Roads Lead Toward Growth

Speakers see seed continuing to steer direction of economic innovation

ichael Gumina sees the continuing changes to the seed production industry challenging those leading it to think about why they stay involved in the business.

Economic stress has been one of the factors leading to consolidation within the industry, forcing decisions that might not otherwise be made, said Gumina, CEO, RiceTec Ag, Houston, TX. With product development cycles in the seed production industry taking 7-10 years, Gumina said in a lot of ways when you're in the seed industry, you have to have faith.

"The money you're putting in today isn't going to show up for a decade, which is something that requires patience," Gumina said.

Gumina was one of the speakers in April during the 2017 Leroy & Barbara Everson Symposium on Next Generation Agriculture hosted by the Seed Science Center at Iowa State University, Ames, discussing how the seed industry has evolved and what it might look like in the future.

Roads to Development

Seeds have long been at the forefront of technological innovation dating



Michael Gumina

back to the creation of the first marketplaces as something needed to be done with a surplus of products, said Kenneth Quinn, The World Food Prize Foundation president, Des Moines, IA, and former

United States ambassador to Cambodia.

Weights and numbers were developed to calculate the surpluses and notes about wheat and barley were written on clay tablets, Quinn said.



World Food Prize Foundation President Kenneth Quinn spoke in April at Iowa State University, Ames, during the Leroy & Barbara Everson Symposium.

"That's what seed and agriculture did," Quinn said. "Seed is the story of civilization. It's the thread of history through everything that has happened."

Quinn said roads were needed to create pathways for trade, a benefit that has remained in more recent times. The connection roads provided has helped farmers bring products to market, further solidifying the need for seeds.

"Seeds are wondrous," said Manjit Misra, the Iowa State University Seed Science Center director. "They come in all sizes, shapes, textures, color, luster. They grow in the sun, sleep in the night, and even under the snow they dream of what they will become next spring. Seeds are not just the beginning of agriculture. They are also the renewal of all life of civilization."

Advances in Technology

The seed industry has developed with advances in technology, Gumina said. Yet, as recently as the 1980s, he said it was a very local, low regulated business.

"Over the years, it has become a highly regulated business," Gumina said. "The whole mix can be too much for some companies to stay in and they exit the business." High levels of productivity allowed companies to make big gains in the 1990s. By the early 2000s, innovations in genomics/bioinformatics allowed a deeper look into the plant and an understanding of its genome. As a result of the greater understanding of the plant structure, advancements in breeding were made, Gumina said.

"This helped us to be more efficient to drive basic genetic gain," Gumina said. "This was a big opportunity and a lot of companies capitalized on it."

It wasn't long after that consolidation started within the industry. In 2000, Gumina said independent companies made up 38% of the market share for corn. Today, that figure has dropped to 17%, he said.

In 1900, Gumina said 300 retail companies sold corn and soybeans. Today, he said it's down to 85 companies.

"It's a big change in the overall dynamics of the industry," Gumina said.



Manjit Misra

"Independents are getting smaller and less influential. There's just no doubt about that."

Impact of Consolidation

Leaders of seed production companies questioned what the future might hold with the rapid rate of consolidation.

Gro Alliance, Cuba City, WI, had just decided to exit the retail seed business in 2003-2004 as the trend of multinational businesses purchasing independent seed companies started about a year later, said Gro Alliance President Jim Schweigert.

"When you exit the retail to focus on contract production for the independent market, and about a year later, all inde-

pendent companies start getting bought up, we kind of question the decision," Schweigert said. "But what we didn't know was how independent companies would be able to respond in the face of consolidation."

The period of consolidation lasted 5-6 years, Schweigert said. Through it, he says companies that weren't acquired did incredibly well. That meant predictions



Jim Schweigert

of independent companies losing market share didn't fully materialize as they worked hard to take advantage of new opportunities, said Schweigert.

'At least two dozen new seed companies are

selling corn they didn't sell corn in 2005, with several selling more than 50,000 bags," Schweigert said.

Now the question is becoming what the impact of mega mergers will be once those deals are completed. New traits and licenses can be developed with a reshuffling of the industry with different partnerships forming, Schweigert said.

One area of possible focus that larger multinational companies are unlikely to fully pursue is the organic market, which Schweigert said is still relatively small at about 100,000 acres of organic seed corn.

"It's not a huge market, but with high margins, it can grow rapidly," said Schweigert. "There will be market share opportunity for independent companies that I think they'll more quickly pick up."

Challenges and Opportunities

Population growth continues to push demand for crops to be grown, Gumina said. Research will be as important as ever with about \$3 billion per year invested, he said.

The cost structure of being able to maintain a return on investment will be difficult to maintain. Monsanto spent \$9.6 billion on research in six years, according to reports from 2011-2016, Gumina said.

The potential challenges facing the seed industry with mega mergers looming are less innovation, less access to technol-

ogy, increased market power for the new combinations, higher prices, and unique systems that are not easily replicated such as chemistry and biology combinations.

However, Gumina cautioned prices can't be raised more than farmers can afford to pay.

Opportunities that can be created as a result of the possible mega deals are talent will become available, start-ups will emerge, spin-offs will occur as a results of Department of Justice processes, licensing, partnering and distribution will be required for the new companies to grow and outsourcing of assets and services will be used. Relationships will still matter, Gumina said.

In order to take advantage of the opportunities, Quinn said innovation will be needed.

"It will not happen without innovation," Quinn said. "Innovation is what it's all about."



