you may pay a bigger price than for planting late. Hoegemeyer had documented a situation when part of a field had been planted in the morning when the soil was still damp, and the other part was planted in the afternoon after the soil

had dried out more thoroughly. Although the entire field was planted with the same hybrid, the corn looked completely different based on time of planting. At harvest time, a weigh wagon found a 12-bushel yield advantage to the section planted in the afternoon. Just remember, you might think it's getting late in the year, but just imagine how late it will be when you replant due to poor stands!

**Q. Which will most likely affect yield—slow emergence or uneven emergence?**

A. You can bet there are no awards for having a field of corn up before your neighbor's. Fast emergence does not necessarily equate to high yields. However, uneven emergence of plants within the same field significantly reduces yield. Ohio State University research has shown that 10% reductions in yield are common if half of a stand emerges two weeks late, and 20% yield losses can happen when emergence is varied by three weeks.

**Q. True or False? No-tilled corn-on-corn fields should always be planted early to maximize yield potential.**

A. False. Early planting dates are often associated with high yields, but not always. Fields of continuous corn usually have more crop debris left over from the previous year. This can cause these fields to remain wetter and colder longer than a field of soybean stubble, and less suitable for early planting. One of the biggest advantages for no-till is not needing to be in the field as early—doing tillage. Be patient and wait for good planting conditions in no-till.

**Q. Who should I listen to when it comes to selecting the right planting population?**

A. The industry continues to trend toward higher corn populations, but there is definitely not a one-size-fits-all recommendation. Optimum population varies tremendously based on regional, local and yearly differences. It is also true that different hybrids will have different optimum populations, but most research has shown that matching population to environment is more important than genetics.

From a risk management standpoint, most data has shown only a slow drop-off in yield as population exceeds the optimum. On the other hand, if the planting population starts off less than the optimum population, and a pest or weather event reduces stand, yield will most certainly be left on the table at the end of the year. Regarding population, it never hurts to do your own on-farm research from time to time. Just remember that at the end of the day, it's not nice, showy-looking ears that you get paid for, but bushels you haul to the elevator.

**Q. Which of the following soybean planting populations is most likely your best choice under normal growing conditions—100,000, 140,000 or 185,000?**

A. With the rising cost of seed and supply shortages in some areas, reducing soybean populations has been a hot topic lately. Research from Iowa State University has shown that 100,000 plants per acre of final harvest stand is all that is needed to obtain nearly 100% of optimum yield. Kansas State University research has also found that optimal dryland yields can be achieved at around 81,000 plants per acre. It is important to remember that this is the final harvest stand, and not the stand you have in June. Historically speaking, soybeans have been overplanted in the past to some degree, with some growers approaching 200,000 not that many years ago. For many areas, a planting rate of 140,000 seeds per acre is a good choice.

**Q. How fast can I go before plant spacing becomes too variable?**

A. Five miles per hour is generally considered the "speed limit." On 30-inch rows, at a planting population of 30,000 and a speed of 6 mph, your planter units are firing out 15 seeds per second. That's fast. An article by Dale Hildebrandt in *Minnesota Farm Guide* pointed out that a Thomson machine gun fires 18 rounds per second. Greg Sauder of Precision Planting in Tremont, Illinois, found in a no-till situation that slowing down to 4.5 mph from 7 mph increased yields over 20 bushels per acre. With 1,000 acres of corn and even a \$4 corn price, that is like getting an \$80,000 speeding ticket. OUCH!

To comment or for more information, write to: [r.siefken@hoegemeyer.com](mailto:r.siefken@hoegemeyer.com) or [rspurgeon@hoegemeyer.com](mailto:rspurgeon@hoegemeyer.com).





# Attack of the Corn Fungicides



**By Don "Moe" Moeller**  
Agronomist

Because of higher crop prices, producers may be more willing now to add input costs to their production expenditures in order to maximize their corn yields. Fungicides offer producers the potential to help protect yield with hopes of later season "plant health and better harvestability." For some, the

"did it pay to spray?" verdict is still out. For others, there is no question that it was profitable and they will be doing it again. Researchers have concluded that there are times when fungicide applications do pay. In some cases, 20 bushels per acre yield increases and more have been documented. Researchers suggest that if a producer is contemplating a fungicide application, there are several things to take into consideration.

