



For food, farmers & future

What is ABLE-AG?

The Association of Biotech Led Enterprises - Agriculture Group (ABLE-AG) is a body of leading agriculture biotech companies in India that aims to generate a symbiotic interface between the Government, industry, farmers, academic and research institutions, and domestic, international investors and civil societies. ABLE-AG also aims at accelerating the pace of plant biotechnology in India by enabling strategic alliances between researchers, government agencies, farmers and the global biotech industry



Mission

To contribute towards sustainable and safe food production by facilitating best biotechnology practices in agriculture, as well as proactively engage with farmers, consumers, scientists, civil society, media and governments for facilitating meaningful and transparent dialogues to advocate the need and benefits of agri biotech. We are also committed at creating an enabling environment in India for the development of new and superior biotech traits that can enhance the productivity of Indian agriculture

Member companies



Goals

- Offer benefits of modern technology to Indian farmers & consumers
- Undertake fair and equitable policy advocacy
- Promote Public-Private Partnerships (PPP)
- Promote innovation and technology dissemination
- Reach out to public and propagate values and benefits of agriculture biotechnology

Did You Know?

In India, the increase from 50,000 hectares in 2002 (when Bt cotton was first commercialized) to 8.4 million hectares in 2009 represents an unprecedented 168-fold increase in Biotech crop production in eight years



Why Agri Biotech

We live in critical times. Of the many challenges facing us, food security is an important one.

Food & Agriculture Organization of the United Nations (FAO) estimated in 2010 that out of the 925 millions undernourished people, a whopping 578 millions lived in Asia & the Pacific. There is immediate need to address this peril else we shall be gravitating towards an unhappy world, for as Nobel laureate Norman Borloug famously said, "The first essential component of social justice is adequate food for all mankind."



With world population likely to hit 9 billion by 2050, pressure on land and depleting water tables, enhancing yields are the only way out. FAO has a prescription: "...while agriculture will be forced to compete for land and water with sprawling urban settlements, it will also be required to serve on other major fronts... They will need new technologies to grow more from less land, with fewer hands."

Government of India estimates we shall be 1.3 billion strong by 2017 by when we may be short of 14 metric tons of food grains. Enhancing productivity is essential. Thanks to humankind's constant march towards evolution, we have biotechnology which has revolutionized food, fibre, fuel and drugs. Agri-biotech is our answer to address the food deficit challenge.

According to Department of Biotechnology, Government of India, "India would need to increase the food production to 250 million

tonnes by the 2020. Therefore, there is a need for critical appraisal of the post-green revolution technology to draw up a balance sheet so that strategies are evolved for achieving sustainable agriculture."

Along with information technology, biotechnology is said to be mankind's two biggest inventions in the 20th Century - while the first redefined the way we worked, lived and communicated, the latter has shown us better, and brighter ways of healing the world, fuelling it, and feeding.

HEALING THE WORLD: Vaccines developed using biotechnology today prevents approximately 10.5 million cases of infectious illnesses each year. Worldwide, 2.5 million precious lives of children are saved with immunization. Biotech researchers continue to develop innovative vaccines against infectious diseases.

FEEDING THE WORLD: Fifty percent of the world's poorest people are small and

resource-poor farmers, and another 20% are the rural landless completely dependent on agriculture for their livelihoods. Agri-biotech by increasing income of small and resource-poor farmers contributes directly to the poverty alleviation of a large majority of the world's poorest people. To-date, biotech cotton in countries such as China, India, Pakistan, Myanmar, Philippines, Burkina Faso and South Africa have already made a significant contribution to the income of 14.4 million poor farmers in 2010.

FUELLING THE WORLD: Global energy demand is projected to grow 50 percent by 2025 while we also face a dwindling supply of fossil fuels and the looming threat of climate change. Industrial biotechnology unlocks the many benefits of using biomass for energy and biofuels, which help protect the environment and combat global climate change.



