H| all. I am in an ecstatic mood today. Yes, I am Bacillus thuringiensis’s strain kurstaki. After corn, cotton and maize now I also enter. Oh, I mean my cry1Ac protein successfully enters Lepidopterons to give insect-resistant tomatoes. Yippee! My ubiquity in soil is I believe what makes me stay grounded inspite of all the scientific attention I receive! Ha ha ha. No, but seriously, I am quite a modest bacterium.

But, I somehow bear a grudge against these Lepidopterons. And thanks to all you researchers who optimally used my abhorrence against them. I paralyze their guts after forming pores by my delta endotoxins. But nonetheless, my proteins are not susceptible to live stocks and humans.

My insecticidal component machinery is not limited to endotoxins. I also use zwittermics, phospholipases, chitinases, vegetative insecticidal proteins, Cyt proteins and spores to combine together with the endotoxins and paralyse the insects.

I remember the other day talking to israelensis (Bacillus thuringiensis subspecies israelensis) when he was acknowledged for mosquito management by Colorado university. Born in the Negev desert of Israel, my brother is extremely toxic to larvae of many mosquito species. This broad spectrum action on mosquitoes and other flies has gained him popularity. One of his most important contributions was in the Onchocerciasis Control Program. Onchocerciasis aka River Blindness, is a human eye disease, caused by a parasitic worm carried by Black fly. Israelensis used his complex parasporal body against these Dipterans. And now, aizawai, my brother (Bacillus thuringiensis subspecies aizawai) is also recently exploited for mosquitoicidal activity especially against dengue, the dreaded fever. Keep up the good work bro. His Cry1C protein is highly toxic to the larvae of Aedes, Culex and other mosquitoes.

I feel so proud in helping the human community who have come up with some merits utilizing us – the bacilli, who were once known only to cause Anthrax or Tuberculosis or even tooth decay. Finally, having a gram positive attitude towards life is what always helps. Ha Ha Ha. . . .

In this list of accomplishments, I shall never fail to mention my gratitude towards Indian scientists, who made me famous all over the world through their scientific studies and country wide application of my utilities, specifically in the agricultural sector. The widespread use of Bt Cotton in India made it the number one global exporter of cotton. The poor farmers were happy, the yield increased, they witnessed resistance against American bollworm, pink bollworm, spotted bollworm, also the hectarage of cotton cultivable land increased owing to high yields and demand.

Pest management has always remained our prime focus from the day we were born. Be it cotton, egg plant or maize, Bt crops are a boon to a country’s economy. I along with all my genetic divergence in the form of various strains will continue our fight against the insects and save your crops and give greater net returns in terms of yield. Right from Thuricide concentrates or mosquito dunks to larvicide dusts, we can be easily found in all the products aiming to eliminate pests and insects. One of my isolates HD1 can be found as a commercial formulation named Dipel.

On one of our get-togethers, my brother morrisoni spoke about his travel from one lab to another, one petri plate to another. But in one such study, when researchers cultured him in glucose and salt-containing media, they forgot to adjust the pH of the media! Oh! I can understand how much painful was it for morrisoni to solubilise his parasporal body in the wrong pH. Usually, alkaline solutions activate our endotoxins, but every different brother of mine has his own particular pH requirements.

It is on such get-togethers that we spend a gala time with our kith and kin and also discuss our achievements in various research studies. Travelling without a passport, communicating without mobile phones, but still being connected with our family is some thing homo sapiens could never enjoy! Complex eukaryotes . . . Ha ha ha ha . . . So, prokaryotic life, Zindabaad !!!!!

Nostalgic, but it is a genuine feeling guys! As if it was just the other day when I was discovered by Dr. Shigetane Ishiwartari. Yes, our spores and crystalline insecticidal proteins have been exploited only since the 1920s but it’s been 110 years since our discovery. Our gene is inserted into the plant’s DNA where it can secrete Bt-toxins and finally help combat major agricultural challenges. Recombinant DNA technology and other scientific advances have helped us prove our worth. I wish, there be many basic and applied research studies on us and we are able to serve man in sectors other than agriculture too.

Some of my other applications could be in the food industry where my chitinases could be isolated and used for food preservation. Also, in the agricultural sector, I wish to provide insecticidal resistance to fruit crops, celery and others. I wish to provide abiotic stress resistance too to crops. My wish list for serving mankind in the area of insect as well as pest control is endless. Our entire genome has been sequenced by scientists; hence I am confident that my wishes will sooner or later be fulfilled by them.

Humans have made me a celebrity from a mere bacterium. I and my brothers (aizawai, israelensis, japonancis, sandiago, morrisoni and many more strains) would certainly remain indebted to the human race for giving us the accolades in lieu of our services to them. Thanks all. Reap as much benefits as you can. We are at your service.

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SHORT FEATURE

An Autobiography of Bacillus thuringiensis

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