Enhance The Competitiveness Of Chinese Seed Industry By Technology Innovations

International Food and Agribusiness Management Association World Forum & Symposium
Shanghai

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June 11-14, 2012
Crop production increased continuously 8-year in a row

- Better new varieties- corn and rice
- Improved irrigation system
- Better pesticides
- Government subsidizes (140 billion RMB) for farmers
- Corn acreage increase at the cost of soybean
Challenge in China Agriculture

- Approximate 10% of reduction in arable land due to urbanization in past decade
- Productivity decreasing: lack of farm labor
- Income difference cross regions
- Environmental impacts
Challenge for Food Security

- Not possible to achieve self-sufficient for food under the current limited arable land and water resource
  - China imported 55 million ton soybean, 8 million ton plant oil, and 3 million ton cotton, which together is equivalent to 60 million ha of the arable land
  - Only 50% self-supply for edible oil & 60% for cotton

- By 2030, population to be 1.45 billion, which demands 1.4 billion ton of food, or more double of the current productivity
Government Promotes and Nurtures Modern Seed Industry

- As one of national strategic and fundamental core sectors
- Highly promoting agricultural sustainable growth to ensure national food security
- Mainly relying on independent innovation, fully utilization of crop germplasm
- Enhancing policy & financial support, thus further empowering technology innovation and strengthening enterprise competition capability
- By 2020, to develop numerous market demanded breakthrough new crop varieties

I strongly advocate making great efforts to pursue transgenic engineering. The recent food shortages around the world have further strengthened my belief in developing such technologies.

--《科学》期刊对温总理的专访, 2008 Science journal interview with Premier Wen
First green revolution (fertilizer, chemicals, irrigation and hybrid) had doubled yield for the past 50 years

To further double crop yield potential, a breakthrough technology is essential

Biotechnology is a key

- Genome decoding
- Molecular Maker Technology: drought and agronomic traits
  - quick evaluation for germplasm
  - mapping and enrichment of better endogenous genes
  - speeding up new variety breeding
- Double haploid technology: fast fixing heterosis
- Transgenic technology: utilization of exogenous genes
  - Input trait: insect control & herbicide
  - Output trait: health nutrient ω3/ DHA
How DBN Helps Chinese Agriculture & Farmers

- One of few domestic companies dedicated to provide solution to agricultural productivity
- Over 200 million RMB investment annually in agricultural technology innovation
- Over 5 million farmers receiving technical training annually to use modern technologies or new products
- Awarded a dozen scientists for science and technology achievement in agricultural researches every other year
Mission: Be a leading Agri. Biotech company in innovation and product development in China

Focus (R&D Investment: 2 billion RMB)
- Collection & evaluation of corn and rice germplasm
- New breeding system
- Seed production and processing
- Biotechnology
  - Molecular marker platform
  - Biotech product development: Corn, Soybean, Rice, and Cotton
Corn Product Development by 2020

- Insect controls
- Herbicide tolerance
- Detasseling free
- Drought tolerance
- Enhanced Yield
- Better nutrition
- ω3/ DHA
Cooperate & Win