"Developments in biotechnology present us the prospect of greatly improving yields in our major crops by increasing resistance to pests and also to moisture stress. Bt Cotton has been well accepted in the country and has made a great difference to the production of cotton." - DR. MANMOHAN SINGH, HON'BLE PRIME MINISTER OF INDIA, INAUGURAL SPEECH AT THE INDIAN SCIENCE CONGRESS IN TRIVANDRUM ON JAN 3, 2010



"Too many opponents of biotechnology too easily dismiss the many safety and regulatory checks that govern whether a new agriculture product is brought to the market as worthless. Unfortunately, they willfully choose to emphasize highly unlikely potential risks." - DR NORMAN BORLAUG, FATHER OF THE GREEN REVOLUTION AND NOBEL LAUREATE



"With limited natural resources available to improve agricultural production, genetically engineered crops developed by applying biotechnological tools are being looked upon as a promising alternative which can benefit farmers, manufacturers, as well as consumers." - SHRI SHARAD PAWAR, UNION AGRICULTURE MINISTER OF INDIA, NATIONAL SEEDS ASSOCIATION OF INDIA (NSAI) IN NEW DELHI ON AUG 9, 2008



"In just 15 years after commercialization, accumulated biotech crops exceeded 1 billion hectares in 2010, a milestone that signifies biotech crops are here to stay. Biotech crops have played a perhaps underappreciated role in progress toward attainment of the 2015 Millennium Development Goals and their impact by 2015 will be more universally recognized." - CLIVE JAMES, FOUNDER AND CHAIR, ISAAA BOARD OF DIRECTORS, THE ANNUAL REPORT RELEASED BY ISAAA (INTERNATIONAL SERVICE FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS) ON FEB 22 2011

Benefits of Biotech Crops

TO CONSUMERS

- Better quality food & fibre products
- Better food safety standards
- Improved nutritional value of foods
- Increased food security for rural & urban poor

TO FARMERS

- Improved yields, quality crop & tolerance to environmental stress factors, resulting in increased productivity and profitability - Economic gains at the farm level of US\$65 billion were generated globally by biotech crops during the period 1996 to 2009
- Increased choice & flexibility in crops & cropping systems
- Reduced manual labor: significant for India / Asia with small, non-mechanized farmers & decreasing rural and farm manpower

TO THE NATIONS

- Developing countries increasingly opting for biotech crops as they enhance yields and profitability: In 2008, in India 5 million farmers planted 7.6 million hectares of Bt cotton, equivalent to 80% of the 9.4 million hectare national cotton crop
- Biotech crops meets the growing food & fibre needs of large populations
- Strengthens rural economy & make farmers competitive in a world of globalized trade: India gained US\$1.8 billion from Bt cotton in 2008 alone and reduced insecticide use by half
- Strengthens national agricultural Research & Development services: Public and private sector investments in crop biotechnology has gone up to the tune of US \$ 500 million per year

TO THE ENVIRONMENT

- Conserve biodiversity: Approximately 13 million hectares of biodiversity including rich tropical forests are lost in developing countries annually. If the 229 million tons of additional food, feed and fiber were not produced by biotech crops during 1996 to 2009, an additional 75 million hectares of conventional crops would have been required to produce the same tonnage
- Reduced pesticide use & target specific pests
- Helping mitigate climate change and reducing greenhouse gases: Biotech crops reduced CO₂ by 14.4 billion kg between 1996 and 2009 which is equivalent to removing 7 million cars from the road
- Low soil erosion due to lesser ploughing of the land
- Supports farming systems such as integrated water, pest and weed management which improve agricultural sustainability

Did You Know?

- Number of countries planting biotech crops soared to a record 29 in 2010 of which 19 were developing countries. Developing countries grew 48% of global biotech crops, faster than industrial countries
- Farmers cultivating biotech crops have seen substantial net economic benefits at the farm level amounting to \$10.8 billion in 2009 and \$64.7 billion between 1996-2004, as per PG Economics Annual Global Impact Study
 - Since 1996, biotech traits have added 83.5 million tonnes and 130.5 million tonnes respectively to global production of soybeans and corn

For more information on Biotech Crops:

www.croplifeasia.org/
www.isaaa.org/

Safety

- Agri biotech products are studied much more extensively than any other plant product in the world
- UN WHO, FAO, EFSA, Royal Academy of Sciences, National Academy of Sciences, French Academy of Medicine, British Medical Association, 25 Nobel laureates (incl. Norman Borlaug) all concluded that Bt crops are as safe as conventional crops
- 59 countries have granted regulatory approvals for biotech crops for import for food and feed use and for release into the environment since 1996 incl. USA, Japan, Canada, Mexico, Australia, South Korea, the Philippines, New Zealand, the European Union, and China