



Ag Decision Maker

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High nitrogen fertilizer prices -- again

by John Sawyer, Associate Professor of Agronomy, (515) 294-7078, jsawyer@iastate.edu

Corn N fertilization

I am often asked what nitrogen (N) rate should be applied for corn production. I hesitate to give too simple of an answer, but actually a straightforward rate of 125 lb N/acre for corn following soybean (SC) and 175 lb N/acre for corn fol-

lowing corn (CC) (continuous, second-, or third-year) with good N management works well. If you have followed Iowa State University Extension publications regarding N management over the years, these rates are in the middle of suggested rate ranges provided since at least 1979 (100--150 lb N/acre for SC and 150--200 lb N/acre for CC). An analysis of recent data from many N rate trials conducted in Iowa since 1991 indicates these "straight-forward" rates are still correct. Figure 1 shows the economic net return to N for SC and CC at four different price ratios of N price:corn grain price (\$/lb N:\$/bu corn grain). For the figure, the corn price was held constant at \$2.20/bu and N prices were varied from \$0.11, 0.22, 0.33, and 0.44 per lb N. These give price ratios of 0.05,

0.10, 0.15, and 0.20, respectively at the four N prices. The point of maximum return to N (MRTN) is the N rate where the greatest economic net return to N occurs. This is indicated by the solid symbols on each price ratio line. As you can see, at the 0.10 price ratio the maximum return occurs at 123 lb N/acre for SC and 174 lb N/acre for CC, at the middle of currently suggested N rate ranges.

Also remember that corn following established alfalfa most often requires no N application, with an occasional response to

continued on page 2

Handbook updates

For those of you subscribing to the handbook, the following updates are included.

2006 Iowa Crop Production Cost Budgets – A1-20
(13 pages)

Cash Corn and Soybean Prices – A2-11 (2 pages)

Please add these files to your handbook and remove the out-of-date material.

continued on page 6

Inside . . .

- "Cashing out" with related party exchanges..... Page 4
- Iowa Market Maker - linking agricultural markets..... Page 6

