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# From Pomato to Protato

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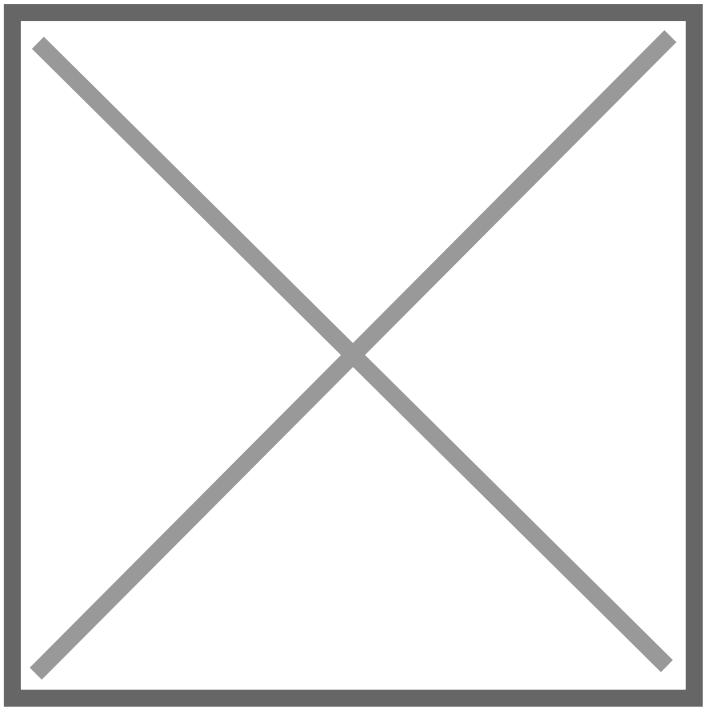

Bending it unlike Beckham

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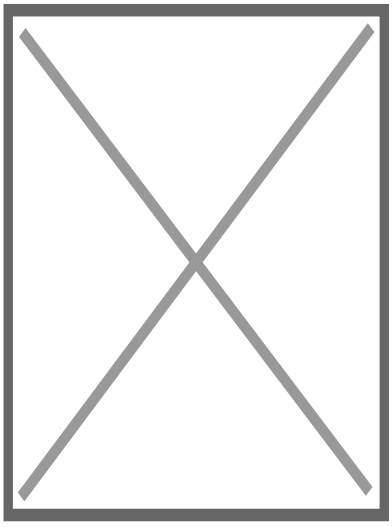

I was taken by surprise. The BBC Radio presenter, who was busy talking about football star Beckham, suddenly shifts to genetically modified potato and tells his listeners that he has a food policy analyst on line from New Delhi. And before I respond to his greetings, he fires the first googly: "When will you stop treating the multinational corporations as wicked?"

Knowing that it was a live and a popular breakfast program, I had little time to react. "I think this question should be directed to the multinationals," I replied, adding "as far as I am concerned, I would stop treating them as wicked the day they stop acting wickedly." While I was still drawing the link between multinational corporations and the GM potato being researched in India, the commentator asked: "Why are you opposed to the GM potato which is reported to contain 40 percent more proteins that could be the answer to India's mounting problem of malnutrition?"

"Who gave you these fake protein figures?" I asked, explaining "the GM potato that is under research contains not more than 2.8 percent protein, a mere increase of 0.6 to 0.8 percent protein than what exists in the normal potatoes." Well, this is what has been claimed by the secretary of Department of Biotechnology (DBT), he quipped, adding "but don't you think that even a little increase in proteins would help?"

"What a shame. Those who talk of addressing the acute malnutrition crisis by feeding GM potatoes containing 2.8 percent proteins must be living in a fool's paradise," I reacted angrily. "If they are really sincere in fighting malnutrition, they should ensure that the 50 million tonnes of foodgrains that is rotting in the open is first fed to the hungry. And before you ask me why, let me tell you that over 25 million tonnes of food that is stocked and rotting comprises wheat, which contains four time more proteins than potatoes."

A couple of more questions and the live interview ended. The BBC presenter turned back to more juicy stuff on Beckham, his interest in India's hunger and malnutrition being as superficial as that of the biotechnologists.

But no sooner I was back in my office, another reporter was on line, this time from Paris. He too was seeking my reaction to the claims made by Manju Sharma, secretary, DBT. In three days, after Manju Sharma had made the tall (but false) claims at an international conference in France, the global print and electronic media had literally chased the story as if it was likely to lead the way to unearth the "weapons of mass destruction".

And that reminds me of another obtuse research claims that had donned the front pages of newspapers in the early 1980s. Scientists had succeeded in crossing potato with tomato Ã¢â?¬â?? and they called it pomato Ã¢â?¬â?? hoping that it would increase the shelf life of tomatoes. The skin of the tomato would become thicker and that would mean that housewives would not have to throw over-ripe tomatoes every other day. Many newspapers had come out with editorials praising the effort of the scientists, probably meant to make for light reading. Mercifully, we did not hear of the "scientific" feat again.

