Gothenburg farmer boosts yields, relieves stress with technology.

These days, Tim Schmeeckle pores over crop data so he can increase yields in 2010.

About seven years ago, before he used global positioning satellite (GPS) technology, Schmeeckle relied on what he could see to determine what areas of his corn and soybean fields needed more or less fertilizer, seed or water.

Today, the Gothenburg area farmer has yield maps in hand which are transformed into prescription plans that calculate the amount of inputs for his crops.

“I can lower the rate of fertilizer and seed in the bad areas and increase them in good areas,” he said.

The bottom line?

More profitability.

Schmeeckle is just one of a growing number of agricultural producers who use GPS technology to calculate the actual needs of corn and other crops.

GLOBAL POSITIONING SATELLITE TECHNOLOGY

GPS is a worldwide satellite navigational system formed by 24 satellites orbiting the earth and their corresponding receivers on the earth. The satellites orbit the earth at approximately 12,000 miles above the surface and make two complete orbits every 24 hours.

The GPS satellites continuously transmit digital radio signals that contain data on the satellites location and the exact time to the earth-bound receivers. The satellites are equipped with atomic clocks that are precise to within a billionth of a second.

Based on this information, the receivers know how long it takes for the signal to reach the receiver on earth. As each signal travels at the speed of light, the longer it takes the receiver to get the signal, the farther away the satellite is.

By knowing how far away a satellite is, the receiver knows it is located somewhere on the surface of an imaginary sphere centered at the satellite.

GPS can calculate the longitude and latitude of the receiver—by using three satellites—based on where the three spheres intersect.

By using four satellites, GPS can also determine altitude.

(Source: www.webopedia.com)