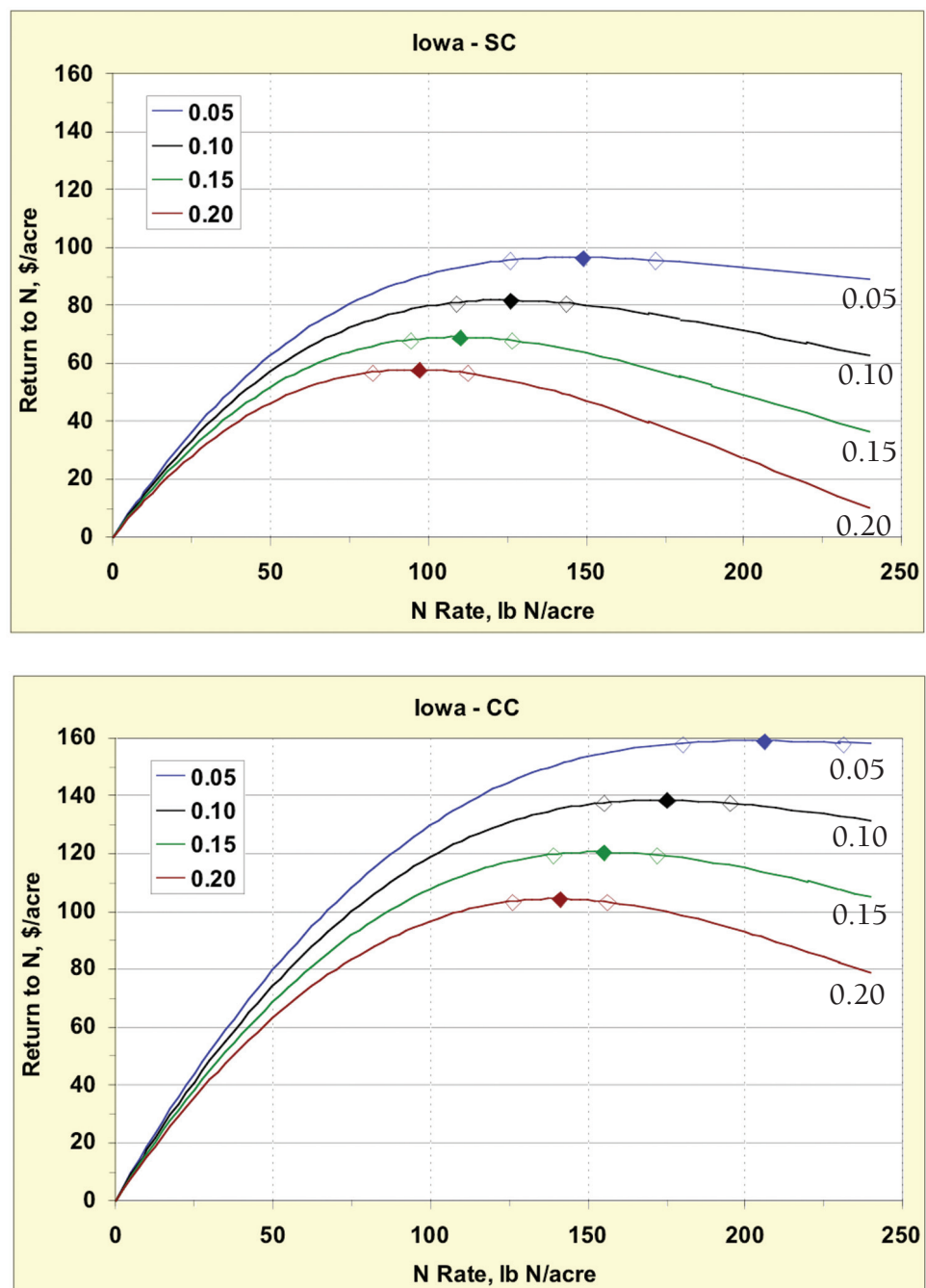
High nitrogen fertilizer prices -- again, continued from page 1

a small amount of N, around 30 lb N/acre. Second-year corn after alfalfa is more responsive to applied N, with response up to 60--90 lb N/acre. Second-year corn following soybean is gaining acreage in Iowa. Nitrogen rate trial data is limited from across Iowa; however, based on a long-term and on-going N rate-crop rotation study conducted at the Iowa State University Northeast Research Farm located at Nashua, second-year corn appears to have N fertilization requirements similar to continuous corn (see above discussion).

How much should rates be adjusted when N prices are high?

As the lines in Figure 1 indicate, the net return is pretty flat around the maximum return. This is due to the small yield change at N rates near optimum N. The open symbols on each line indicate net return that is within \$1.00/acre of the maximum, and can be considered a range of N rates that provides similar profitability. The width of

Figure 1. Maximum net economic return to N (MRTN indicated by solid symbols) and profitable N rate range (indicated by open symbols) for corn following soybean (121 SC sites) and corn following corn (56 CC sites) in Iowa at different N:corn price ratios. Net return is the value of corn grain produced minus the N fertilization cost. Corn grain price held constant at \$2.20/bu, and N prices varied at \$0.11, \$0.22, \$0.33, and \$0.44/lb N to give price ratios of 0.05, 0.10, 0.15, and 0.20, respectively.



High nitrogen fertilizer prices -- again, continued from page 2

each range varies somewhat depending upon the price ratio, but generally is within about 20 lb N/acre of the rate at the maximum return. This range of similar net return points out the flexibility available when choosing application rates. These net return curves, point of maximum net return, and profitable N rate ranges can be used as a guide for N rate adjustment based on corn and N prices. Or, as a general rule, start with the 125 or 175 lb N/acre rate for the SC and CC rotations, and then for each one cent (\$0.01) change in N price from \$0.22/lb N, change the N rate by 1.5 lb N/acre for SC and 1.7 lb N/acre for CC. For example, if you have to purchase N at \$0.40/lb N, then the N rate to apply to corn following soybean would be 27 lb N/acre less than 125 lb N/acre, which is 98 lb N/acre. If the N price you pay is \$0.15/lb N, then the N rate to apply to corn following soybean would be 11 lb N/acre more than 125 lb N/acre, which is 136 lb N/acre.