- **Continuous corn:** Many of the foliar disease pathogens survive winters in infested crop residue. Infested residue on the soil surface significantly increases the risk and development of gray leaf spot, leaf blights and eye spot. When other crops are not used in a rotation practice, the chance of a disease outbreak increases considerably. (Note: the major rust disease pathogens do not survive in freezing conditions and are blown in with the southerly summer winds.)
- **No-tilling:** If crops from previous years were infected with disease and the residue is not buried with tillage, there will be a good chance of having a high fungal population growing in the residue at the base of your corn plants this year. There are many benefits to no-tilling, and the benefits may still outweigh the risks of greater disease occurrence, but extra consideration may need to be given to applying a fungicide.
- **Neighboring fields:** Even if you are not no-tilling, an adjacent field planted no-till into corn residue will in all probability produce spores that could infect your field with disease.
- **Later planted corn:** Infection at earlier growth stages will have a greater impact on yield. If infection takes place when your field is at an earlier growth stage than nearby fields, disease can impact your yields even more than your neighbor's because a higher percentage of the grain fill period is exposed to foliar diseases.
- **Disease activity around tassel time** (such as GLS, rusts, leaf spots, etc.): Take notice that in recent years both common and southern rust have been a problem at or around tassel time in many locations.
- **Weather conditions** that would favor diseases (especially around tassel time): The environment inside the crop canopy plays a significant role in disease development. In general,

hot, humid weather favors disease pathogen development and spore production. When the relative humidity on the leaf surface is over 90% for 12 consecutive hours or more, conditions are favorable for gray leaf spot development. Precipitation, prolonged dew and irrigation can all make for favorable disease conditions within the crop canopy.

- **Planting susceptible hybrids:** Some hybrids are more tolerant to some of the leaf diseases, which help them withstand infections longer. However, if you do spray some of your fields with a fungicide, remember in the fall which fields you did not spray so you can fairly evaluate those non-sprayed hybrids. If there was heavy disease pressure in the area, even a tolerant hybrid will be at a yield disadvantage if it was not sprayed, too!
- **Prolonged humidity conditions:** Take into consideration not only daily humidity, but also the effects that ample summer rains and irrigation produce.
- **Fungicide activity:** Most fungicides are effective against disease for 14 to 21 days. On average, corn takes approximately 60 days from silking to physiological maturity. Spraying a fungicide too early could mean that the residual activity of the product will be worn off before the critical grain fill period is completed. Spraying too late could mean that disease has already limited yield, and you could run into issues with the pre-harvest interval.

- **Stalk rots:** Foliar fungicides will have no direct effect on stalk rot, as current fungicides are not systemic enough to be effective against stalk rot pathogens. However, foliar disease severity is highly correlated with stalk rot occurrence. Therefore, fungicide applications may indirectly reduce stalk rots by management of foliar disease and reducing plant stress.
- **Read the product label:** Recommended fungicide application varies from one product manufacturer to another. For instance, one manufacturer might recommend more water than another; whether an adjuvant should or should not be used; different application methods and timing; or other crop safety issues. The real success of the fungicide used may depend on its application. The label will also help you understand the chemistry of the fungicide. Some fungicides, like Headline® and Quadris®, contain only a "strobilurin" component; other fungicides, like Stratego® and Quilt®, contain a strobilurin component plus propiconazole, which is from another fungicide chemistry known as the "triazoles." Strobilurins are protective only, whereas triazoles are primarily considered curative.

We all need to remember that a management tool is only going to "protect yield" when there are factors that would reduce a field's yield potential. Research seems to be indicating that if there is significant disease pressure, a fungicide application at the correct time could potentially "protect yield" during the grain fill period. Protecting the corn crop from a stressful growing environment is critical in attaining a high harvestable yield.

There are no reliable, clear-cut rules as to when and where a fungicide should be applied, but there are some basic principles that one can use for guidance. Be aware that most of the commercial corn acres that were sprayed with fungicides last year were treated with preventative products rather than curative. That is why many fungicide labels contain phrases like "apply prior to disease development." In most situations, the trick is to apply a fungicide at the beginning of disease development. Of course, nobody knows for sure exactly when disease will develop, and how severe the outbreak will be; however, considering the factors discussed here will increase your odds of success.

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## Did You Know?

Agronomy information is available 24/7 on our Web site. Just log on to [www.therightseed.com](http://www.therightseed.com) and click the Agronomy button!



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