

TOP 5 Ag Tech and the Environment

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It seems ironic that the word “technology” is used so casually it has become somewhat ordinary. But, often, that is the case. Imagine the term in your head and you will probably think of everything from cell phones and digital watches to flying cars and self-driving tractors. In short, technology means something different to nearly everyone.

The same goes for agricultural technology, which commonly refers to physical farm equipment, but in reality comprises a wide array of products and solutions, from seed improvements, animal health topics and aerial drones, to site survey techniques and pest control. But recent EPA news has provided an entirely new incentive to modern technical development on the farm.

In a national water quality survey conducted by the EPA, agricultural activity was identified as a source of pollution for more than 40 percent of stream, river and lake water.* The term “agricultural operations” includes several industries, such as animal husbandry, forestry, crop cultivation and biomass production for carbon-neutral energy production. If they aren’t careful, runoff from these operations can leach excess nutrients, such as ammonia, phosphorous and nitrogen into the water. These nutrients then find their way into freshwater sources, where they can trigger destructive plant growth known as algae bloom, which kills fish and creates dead spots in lakes and oceans.

So it’s important to understand the technology available to help reduce pollution in modern agricultural operations. These include the following:

1

REMOTE MANAGEMENT TOOLS

This is a combination of hardware and software to remotely monitor and control center pivots and linears from a smart phone, tablet or computer. By having remote access to full control panel functionality in the palms of their hands, growers can avoid routine trips to their equipment, thus reducing

fuel consumption and carbon emissions. (Not to mention saving money for themselves and time to spend with their families.)

3

VRI-IS (INDIVIDUAL SPRINKLER CONTROL)

Managing irrigation rate down to the individual sprinkler provides the most precise sprinkler control available, affording the ability to establish “no-spray zones” near rivers and streams or in livestock areas.

2

IRRIGATION SCHEDULING

Making informed, data-driven decisions to apply water in the proper amount at the right time of year can significantly reduce the potential for pollution.

For example, the intuitive Valley Scheduling dashboard keeps data about soil, crop type, stage of development and automatically updated weather information at growers’ fingertips. This

proven technology helps them minimize the usage of valuable resources such as water and crop protection products like fertilizer and pesticides for overall crop health.

4

BUFFER/COVER CROPS

Planting shrubs, trees and grass around fields can help absorb nutrients before they can reach freshwater sources.

Certain grasses and other crops can recycle excess nitrogen and reduce soil erosion to keep nutrients from running off.



AUTONOMOUS CROP MANAGEMENT

This solution from Valley Irrigation and Prospera aims to make sure your center pivot will no

longer be thought of solely as an irrigation machine. Utilizing pivots as the digital data hub, unprecedented visibility can be brought to growers' fields so they can optimize irrigation and progress toward autonomous crop management. Sharing the intelligence between connected field devices, the pivot, and the integration of data science and machine learning allows growers to detect and receive critical information to deliver greater crop precision, resulting in greater returns while using fewer inputs and resources.



Considering the long-term effects of the ag industry on the environment is an important objective. Ultimately, the first goal of ag tech is to feed and clothe the world most effectively. A secondary—but no less important—goal of agricultural technology must become the reduction of impact on our natural ecosystems. Responsible, global manufacturers of agricultural equipment and products should seek to demonstrate their desire to become conscientious, long-term partners to growers by pursuing products that minimize inputs (water, fertilizers and pesticides).

These efforts absolutely have the potential to reduce the impact on our environment while still providing strong economic benefits, such as potentially lowering food production costs. Rest assured, this important consideration will continue to shape immediate product development and impact generations of ag tech companies for years to come.

**Statistics sourced from UN Water, World Commission on Water for the 21st Century, United States Environmental Protection Agency, United Nations Environment Programme and Report Card for America's Infrastructure.*



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