effects on the environment and on the health of the farmers, apart from the considerable increase in production costs.

In a collaborative effort among Bangladesh, India and Philippines, a gene from bacillus thuringiensis has been introduced into eggplant and found to be effective and this variety is under contained field trial in Bangladesh. In another collaborative effort among Bangladesh, India and Indonesia, a resistance gene isolated from a wild relative of potato (solanum bulbocastanum) has been transferred to popular varieties that are normally affected by late blight to confer resistance against the disease. According to some researchers stem borer has almost shut down the sugarcane industry, reducing greatly its production. Experimental success with other crops indicates that similar success can be achieved with sugarcane, too.

In addition to solving the major biotic and abiotic constraints, biotechnology may bring other benefits to our farmers. Scientists have engineered wheat and other crops that can utilise fertilisers more efficiently. One such transgenic wheat variety, for example, yielded up to 29 percent more with the same amount of fertiliser than did the normal crop. This brings hope for less quantity, more efficient and more economic use of fertilisers and less environmental pollution. Advanced field testing of Bt rice in China shows higher yields and a 80 percent reduction in pesticide use. In Bangladesh, where the environmental management system is very poor, reducing the use of chemical as pesticides may lessen the burden of pollution.

Aquaculture industry of Bangladesh has the potential to provide food rich in vitamins, fatty acids, and proteins, and to create new jobs, enhance income, and enable high returns of the use of natural resources. Researchers around the world have recorded growth acceleration and increased feed efficiency in transgenic fish species. Recombinant growth hormones, vaccines and veterinary biopharmaceuticals may increase yields of farm animals, too. Poultry industry is severely suffering from various infectious diseases. Imported vaccines and drugs are often not suitable for the local infectious strains. So, there is scope to do a lot in this particular field of research and bio-technology will definitely help us in improving our livestock.

Genetic improvement of microorganisms for industrial production of food supplements, drugs, vitamin, hormones, bio-fertiliser, bioinsecticides, solvents and other chemicals, which are now imported from abroad, will allow us to produce these here with our own expertise. Bioconversion of agricultural wastes into food, feed and fuels might be an important area of application in Bangladesh. Development of efficient activated sludge process for waste treatment, development of organisms for treatment of industrial pollutants,



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