



LEADERSHIP TALKS

Leadership Talk Series: Exclusive Chat with Dr. Shivendra Bajaj- Executive Director of FSII

January 19, 2021 / 1 comment

“India should be welcoming technologies like GM crops and digitization of agricultural supply chain“.

Focus Agritech had an opportunity to interact with Dr. Shivendra Bajaj, Executive Director of Federation of Seed Industry of India (FSII). Dr. Bajaj is a thought leader in the industry and has worked in important capacities for organizations like The Association of Biotech-Led Enterprises-Agriculture Focus Group (ABLE-AG), Alliance for Agri Innovation, DuPont Pioneer and Dupont etc. He is a prolific writer and his interviews and articles are regularly published online.

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Q1) Since you drive policy making discussions with stakeholders such as central, state governments and regulators do you see renewed focus on Agriculture as a sector and a joint vision getting shaped up for implementation?

Dr. Shivendra Bajaj

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However, a lot more needs to be done to improve crop productivity, sustainability of the sector, assuring yields and adding value to the produce. **The farmer needs to be given access to better technology in all aspects of farming, choices in cultivation, better and affordable storage of produce and opportunities for processing to earn better.**

Focus Agritech

Q2) What is the role of technology and the transformation that you envisage, it can bring to Indian agriculture sector in the coming 3-5 years?

Dr. Shivendra Bajaj

Technology is the only way for agriculture to move forward in the right direction. Depleting natural resources coupled with climate change will only make farmers more vulnerable to crop failure and technology can have the most positive impact on agriculture. It can be deployed to improve yield, increase food diversity, improve nutrition, develop disease and pest resistance crops, control food waste and support sustainable agriculture.

India should be welcoming technologies like GM crops and digitization of agricultural supply chain as well as novel innovations like Gene-editing and use of artificial intelligence (AI) in agriculture. Gene editing technology can help address climate change and improve crops for resilience and better yields. It will make crops high yielding while using minimal soil resources and their efficient use.

The gene edited plants would require minimal pesticide sprays, reducing GHG emissions, increased shelf life to reduce wastage and enhanced vitamin, protein and mineral levels for consumer health. Multiple research institutes in India are working on improving different crop traits using gene editing, we need to expedite the process of transitioning these to farmers' fields.

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Q3) What is the current regulatory situation for GM crops in India?

Dr. Shivendra Bajaj

Although, the regulatory process of reviewing applications for field trials at Review Committee on Genetic Manipulation (RCGM) and Genetic Engineering Appraisal Committee (GEAC) level is working fine, the main issue is that there is no decision on commercialization of GM crops.

Bt Brinjal approved by GEAC has been under moratorium since 2010 and GEAC recently gave approval to conduct large scale field trials of another Bt Brinjal event at multiple locations across India. This decision too has met with anti GM advocacy and political pressure to hamper the science-based evaluation of Bt brinjal crop.

GM mustard too has not been given commercial approval. The GEAC approved research trials are also difficult to conduct. There is a requirement of getting NOC from states. This process is still a big problem as not many states are willing to give NOC for field trials.

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Q4) Why is it important for India to adopt Bt Brinjal?

Dr. Shivendra Bajaj

Brinjal is one of the most pesticide consuming crops among vegetables. Farmers spray pesticides more than 25 times in a single crop season of Brinjal. The deadly Fruit & Shoot borer is a menace for the farmers and its caterpillar also finds its way into our homes through infected brinjals. By controlling this with Bt technology we can save farmers income, reduce pesticide load on the environment and provide pesticide and insect free brinjals to the consumers.

The Bt Brinjal technology was approved by GEAC in India based on comprehensive biosafety evaluation, which included regulatory field trials, but the then Minister of Environment imposed a moratorium on its commercial release in 2010 for reasons which were not based on science.

