Green revolution in agriculture

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Father of the Nation Bangabandhu Sheikh Mujibur Rahman started hard work with the aim of fulfilling the dream of a rich agriculture in the newly independent country. Agriculture was at the core of Bangabandhu's development philosophy as a statesman. Bangabandhu realized that the country's economy depended on agriculture. Therefore, he raised the slogan "If the farmer lives, the country will live" and called for a green revolution to strengthen agricultural activities. He undertook an age-appropriate land reform program to implement the agricultural revolution. In the first meeting of the Council of Ministers on January 13, 1972, he waived the interest on the arrears of the farmers, announced to waive the rent up to 25 bighas, fixed the maximum ceiling of land ownership at 100 bighas and took the initiative to distribute the surplus land and special land among the landless and marginal farmers. Freed farmers from 1 million certificate cases filed during Pakistani rule.

While rebuilding the newly independent war-ravaged country, he rightly realized that the development of the country is not possible without the development of agriculture. He gave utmost importance to agricultural education, research, training and extension to meet the various challenges of agriculture. In continuation of the far-reaching work plans and activities of the Father of the Nation, Bangabandhu, under the visionary leadership of his daughter, Prime Minister Sheikh Hasina, Bangladesh has become a role model of development and wonder for the whole world as a result of adopting agriculture-friendly policies and practical steps.

About 170 million people live in this country of 1 lakh 47 thousand 570 square kilometers, which is mainly agricultural. About 2 million new faces are added every year. In the next year 2030, the population of this country will be about 200 million. If the current food production continues, in 2030 the requirement of rice will be 5.09 million tons, wheat 2.51 million tons and vegetables 10.25 million tons. According to agricultural statistics, the amount of arable land in Bangladesh is 8.58 million hectares, cultivable fallow land is 0.2 million hectares, irrigated land is 7.4 million hectares, total cropland is 15.48 million hectares. The number of agricultural households is 15.18 million and the contribution of agriculture to GDP is 13.82 percent. Due to unplanned settlements, urbanization and industrialization, an average of 220 acres of agricultural land is being converted into non-agricultural sector every day. About 15 percent of the yield is lost due to insect and disease attacks in various crops.

Biotechnology research started in Bangladesh in the eighties with a focus on tissue culture. Vigorous and healthy seedlings of commercial potential cash crops such as potato, banana, papaya, jute, jackfruit, strawberry, orchid, neem herb and herbaceous plants are being widely produced using tissue culture method. However, modern techniques have been added over time - genetic engineering or gene engineering. Genetic engineering is the introduction of specific genes into the DNA of a plant to obtain a desired trait. Various research institutes such as Bangladesh Agricultural Research Institute, Bangladesh Rice Research Institute, Bangladesh Atomic Agriculture Research Institute, Bangladesh Jute Research Institute, Forest Research Institute, National Institute of Biotechnology, Bangladesh Science and Industrial Research Council, Cotton Development Board and universities such as University of Dhaka , Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh Agricultural University, Rajshahi University are conducting related research activities. A lot of progress has been made in agriculture and crop development through gene engineering. Following are some of his brief introductions:
Biotech Rice: Biotechnology Department of Bangladesh Rice Research Institute has developed Bidhan 86, Keen 87, Bridhan 89, Bridhan 92 and Bridhan 96 through various advanced technologies which are high yielding. Biotech Sugarcane: Biotechnology Department of

Bangladesh Sugar Crop Research Institute has developed BSRI sugarcane 43 through Somaconal variation which has high sugar holding capacity, early maturity, resistance to red rot and tolerance to drought, flood and waterlogging.

Bt brinjal: the first biotech crop at field level in Bangladesh. Bangladesh Agricultural Research Institute (Bari) introduced 4 varieties of Bt brinjal (Bari Bt brinjal-1, Bari Bt brinjal) in 2013 by introducing the tip and fruit borer resistance gene (Cry1Ac) into brinjal through biotechnology to protect organisms and the environment from the harmful effects of toxic pesticides. -2, Bari Bt Eggplant-3, Bari Bt Eggplant-4) obtained government permission for cultivation. Nowadays its popularity among farmers is increasing.
Unveiling the cause of blast disease of wheat: In the joint research of scientists from some countries of the world including Bangladesh, the life secret of the fungus responsible for the blast disease harmful to wheat was revealed. In collaboration with Bangabandhu Sheikh Mujibur Rahman Agricultural University, a simple biotechnological method for quick detection of the disease was discovered.

Leyte blight resistant potato: Bangladesh ranks 7th in the world and 3rd in Asia in terms of potato production. Late blight is the main disease of potato. To control this disease, 80-100 crore taka are spent every year for spraying fungicides in Bangladesh. Bangladesh Agricultural Research Institute in collaboration with University of Michigan, USA has transformed 3 leyte blight resistant genes from wild varieties of potato into our popular variety Diamont. Which will be released as a late blight resistant potato variety through laboratory, greenhouse, controlled field trials and tests in different parts of the country in the future.

Golden Rice: One in five pre-school children and 23.7 percent of pregnant women in Bangladesh suffer from vitamin A deficiency, according to the World Health Organization. The beta-carotene gene from maize was introgressed into our domestically popular variety Bri rice 29 . The government is considering the release of golden rice. 70 percent of our country's calories are filled from rice. If an adult eats 150 grams of golden rice every day, half of the daily requirement of vitamin A will be met.

Unraveling the life mystery of jute: Bangladesh Jute Research Institute has unveiled the world's first Do and Bhosa jute life mystery (Genome Sequencing) using biological technology and the life mystery of Macrophomina phaseolina, a fungus of more than five hundred crops including jute, has been revealed.

Bt Cotton: Cotton is the second cash crop in Bangladesh after jute. The annual demand of cotton in our country is 5 million bales, and the production is only 0.15 million bales that is only 3 percent of the demand - we have to import about 20 thousand crores of cotton every year to meet this demand. Bollworm is one of the major enemies of cotton. The amount of pesticide sprayed by farmers to control this pest is 40 percent of the total cost of production. Bt cotton is playing an important supporting role in this regard.

At present, with the aim of achieving food and nutrition security, increasing farmers' income and creating employment through increasing the overall agricultural production of the country, BARI is conducting research activities on about 211 crops including various types of cereals, pulses, oil crops, vegetables, fruits, flowers.

In addition, research is being carried out on developing high-yielding improved varieties of these crops and improved cultivation methods, crop management, soil and fertilizer management, insect and disease control, agricultural machinery, post-harvest technology, etc.

By combining our abundant natural resources, industrious people and research and extension work, it is possible to achieve food self-sufficiency in the country. It's just a matter of time. We have already achieved self-sufficiency in the production of food grains and potatoes. It is necessary to achieve completeness in other crops and self. The use of biotechnology in agriculture and Bangabandhu's Green Revolution philosophy will further accelerate it. And through this will be achieved the golden Bangladesh of the dream of the father of the nation, free from hunger and poverty.

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