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Dealing with high hopes and slow progress

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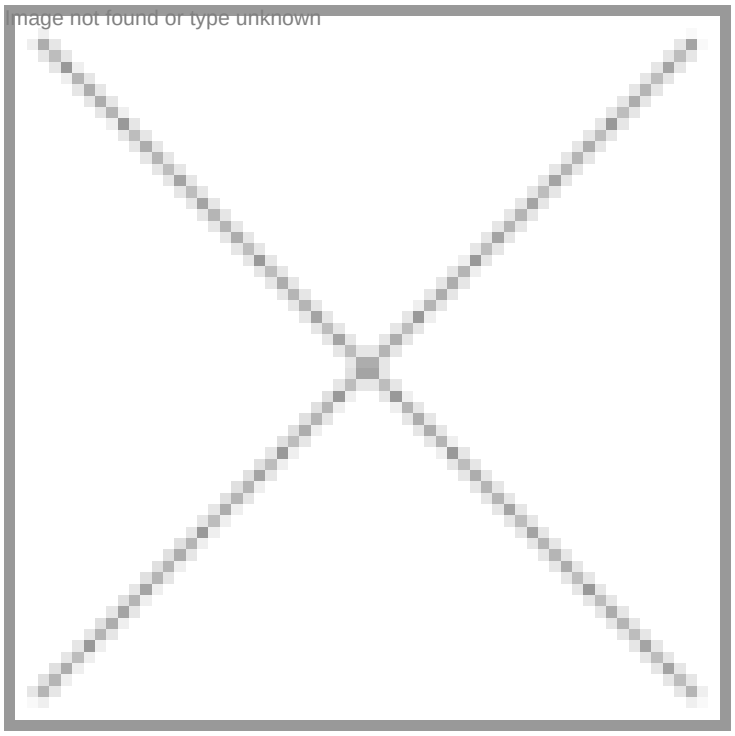

Image not found or type unknown	**Mr Sushil Karwa**, MD, Krishidhan Seeds Group Mr Sushil Karwa is a trained commerce and management professional and has been the managing director of Krishidhan for 14 years. Mr Karwa has agribusiness experience of over two decades in corporate development affairs, product placement and agri-biotech product commercialization in India.	Image not found or type unknown	**Dr Anup Karwa**, Director-life sciences, Krishidhan Seeds Group Dr Anup Karwa is a bio-entrepreneur and one of the founders of Krishidhan Seeds. He did his master's in molecular genetics from the University of Leicester, UK, and pursued PhD in plant molecular biology at Dusseldorf University, Germany.

The success of Bt cotton has ignited the imagination of both farmers and the industry in India and has become the focus of growth and development of the industry. While planting of Bt cotton in over 90 percent of the area under cotton cultivation and introduction of close to 1,000 hybrids in almost every micro-agri zone has made farmers happy, it has also thrown up many challenges for the industry.

Initially, the introduction of a biotech crop in the form of Bt cotton triggered mixed feelings of anxiety and hope among farmers. The cotton crop, which was and continues to be major economic sustenance for poor farmers in rain-fed zones, was getting seriously affected by the recurrent onset of bollworm infestation. This forced the farmers to shift to alternative but less remunerative crops and caused severe economic hardships for them. The shift towards more toxic insecticides also did not

provide any relief, but compounded their misery in the form of serious health problems.

The success and its consequences

The success of Bt cotton was very timely and led to faster adoption of it by farmers. Consequently, the farming sector reported better economic growth without compromising on food security. It has made farmers more technology conscious and ready for new products. Often, during our interactions, farmers ask about new products.

Cities in India are growing at an unprecedented rate and are offering lucrative employment opportunities to rural laborers. This is putting severe pressure on the availability of farm labor, which is forcing farmers to go for labor-saving technology, like mechanization and chemical weed control, instead of using conventional farm labor. This warrants that the crops too be tolerant to such chemicals. We are also looking forward to the introduction of herbicide resistance in several crops, so that farm productivity does not suffer due to labor shortage.

Another consequence of the success of Bt cotton has been that farmers have started adopting new varieties and hybrids and the rate of seed replacement in other crops has also improved giving the industry an avenue for growth. It has created a win-win situation for both farmers and the industry.

At present, the seed industry in India is worth approximately ₹ 8,000 crore and is steadily growing at the compound annual growth rate of 10-to-12 percent. Open pollinated (non-hybrid) seeds are being replaced by hybrids and these are getting value-added with genetically modified organism (GMO), for example Bt cotton. This has had a tremendous positive impact on productivity and exports.

The private sector dominates the seed business. There is 20 percent business through public sector (notified seeds) and another 20-to-25 percent through multinational companies (MNCs) that are interested only in high-value hybrid seeds.

Now, India has become a target for the MNCs as the world seed industry is growing at the rate of 4.3 percent, whereas the seed industry in India is growing at the rate of 10 to 12 percent through diversified crops. Local seed companies in India and small regional players contribute 55-to -60 percent to the seed industry in India.

Innovation is the way forward

It is almost imperative that the seed industry invests in R&D. The product shelf-life, which was normally 10-to-12 years (notified or conventional hybrid), is now seven-to-eight years because of high expectations of farmers. In the initial two years, the companies promote and establish the product and, if it performs well, it can do voluminous business in the next four-to-five years. By that time, farmer's needs change or better substitutes become available. Thus, R&D cost is continuous and very high.

Introduction of new biotech crops that would address problems like resistance to pests, bacteria, virus and protection against drought or water logging are the major demands of farmers. We are aware that development and introduction of these complex traits through GMO is an extended and expensive affair. The application of alternative biotechnology through molecular markers is also incumbent upon the availability of natural genes in cultivars or wild species. We are looking at a very challenging problem where the hopes are high and progress is slow and expensive. Thus, Krishidhan is transforming and has evolved its strategy from science to curiosity and now to innovation-driven research.

Need for partnerships & policy change

Today, seed companies in India are, to a great extent, dependent on MNCs for new technologies. We envisage that innovation-based R&D will play a major role in bringing sustainable and durable products. A company with higher investment is likely to be better able to serve farmers and, hence, grow faster. The industry cannot grow unless it meets the demand of the farmers, and at the same time, in order to survive, it will be required to make heavy investments in R&D.

No single industry alone will be able to meet the challenges forced by climatic changes and problems of pests and diseases. Therefore, seam-free and public-private and private-private partnerships are a must. These can be facilitated if public and private R&D are treated at par and be provided generous support for infrastructure and grants for projects in stand alone or partnership mode.

Also, in order to sustain the gains and keep the seed industry competitive, changes in government policies will be needed to encourage competition and innovation, streamline science-based predictable regulatory system, no price control and implementation of intellectual property rights to create an investment-friendly ambiance.

Such a change in policy is inevitable to accelerate science, curiosity and innovation driven R&D, which, in turn, shall support marketing to overcome strategic and operational challenges and ensure overall agribusiness sustainability and food security.