The scientific world has certainly come a long way since the days of pomato. In the days of genetic engineering, when all kinds of permutation and combinations are being ruthlessly tried by the neo-breed of biotechnologists and with the multi-billion dollar biotechnology industry waiting for a miracle to rescue its flagging reputation, protatoÃ¢â?¬â?•as the GM potato is calledÃ¢â?¬â?•is being promoted as the magic bullet. Scientists are giving an impression as if they finally have the technological remedy to fight the scourge of mankindÃ¢â?¬â?•silent hunger.

"Hidden hunger" or "silent hunger", as it is called, is the new buzzword in the scientific echelons. Nearly 30 years after the advent of green revolution technology, scientists are rediscovering the importance of nutritional security for masses. The desperation is not in reality aimed at addressing the problems of "hidden hunger" but more tuned according to public acceptance to the controversial science and technology of genetic engineering. Such is the haste to promote the faulty technologies that Manju Sharma has even gone to the extent of saying that she would push for protato to be included in the mid-day meal program for school children.

Potato would sprout before they reach the school children. And wheat, which is lying stacked under the sun, contains on an average eight to nine percent proteinsÃ¢â?¬â?•roughly four times more than what protato containsÃ¢â?¬â?•and that too without any harmful effects associated with GM foods. It would make terrible economic sense, if the biotechnologists were for once to forget the "novel" foods under preparation and urge the government to speed up food distribution among the hungry masses. After all, bulk of the surplus foodgrains that lie stocked in the open have already turned into cattle feed.

Biotechnologists too are a part of the society and cannot simply shrug-off their responsibility by blaming the government for food mismanagement.

Let us try to understand the reasons for the growing malnutrition. For an average Indian, the common menu revolves around dal and roti. While the roti is easily accessible (if you had the purchasing power), the availability of dal has been on a continuous decline. Pulses being the crop of marginal areas, were ideally suitable for the rainfed areas which account for 70 percent of the country's land under plough. Pulses require very less water and are known to enrich the soil by fixing atmospheric nitrogen. The neglect of pulses pushed the prices of the common dal beyond the reach of an average Indian, with the result that micronutrient deficiency continued to grow.

Pulses on an average contain 20 to 24 percent proteins. Any effort to increase the production of pulses would have helped reduce the prices thereby making it easily accessible. It didn't happen. Instead, the country, which consumes the largest quantity of pulses gradually turned into a major importer. India today imports pulses in large quantities from Australia and Canada. Such were the lopsided policies that in fact, at one stage, India was contemplating "contract farming" for pulses in Africa to meet the country's need. There has been no effort at all to encourage the domestic farmers to cultivate pulses and pull the crop out from the marginal areas. As a result, pulses output continues to hover around 14 million tonnes. If only the money that is being wasted on fruitless application of genetic engineeringÃ¢â?¬â?•like the protatoÃ¢â?¬â?•were to be diverted for research on pulses, the country can build a real sustained answer to malnutrition.

At the same time, production of cereals continued to grow. With globalization adding on to unemployment, even the cereals increasingly went out of the reach of the masses. With the result, the country is saddled with over 50 million tonnes of wheat and rice whereas some 320 million people go to bed on empty stomach. Agricultural scientists have steadfastly refused to address the problem of mounting stocks terming it as a political problem. But when the political masters started asking farmers not to produce more, and questions began to be raised about the relevance of the massive agricultural research infrastructure (the second biggest in the world), agricultural scientists began looking for opportunities to justify the public investment into a redundant white elephantÃ¢â?¬â?•the Indian Council of Agricultural Research (ICAR).

"Golden rice" was the first such magic bullet. The ICAR was quick to latch on hoping that it would perhaps salvage some of its lost prestige. And then came the magic of GM potato, which is being developed by a team of scientists led by Dr Asis Datta, a former vice-chancellor of the Jawaharlal Nehru University, New Delhi. The transgenic potato that is under field trials, has a

gene called AmA1 from Amaranth that provides a third more protein than what is normally available in potato, including substantial amounts of the essential amino acids lysine and methionine.

Potato, on an average, contains 1.98 percent protein. Even if its availability has been enhanced by a third, the protein percentage comes to 2.8 percent. How will this "protein-rich" potato help to solve malnutrition in the country? How will the country's nutritional security be addressed? At the same time, it is high time that the country first evolves the national priorities for which biotechnology research tools are crucial. Biotechnology cannot be left in the hands of trigger-happy scientists who are excited at the use and abuse of something called gene gun.

Learn to bend it like Beckham. Then only you can score a goal.

Devinder Sharma