

Developments in Precision Agriculture

Precision agriculture is changing the way farmers all over the world do business. It seems to be moving at lightning speed, too, with exciting new updates every year. Let's take a closer look at precision agriculture and the recent developments in this industry.

What is Precision Agriculture?

Precision agriculture means the use of new technologies to increase crop yields and profits while [reducing the amount of "traditional inputs"](#) needed to grow crops – meaning land, water, fertilizer, herbicides, and insecticides. Essentially, precision agriculture allows farmers to do more with less.

In addition to tech, research and observation are a major part of this field. Researchers collect data on weather patterns, soil temperature, humidity, growth, and more. This data is then utilized to the farmer's and the crop's best interests. For example, crops may be [rotated to improve diversity](#), or irrigation rates may be closely monitored to prevent salt accumulation.

Precision Agriculture Examples

Just last year, the [first smart drones](#) for precision agriculture use took flight. A team of researchers flying the drones is able to detect vital information about crops below, including spatial variability for plant growth and soil moisture. This particular study examined how well the crop responded to different amounts of irrigation – an objective made much easier when flying a sensor-equipped smart drone. This example of precision agriculture yielded better irrigation strategies for farmers of all different crops, saving them water and boosting profitability.

A second application of precision agriculture is soil moisture sensors. These sensors help cotton farmers better understand [what's going on beneath the soil surface](#). The technology behind them continues to evolve every year, and the number of consultants using the sensors is on the rise. They monitor everything from the level of soil moisture in your metaphorical "tank," to root activity by depth. These may sound like abstract ideas, but they have a tangible impact on crop yield and thus profitability. Soil moisture sensors allow for better monitoring and a more targeted response.

Precision Agriculture Technology

Precision agriculture goes hand-in-hand with ag robotics, the application of robots in

agriculture, often used to automate slow, repetitive tasks for farmers. We actually [wrote about this in more detail](#) last month on our blog. The two concepts are separate but highly related: Ag robotics enables further advancements in precision agriculture, and both are rooted in technology.

Much of the technology being developed for precision agriculture and ag robotics is autonomous. There are now [autonomous grain carts](#) and autonomous “agbots” that handle harvesting, picking, and weed control. These technologies enable farmers to spend less time on monotonous labor, and more time to focus on the overall operation of the farm. Some fear that the rise of AI and automation will mean a steep decline in farm jobs; however, agriculture experts insist that these fears are blown out of proportion. In fact, precision agriculture may cause a shift in job roles, with farm hands switching their focus from manual labor to things like technology maintenance and monitoring, but it’s not likely to cause a major loss of jobs.

Precision Ag for a Better Future

The advent of advanced farming technologies should make us hopeful that the cotton industry will continue to use precision agriculture innovations to achieve multiple goals, both business-related and with regard to the environment. These innovations, which continue to become mainstream on farms of virtually any size, will increase cotton production efficiency and reduce the environmental impact of farming, helping the industry execute successfully on its 10-year plan by 2025.