



Dow AgroSciences works diligently to make farming more efficient. Shown are roots treated with SmartStax™ (left), which protects crops from pests, compared to a crop treated with conventional corn hybrid protection (right).



# GROWING TOWARD THE FUTURE

## DOW AGROSCIENCES WORKING FOR HEALTHIER WORLD

By Matt L. Ottinger

**H**erbicides. Fungicides. Pest control. Cooking oil. It easily could be argued that Dow AgroSciences in Indianapolis is one of Indiana's most diversified and impactful businesses. "I've never seen our portfolio this full of good chemical solutions in my 20 years here," beams Mark Zettler, global research and development leader.

Dow prides itself on producing a great deal of intellectual property out of a relatively lean organization. And since the company boasts sales of \$4.5 billion, one would be hard pressed to question its productivity.

In March, Dow AgroSciences announced a multi-year expansion of its headquarters, slated to feature over \$340 million in investment and 550 new jobs (in addition to its 1,200 current Indianapolis employees). Additionally, that expansion will include a 175,000-square-foot research and development building, as well as a 14,000-square-foot greenhouse.

While growth abounds, Dow plays on a very competitive field. In the agrochemical and biotechnology worlds, the game is ever-changing, and it takes money to make money.

"It costs over \$250 million per molecule (or active ingredient) to bring a product to market," explains Kenda Resler-Friend, corporate communications leader.

### No pests allowed

When it comes to users of those products, Zettler explains that Dow's customers are quite diversified – although food growers are a key segment of its client base.

"We sell into different markets in 130 countries," he notes. "Our customers are very different and broad-based."

When asked what the main concerns are facing today's food growers, he answers, "Their key challenge is trying to gain yield on a limited amount of acres."

In order to realize maximum output, crops must grow efficiently. A prime deterrent in the process remains any influx of insects and pests. That is why Dow's new product, SmartStax™, is regarded as a "game changer" in the agricultural world by the company's staff. The repellent is actually a hybrid product made possible by a cross-licensing agreement, as it combines Dow's HERCULEX® insect protection with

Monsanto's YieldGard™. Featuring what scientists call "multiple modes of action," SmartStax is designed to prevent corn pests (such as corn borers, rootworms and cutworms) from building a resistance to the product.

Zettler adds that green chemistry has been a driving impetus in Dow's efforts. The notion of environmentally friendly science is hardly new, though it has been enhanced in recent years in the public consciousness. The company's natural fermentation techniques have garnered much favor nationally.

"We have the best natural products program in the industry," Zettler surmises.

He adds the company's Spinetoram insecticide has received four of the United States' green chemistry awards because "it's easy on the environment and easy on non-target pests."

One of those awards was the Michigan Green Chemistry Governor's Award in 2009. Following the award, Dow AgroScience's global biology team leader Jim Dripps remarked in a press release, "This type of innovation is essential as we try to increase agriculture's productivity in order to help feed growing world population. Our customers in the apple market told us that they needed something effective against their No. 1 enemy – the codling moth – in a way that left a softer footprint on the environment than the choices they currently had."

### Weeding out big troublemakers

Dow's termite colonization system Sentricon® also works to parlay environmentally friendly technology into a not-so-friendly greeting. Dow points out that over five million American homes develop some type of termite problem each year, causing \$5 billion in damage.

"Sentricon has been used in over two million structures – including the White House," Zettler asserts. The product is also used in the Statue of Liberty among other national treasures, according to the product's web site.

As opposed to saturating an area with a chemical solution, Sentricon is strategically placed as a bait to limit the amount of active ingredient in the environment. The product has earned some notable environmental distinctions, including being the only termite control product to win the Presidential Green Chemistry



**Global research and development leader Mark Zettler explains Dow's chemical solutions portfolio is as vast as he's seen it in his 20 years with the company.**

Challenge Award, a prestigious honor given to recipients who show technical innovation in producing an eco-friendly product.

What's more, Dow has a new insecticide, Sulfoxaflor, slated to hit the market in 2012.

Also scheduled for arrival that year is Dow's new DHT (Dow Herbicide Tolerance) weed control for corn. A DHT launch for soybeans and cotton is scheduled for 2013. The product is revolutionary because it allows growers to use an additional herbicide over their key crops and enables them to destroy hard-to-kill weeds, such as broadleaf varieties. These weeds had built up resistance due to the frequent use of glyphosate herbicides, and this is designed to overcome them.

"Mother Nature is very clever," Resler-Friend notes. "We spend a lot of time trying to outsmart weeds and fungus."

### Trimming the fat

Speaking with Zettler leaves one with the impression his plate is quite full. In addition to all the efforts with crop-related



**A graphic rendering shows Dow AgroScience's upcoming expansion, which is expected to create 550 jobs by the end of the multi-year project.**



**Special guests from across Indiana gathered in Dow's atrium on March 4 as the company announced the upcoming expansion of its headquarters and staff.**

products, Dow associates are working diligently to keep Americans' plates full with healthier dishes. Dow's healthy oils initiative strives to bring Omega-9 food oils to major food producers and restaurants via canola and sunflower oils. A small sampling of partners onboard includes Red Lobster, Taco Bell and many universities across the country.

"You can't change what people eat," Zettler offers, "but you can make it healthier."

The oil is derived from NEXERA™ seeds – a type of naturally bred seed Dow developed that features exceptional stability without hydrogenation. Additionally, the seeds help

produce high returns per acre.

Zettler explains that Dow has helped restaurants "remove half a billion pounds of bad fats" from the American diet. He qualifies that the process includes removing trans fats and replacing them with monosaturated fats, thereby aiding cardiovascular health and reducing obesity.

These efforts are timely, as the nation's largest city, New York, voted to ban artificial trans fats in restaurants in 2006, with Boston passing a similar measure in 2008.

"We've done many taste studies to make sure we're not impacting taste and sensory perception," Zettler clarifies. "These big food companies definitely do not want the food to taste any differently."

Aside from the health benefits, Omega-9 oils have a 50% longer "fry life" than traditional frying oils, so restaurants create less oil waste.

All told, Dow AgroSciences appears ready for a future in which food growing efficiency will be at a premium as the world's population is estimated to reach nine billion by 2050.

Its innovation and technology are already in high demand. "We had our best year in 2008," Resler-Friend says. "Not many companies can say that."

#### INFORMATION LINK

**Resources:** Kenda Resler-Friend and Mark Zettler, Dow AgroSciences, at [www.dowagro.com](http://www.dowagro.com)



## Turning Science into Solutions

At Dow AgroSciences, we never stop moving forward. Each breakthrough is celebrated by working on another. We are constantly turning science into the innovative solutions of tomorrow. Learn more about our solutions at [www.dowagro.com](http://www.dowagro.com).

