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## Information: The New AG Commodity

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## INFORMATION: THE NEW AG COMMODITY

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Depending on how you call it, computer technologies will complicate or complement your crop or livestock farm business operation sooner rather than later.

And if you don't use information-age technologies, you may be abused by them. Here's why: Look at your position on the farm-to-food chain. Who has the most power? Those who control genetics tell you what kind of product to grow. Suppliers sell you the inputs.

You're the next link--smack in the middle--taking most of the risk of precipitation, products, and prices. Processors take your kernels and carcasses and turn them into value-added products. And retailers, the ones closest to consumers, market these products to numerous end-users. As ag production becomes more vertically integrated, genetics and retailer segments become more closely aligned--and more powerful. The chain wraps right around you.

Your challenge: what you know about what you grow will determine how you strengthen your links in the food chain.

Will you continue mining No. 2 Yellow Corn, or will you modify how you manage your resources and, say, produce an attribute-specific product for a premium? Will you raise pigs, or will you produce and market premium porkchops?

But then, will you avoid becoming a high-tech peasant, armed with all the latest gadgets to virtually guarantee a specific quality product--but beholden to someone else to tell you which buttons to push and when? Whose gray cells control the black boxes?

Information age technology can empower you or entrap you. It may be easier said than done, but here's how to put it to work for you, as you get "plugged in to the planet."

First, inventory your ability to manage your resources of land, labor, capital, and knowledge. Use precision farming tools to increase your efficiency. Then use "information technologies" to improve your connections in the marketplace and look for new information and opportunities.

For example, you may find that electronic communications via Internet and the World Wide Web open up new avenues of opportunity. You can develop new business relationships, or advertise your capabilities, or communicate with investors, landlords, suppliers, and advisors.

Here's one way to capsule these concepts:

Harnessing the power of information technologies to acquire data, analyze information, add knowledge, and apply it with wisdom, will empower you to understand past performance, as you

project and implement strategies to meet the economic and ecologic objectives for the future of your farm business. Objective: empower you to meet the future.

Many site-specific precision farming practitioners follow this information-management model: 1) identify practical variability; 2) investigate probable causes; 3) instigate possible solutions; 4) integrate precise evaluation.

For crop farming, this involves utilizing yield monitors, rain gauges and other sensors to quantify variability within fields--then doing some detective work to determine the most probable cause(s) within the complex web of possibilities that exist year to year.

The solutions (some may call them prescriptions) of necessity presume a certain weather pattern or end result of management practices. That's only part of the reason that procedures must be in place to evaluate the solutions as well as further investigate the variability year to year.

For the most part, site-specific precision farming is a higher level of onfarm research than we've had in the past-- "real-time research." And farmers need to be equipped to design the research and decipher the results. This requires a well-thought through process--and will likely require interpretative assistance.

Who will help provide this assistance? With "card-trol" fertilizer dealerships, the farmer can pull up, pop his recipe card in the slot, then get his applicator filled with his specified ingredients. He'll get his advice somewhere else. All the suppliers: seed, implements, chemicals, fertilizer, etc can play some role.

But more and more, farmers will want to control their own destiny in terms of dealing with their data. That's why the data is more important than the device. It's the information, not the contraption...

This precision farming model also follows the model of the flow of data to decisions:

1) acquisition of data, 2) analysis of information, 3) addition of knowledge, and 4) application of wisdom.

While it is trying to become a knowledge-based industry, for the most part agriculture still operates at the data acquisition stage. The challenge for farmers is to get through the information age and on to the knowledge stage and beyond. The problem is that much of society seems to demand that farmers operate at the wisdom stage.

Precision farming has been described as "doing the right thing, at the right time, in the right place, in the right way" and as "managing parts of fields for actual needs rather than whole fields for average needs." Either of these point to a level of precision that we are still striving for today.

While we certainly need a precise device in order to collect precise data, our most telling need is for precise advice. We can convincingly position ourselves to the centimeter level in the field, then collect terabytes of data or control multitudes of valves and servos. But can we confidently declare that we know exactly what to do?

We need to develop an "information advantage" for our farms, but this will come through a longterm investment in the farm database. This will be aided by adapting information technologies, including geographic information systems, global positioning systems, remote sensing, direct sensing, and computer communications systems.

The goal should be to make sure the farmer's gray cells are the ones controlling the black boxes. The landowner will be liable for the economic and ecologic consequences of the decisions made on his farm. Increasingly, farm decisions may be made by community decisions, rather than individual decisions.

Only the farm operator has the necessary knowledge--and the economic and ecologic incentives--to precisely decipher the data from your fields and herds, and turn it into decisions. But you will need to build an "integrated resource management team" to get the precise advice you need for your precise devices.

The challenge: harness the power of data, of information, of knowledge, and of wisdom, to empower you to meet the future. But remember, by the time everyone knows it's time to adapt a new technology--the innovators are already doing something else. Lead, follow, or get out of the way.

What do you think? Write ag/INNOVATOR at PO Box 1, Linn Grove, Iowa 51033 email [inovator@agriculture.com](mailto:inovator@agriculture.com) or at <http://www.agriculture.com>