Bangladesh went ahead and approved Bt Brinjal for cultivation in 2013. Since then, Bt brinjal has helped smallholder farmers (around 150,000 small holder farmers) in Bangladesh achieve higher yields, a 60 percent



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The current Bt Brinjal event which is going for field trials, which were approved by GEAC in May 2020, was developed by the National Institute of Plant Biotechnology under Indian Council of Agricultural Research (ICAR) and has been licensed to an Indian company for commercialization. This technology is different from the Bt Brinjal technology which despite approval by GEAC was put under moratorium in India but is being grown commercially by farmers in Bangladesh since 2014.

The indigenous technology developed by our National Institute must get an opportunity for getting tested in the field. **Development of indigenous technology is in line with the Atma Nirbhar Bharat mission launched by the Honourable Prime Minister of India.** Delays due to a paralysis in the decision-making process by Centre and State Governments has essentially stalled the progress in research to develop new technologies. This has also led technology developers to curtail their research efforts in India thereby adversely impacting the interests of our farmers in the long run. Field trials are the only way to ensure safety of crops.

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Q5) Are GM crops safe for consumption?

Dr. Shivendra Bajaj

Multiple agencies (including ISAAA, European Commission, www.biofortified.org, www.informahealthcare.com) have shown in extensive studies and diverse analyses that **in 23 years of GM cultivation, there have been no reports of adverse health effects on humans or animals**, reiterating substantial equivalence of GM with conventional crops.

As a matter of fact, 1785 studies on GMO safety are available on informal health care websites. The European Union report based on 130 research projects conducted over 25 years and involving more than 500 independent research groups, concluded that GM crops were as safe as the conventionally bred ones and had the potential to improve crops beyond the limits of traditional breeding.

The assessment evaluated the impact of GM on the environment, crop diversity, horizontal gene transfer, effect on non-target organisms, soil and water ecology and the co-existence of different crops. The report observed that genome was a dynamic entity that continuously refined its genes and GM technology enables the same process with better precision and information. GMOs are very well-regulated in India and across the globe unlike the conventionally bred crops. We have a very robust regulatory system in India for research and approval of GM crops and we should support it to run its course for active science-based evaluation of the technology.

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Q6) There are more than 450+ Agritech start-ups that have come up in the last 4-5 years in India? What is the potential and growth that you see for them and are you working with few of them at ground level?

Dr. Shivendra Bajaj

The sector has immense potential considering the agri sector in India is immense and yet quite novice when it comes to digitisation and adoption of machinery and technology. The agri start-ups can involve farmers in all stages of food production and marketing.

Due to lack of storage and infrastructure, agri startups can also act as a last mile connect for storage and transportation. For instance, if farmers decide to grow niche or exotic crops, start-ups can help them connect with the right consumer base and help them get the right remuneration. The potential is vast when it comes to collaboration.

Federation of Seed Industry of India (FSII) and our member companies collaborate with multiple stakeholders to engage closely with farmers, seed companies, rural communities, regulatory authorities, policy makers, government officials, scientific community, grower organizations, NGOs and other diverse stakeholders to create an enabling environment for the growth of research-based seed industry.

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Dr. Shivendra Bajaj

FSII and AAI have been quite consistent in their advocacy and outreach on issues critical for technology improvement and development in the seed sector. These include **providing inputs on policies around Digital Sequence Information (DSI) and Access and Benefit Sharing (ABS), that will impact innovation and international collaborations.**

Similarly, sharing industry position as well as international trade positions regarding the new regulations that are being developed for Import of GM food/feed in the country. AAI has been quite vocal in laying to rest the various misconceptions around GM crops and products. We are also supportive of harmonized regulations for gene editing in the Asia Pacific region. Given the potential and benefits of gene editing technology, amicable cooperation amongst nations will encourage trade.

Vote of Thanks !

Focus Agritech would like to thank Dr. Shivendra Bajaj for his insightful and analytical responses to our questions. We are very optimistic that in his current role as well as future profiles he will continue to guide policy making in India and contribute immensely to the agriculture sector of India.

Also, read on our website '[How a women CEO, Ms. Garima Jain is raising the bar at AgroCorp India](#)'

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