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## ***Topics in Precision Agriculture***

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### **Site-Specific Farming on Small Farms**

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The terms *precision agriculture* and *site-specific farming* often trigger thoughts of expensive equipment such as satellite based global positioning systems, yield monitors, and variable rate applicators. This notion leads people to conclude that precision agriculture is for larger farms only. This is simply not true. Site-specific farming refers to an approach, not the technologies that make it easier. Fortunately there are some very low-tech, inexpensive methods that may make site-specific management possible and profitable on small farms.

The key to maximizing farm profits is to increase the quantity or quality of a given product, all while minimizing inputs and environmental costs. These adjustments are often made at the enterprise level; however, there are opportunities for even greater profits if they are made site-specifically. A site may be a stick-row of tobacco, an area of a soybean field that drowns out most years, or even a particular cow and her calf. Good decisions can not be made without good information. The key to site-specific management decisions is tracking what happens on the site, particularly inputs and outputs. Relatively high-tech solutions (e.g., yield mapping) may be necessary for large farms. For smaller farms, technology as simple as pencil and paper may be adequate for site-specific records.

For example, a producer might have a half-acre field of peppers where they have simply tracked the yields throughout the field. In doing so, they identify particular zones in their field

that produce more than other areas. Taking it a step further, the producer may take separate soil samples in those zones. Often the results will come back that the high producing zones are relatively low in fertility, while the low yielding zones are relatively high in fertility. This may seem opposite. However, the high yielding areas have been removing more nutrients than the low yielding areas, all while receiving the same amount of fertilizer based on a field average. The producer may take this and change the rate of fertilizer that they apply in those particular zones. This may save fertilizer costs and perhaps increase yields further in those high producing zones.

This may seem like an oversimplification, but using site-specific farming methods allows a farmer to be more precise by employing techniques and technologies that are as simple or as complex as they deem workable.

When our forefathers were farming with horses and a single bottom plow, they knew much about the sites they farmed. Management was prescriptively applied to only those portions of the field that would be more productive as a result. Today's information age has enabled us to keep track of this information in a much more efficient manner.

For more information about Site-Specific Farming, see the University of Kentucky's Precision Agriculture website at: <http://www.bae.uky.edu/~precag/> or contact your county Cooperative Extension Service for more details. Educational programs of the Kentucky Cooperative Extension Service serve all people regardless of race, color, age, sex, religion, disability, or national origin.