Additional considerations

As you think about changing N application rates, you also should take into account your risk tolerance or aversion. As application rates are lowered in response to higher N prices, the chance of having deficient N does increase. You may well be comfortable with a greater chance of either some N shortage or greater occurrence of deficit N. Or, if capital for purchasing production inputs is limited, then increased risk from lowered N application may be unavoidable. Or, you

may wish to apply N at rates that provide good yield but are more environmentally benign. In these cases you would choose rates at the lower end of the profitable ranges. With limited capital or shortage of N fertilizer materials, it would be better to apply lower N rates to all production fields than not applying any to some.

Corn Nitrogen Rate Calculator

ISU Extension offers a web site that provides a process to calculate economic return to N application with different nitrogen and corn prices and to find profitable N rates directly from recent N rate research data. The method used follows a newly developed regional approach for determining corn N rate guidelines that is being implemented in several Corn Belt states. To use the calculator, visit: <http://extension.agron.iastate.edu/soilfertility/nrate.aspx>.

In summary

Nitrogen application to corn should reflect rates determined to be economically profitable from research trials. Rates also can be adjusted for changing economic conditions. However, decisions also should consider effects on production and environmental risk.

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“Cashing out” with related party exchanges*

by Neil E. Harl, Charles F. Curtiss Distinguished Professor in Agriculture and Emeritus Professor of Economics, Iowa State University, Ames, Iowa. Member of the Iowa Bar

The hazards with related party exchanges under the like-kind exchange rules are well known. If, within two years of a like-kind exchange of property with a related person, the related person disposes of the property or the taxpayer disposes of the property, the gain is recognized. The like-kind exchange rules recognize three exceptions to the two-year disposition rule –

- 1) dispositions involving the death of the taxpayer or the related person;
- 2) dispositions involving a compulsory or involuntary conversion; and
- 3) where the Internal Revenue Service is satisfied that avoidance of federal income tax is not a principal purpose of the transaction.

If a transaction is a related party exchange, the Form 8824 must be filed for the two years following the year of the exchange.

“Cashing out” of the investment

A primary objective in enactment of the related party rules was to deny non-recognition treatment for transactions in which related parties make like-kind exchanges of high basis property for low basis property in anticipation of sale of the low basis property. The related parties have, in effect, “cashed out” of the investment with the result that the original exchange is not accorded non-recognition treatment.

Revenue Ruling 2002-83, issued in late 2002, illustrates the hazards to the tax treatment of the exchange if one of the related parties cashes out in the process. In that ruling, a taxpayer A transferred relinquished property (tract 1) with a fair market value of \$150,000 and an income

tax basis of \$50,000 to a qualified intermediary in exchange for replacement property formerly owned by a related party, B. That property, tract 2, had a fair market value of \$150,000 and a basis of \$150,000. Individual C, who is unrelated to either A or B wanted to acquire tract 1. C ended up with the first tract, with a fair market value of \$150,000. A few days later, B was paid the \$150,000 sale price. A ended up with tract 2, C ended up with tract 1 and B “cashed out” of the deal with \$150,000 in cash. Had A exchanged with B directly, it would have been a related party exchange and a sale within two years would have triggered gain on the exchanged property. As a consequence, the exchange is viewed as an exchange which is part of a transaction – or series of transactions – to avoid the related party rule and the non-recognition provisions of I.R.C. § 1031 do not apply. Using an unrelated third party to circumvent the related party rule is ineffective in avoiding the strictures of the related party provision. Essentially, the third party involvement is disregarded with the transaction viewed as an exchange by A with B, related parties, with a sale occurring within the two year period specified by the related party rule.

