

BIOPRODUCTS : MAKE IN MEGHALAYA

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The Government of India (GoI) wants that the entire north-eastern region becomes organic by 2030. The roadmap laid by the GoI sets very stiff targets for our State – within the next nine years, the State must (1) establish 94 Farmer Producer Companies (FPCs), (2) expand the area under organic agriculture to one lakh hectares (a third of Meghalaya’s cultivable area) (3) set up 5 Residue Testing labs, and (4) work out the export protocols for individual crops, etc. Even as the department is seized of the issue, we will be required to take stock of where we are and how best we can achieve this seemingly arduous task within the time frame.

India is the second-largest consumer of chemical fertilizers after China, consuming about 61.4 million M.T. annually (2020). Undeniably, chemical fertilizers and pesticides have played a role in increasing the agricultural production of our country. Still, it is now realized that indiscriminate use of chemical fertilizers and pesticides pose a severe threat to human and animal health. Meghalaya is in specific danger because scientific studies confirm that the fragile ecosystems of hilly states are far more vulnerable to the rampant use of chemical fertilizers and pesticides. As of now, however, we appear to be better placed than many other states because our State’s per hectare consumption of fertilizers is 19 Kg – much less than even Nagaland (34.71 Kg/ha.) and Mizoram (22.88 Kg/ha). We know where we stand when we compare ourselves with a state like Punjab, whose consumption is 190 Kg/ha, against a national average of 88.2 Kg/ha. Punjab consumes about 9% of the total fertilizers in India. Our farmers seem wiser than those in other states!

In its pursuit of becoming organic, the Government of Meghalaya decided to stop subsidizing chemical fertilizers and pesticides in 2014. This laudable decision reduced the State's chemical fertilizer consumption by 56.69% since 2014. It has also gradually led to increased demand and usage of bio-fertilizers in the State of Meghalaya, a redeeming feature of our policy. Kerala, the most advanced State in our country, too made a similar effort to reduce its chemical fertilizer consumption and reported a decline from 87 Kg/ha. (2015-16) to 36.49 Kg/ha. In 2019-20. Even the reduced level of Kerala is higher than that of Meghalaya (19Kg/ha).

Meanwhile, the area under organic farming increased from 1.7 million to 4.72 million hectares in India over the last decade. The ever-increasing consumer demand for residue-free agricultural products is perhaps driving organic agriculture in our country, stimulating the scope, market, and use of bio-fertilizers and bio-pesticides. The demand for Biofertilizers is quite tremendous and far exceeds the present national production levels. The need for bio-fertilizers is 6.27 lakh tonnes, while the current production meets only about 11% of this demand. The production occurs in the southern and western regions, while the eastern and north-eastern regions lag – both in production and consumption. In 2019-20, the State government mobilized funds from the Department of Biotechnology through the Bio-Resources Development Centre, Shillong (BRDC), to establish a 150 Tonne/year Bio-fertilizer Unit. The BRDC has since transferred the funds to the Agriculture Department to install the Bio-fertilizer unit adjacent to the current Bio-control lab in upper Shillong. The agriculture department will make the unit ready in about 3-4 months, and the 150 M.T./year capacity bio-fertilizer unit should hopefully be ready by the end of the year, 2021.

Now let us review the status of bio-pesticide production in our State. Globally, between 20% and 40% of the crop is lost every year due to pests and diseases. In our State, cereal crops such as Rice and Maize, vegetable crops like Cauliflower and Cabbage, fruit crops – Peaches, oranges, plums, and plantation crops like Areca Nut suffer losses due to pests and diseases. Therefore, we do need sustainable protection of these crops to help both the farmers and consumers. The consensus about Bio-fertilizers and bio-pesticides is that they are eco-friendly and help promote overall plant growth through nitrogen fixation, solubilizing phosphorus and potash, and bringing about sustainable biocontrol. In 2003-2004 the State's Agriculture Department established two bio-control laboratories at Upper Shillong and Tura. However, the performance of these centres has been mixed. While the Shillong Lab has performed well, the performance of the Bio-control lab at Tura has been abysmal, even though its infrastructure was better. The current production of bio-pesticides at the two Labs can only cover about 2680 hectares of Meghalaya's cropped area, catering to only the current 0.079% of the State's total cropped area. Farmer interest in bioproducts is remarkably high, but the ability of the State to meet the demand for both bio-fertilizers and pesticides is as good as negligible. One can gauge the magnitude of the task ahead of us, considering that we will have to produce enough to cater to one lakh hectares in nine years.

The State needs to increase the current production base by 100 times to meet bio-products' current and future requirements. And it will be impossible for the State to create infrastructure to meet the ever-growing demand, hence the private sector has to get involved in this area. Young people with Agriculture, Microbiology, and Bio-Technology degrees do not have too many options for jobs in the present context. They are academically prepared to establish bio-pesticide multiplication units. An EOI (Expression of Interest) recently issued by the Farmers' Commission elicited responses from sixty-seven educated youth, and the Commission shortlisted 18 candidates for the next level of diligence. Some of them hold Ph.Ds in Microbiology and related academic disciplines. While the Bio-control labs at Shillong and Tura and the upcoming Bio-fertilizer unit can function as the 'Mother Units,' the entrepreneurs can establish 'Multiplier units,' with partial government support. Ideally, we will need at least one such multiplier unit in each of the districts. Given that the overall thrust of the department is

to make Meghalaya organic, the case for erecting a manufacturing base in bioproducts is both important and urgent.

The Government of India has been promoting Biofertilizers through grants, extension work with varying degrees of focus and emphasis. In addition, to create a demand for the bioproducts, the Government of India has also launched several centrally sponsored schemes viz., NMSA (National Mission for Sustainable Agriculture), Organic and INM component of the Soil Health Management (SHM)/PKVY (Paramparagat Krishi Vikas Yojana), RKVY, National Mission on Oilseeds and Oil Palm (NMOOP), NFSM, all of which promote the widespread usage of biofertilizers. So, I do not see any difficulty in finding markets for the bioproducts of Meghalaya

The Government of Meghalaya has already developed a scheme –‘PRIME,’ to channel, mentor, and handhold the youth toward entrepreneurship. Therefore, it would be an excellent opportunity to stream the youth toward the bioproducts sector. Necessary capacity building, handholding, branding, and disseminating the technology to the farmers could be jointly managed by the Directorates of Agriculture, Horticulture, RTTI, KVKs, MIE, Labour Department, and the Farmers’ Commission. This approach, if acted upon, will meet the farmer’s demand for inorganic fertilizers and pesticides, reduce the cost of cultivation, generate employment, create a pool of ‘Made in Meghalaya’ products and expand the GDP of the State. In addition, the Meghalaya State Public-Private Partnership Policy, 2021, and the Meghalaya Youth Policy 2021 have created a policy ecosystem. Since we have invested in their education, the youth would want to pay back to the country. All that they will seek is a hand to hold at the right time. And the time is now!!

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