

Test-tube farming made viable by Purdue University scientist



IMAGINE your grandfather puttering across the field with a Farmall F-20. Then imagine yourself in a new

tractor that drives itself. This technology gap provides only an inkling of the gap between current methods of studying cells and a brand new method developed by Marshall Porterfield, a Purdue University ag engineer.

He's developed a biochip that measures electrical activity of cells and ob-

tains 60 times more data in one reading. Current technologies often destroy cells under test. This new biochip method doesn't harm cells.

The medical field is giddy because biochips could speed drug development for muscle and nerve disorders, such as epilepsy.

Herculex expanding

Expect to see more seed companies offering Herculex traits soon. DuPont's Pioneer and Dow AgroSciences LLC recently agreed DowAgro could license both Herculex RW Rootworm and Herculex Xtra to other seed companies sooner than originally agreed. Herculex technology was developed jointly by the two companies.

Why is it a milestone in farming? "Let's say you're interested in developing corn varieties that need less fertilizer," Porterfield says. "If you had a library of genes associated with high nitrogen-use efficiency, thus making the plant need less nitrogen, you could transform a group of [corn] cells with these genes, then screen each cell to determine the most efficient.

"Then you could raise the one that needed the least fertilizer, rather than putting a lot of different genes into hundreds of plants and waiting for them to grow," he says.

The technical name for the chip is "cell electrophysiology lab-on-a-chip." Remember, you read it here first!

Robots on mission

If you think super chips monitoring cells is far out, wait until you read what Lei Tian at the University of Illinois is doing. Maybe he didn't set out to create a scene straight out of Star Wars, but he did. He's developing individual solar-powered robots that move between rows on a search-and-destroy mission.

Each one is 28 inches tall, equipped with its own computer. It can distinguish between weeds and plants. Once it finds a weed, it cuts it, then sprays herbicide. "It's extremely effective," Tian says. "It applies herbicide directly to the plant, instead of broadcasting uniform rates across a field." That means less chemical use and no chemical drift.

Solar power eliminates recharging batteries every two hours.

Meth blocker

Back in the real world, here's a crime-fighting innovation. Iowa State University researchers found that calcium nitrate is an effective methamphetamine inhibitor. Added in the right proportions to an anhydrous nurse tank, it renders the anhydrous ineffective for would-be meth makers.

Calcium nitrate is a fertilizer and won't harm the environment or farmers' equipment.

Dow Agro bags recognition

Dow AgroSciences now has a name for its revolutionary system of producing vaccines through plant cells. It's called Concert Plant-Cell-Produced vaccines. And it also earned an impressive recognition. Concert helped Dow AgroSciences become one of three finalists in the first-ever Animal Pharm Industry Excellence Awards.

Dow Agro registered the world's first plant-made vaccine in January 2006.

GPS implement steering

Now you can rest assured that both your autosteer-guided tractor and the implement following stay on the same path. Trimble introduces AgGPS Implement Steering to keep implements on track, even on strong slopes. A GPS receiver mounts directly on the implement.

This information provided by Asgrow.®

INDIANA FIELD REPORT

Tipton County Farmer Likes Asgrow® Selection, Consistency



MIKE CLINE | Tipton County, IN

CROPS and LIVESTOCK: 3,000 acres corn, soybeans, seed corn and hogs

When it's time to harvest soybeans, Tipton County, Indiana, farmer Mike Cline doesn't worry about the unexpected.

"In the 11 years we've raised Asgrow®, we haven't had any surprises," says Cline. "Before, there were times when I'd have high hopes for a new variety, then be disappointed. Asgrow has been a good

"We don't have to look to other companies to get the varieties we want because Asgrow has such a wide selection."

bean for us, with consistently high yields, good standability and good disease resistance. That's why we went with

Asgrow beans, and that's why we're going to stick with them. This year we're 100 percent Asgrow."

Among the characteristics that Cline likes is the number of products.

"We don't have to look to other companies to get the varieties we want because Asgrow has such a wide selection," states Cline.

Cline tried Asgrow 3521 for the first time this year. This is a new Vistive™ low-linolenic soybean being grown on about 500,000 acres this season in parts of the Midwest, including Indiana. It's a new market opportunity for farmers planting Vistive to help meet growing consumer demand for healthier diets by reducing or eliminating unhealthy trans fats.

"They're looking really good," says Cline. "I know from the research that

they're a really good-yielding bean that produces a more healthful oil, which is what the marketplace wants. We also get a premium for them. Next year we'll probably grow even more Vistive."

Cline is also very pleased with some other aspects of raising Asgrow soybeans. "When you see the research that Monsanto has put into Asgrow beans, it's pretty impressive. You know they're not going to bring out a 'flop' - and those things do happen in the seed industry. I really like Monsanto and the people I deal with. There are a lot of folks in the company who will take the time to help you. It's nice to have people you can call."