A similar fact situation was litigated in *Teruya Bros., Ltd. & Subs. v. Commissioner* which involved an unsuccessful attempt to avoid the related party rules using a qualified intermediary. Again, a sale occurred within two years of the initial exchange and one of the parties “cashed out” within that time period. What occurred was that, in a series of transactions, the taxpayers transferred real properties to a qualified intermediary which sold the properties to unrelated parties. The qualified intermediary used the proceeds and additional funds from the taxpayer

“Cashing out” with related party exchanges, continued from page 4

to purchase like-kind replacement properties from a related corporation. The taxpayer failed to demonstrate that tax avoidance was not one of the principal purposes of the exchanges. The court concluded that the use of the qualified intermediary was interposed to avoid the related party rule.

In a 2004 private letter ruling, IRS distinguished Rev. Rul. 2002-83 in holding that there was no “cashing out” of a property interest and no sale was contemplated within the two year period even though one property ended up being acquired by a buyer. As the ruling notes- “Upon completion of the series of transactions, both related parties will own property that is like-kind to the property they exchanged. Moreover, neither party will have ever been in receipt of cash or other non-like kind property (other than boot received in the exchange) in return for the relinquished property.”

The ruling notes that neither party was in receipt of boot (or any other non-like kind property) in return for the relinquished property other than boot received in the exchange.

This ruling provides one template for planning a transaction to avoid the trap of Rev. Rul. 2002-83. The critical feature of the letter ruling is that there was no “cashing out” of their investment by one of the related parties.

In conclusion

It is abundantly clear that “cashing out” by one of the parties in a related party exchange (even with an unrelated qualified intermediary) falls within the related party rules. Unfortunately, that is not unusual with related party exchanges.

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Iowa Market Maker - linking agricultural markets

by Christa Hartsook, Communications Specialist, Ag Marketing Resource Center, Iowa State University, (515) 294-4430, hartc@iastate.edu

MarketMaker is an interactive mapping system that finds producers and markets for agricultural products. MarketMaker is a resource for all businesses in the food supply chain. The site can help a grocery store find farm-fresh eggs or a farmer find a place to sell them.

How Do I Use Market Maker?

The MarketMaker web site contains demographic and business data that the user can query. Details can be summarized on a map to show concentrations or consumer markets and strategic business partners. Providing this kind of information in a map-based format makes much more sense than business lists and statistical tables.

What data can I expect?

For example, a user can request lists of federally inspected packing plants along with a map that identified their locations. If you are a grocery store manager looking for the lowest producer of organic vegetables, you can query the web site to find names and contact information.

Census data is also a feature of the site. For example, a producer wanting to sell meat to Hispanic consumers can request a map showing the greatest concentration of upper-income Hispanic households, then request a complete demographic of those locations.

Iowa Market Maker - linking agricultural markets, continued from page 5

Funding for the project was provided by the Leopold Center for Sustainable Agriculture, the Agricultural Marketing Resource Center and Iowa State University Extension Value Added Agriculture Program.

The Value Added Agricultural Program (VAAP) continues the tradition started by Iowa State University Extension over one hundred years ago by providing unbiased, science-based information to help establish or expand agricultural-related businesses in Iowa. Whether it's a new start-up or an established business wanting to expand, the VAAP works directly with the owners of the business.

Agriculture in Iowa is undergoing a period of transformation, one marked by changing markets, new products, shifting consumer demand and technological developments. These trends create opportunities to differentiate new agricultural

products from traditional commodities. Iowa State University Extension's Value Added Agriculture Program strives to:

- Facilitate development of agricultural-related businesses
- Assist clients in making informed decisions
- Provide leadership and vision for value-added agriculture education and business development

For more information about Market Maker or the ISU Extension Value Added Agriculture Program, contact (515) 294-0588, marketmaker@iastate.edu or <http://www.iavaap.org>.

The Iowa Market Maker site is: <http://ia.marketmaker.uiuc.edu>.

Updates, continued from page 1

Internet updates

The following updates have been added to www.extension.iastate.edu/agdm.

In-Store Demonstrations – C5-33 (1 page)

Choosing a Distributor for Your Product – C5-161 (1 page)

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USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

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