

# WAFING ACROSS THE STATE, BUT QUIETLY!

Aroma mission

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Launched by the Chief Minister in May 2019 at Byrwa village (Ri Bhoi district), the Aroma Mission is steadily progressing. Though relatively less conspicuous and somewhat thinly funded, the Mission, with a budget outlay of Rs.18 crore and a coverage target of 1000 hectares, is firmly on track.

It all started with the insight that the Government needed to do something about the cultivable wastelands across the State. As per the Government of India’s (2014-15) wasteland atlas, the culturable wasteland of Meghalaya is 3.9 lakh hectares, i.e., 17.38% of the total geographical area. Since the medicinal and aromatic plants (MAPs) are short-duration crops and some can grow even in low-fertility soils, the Aroma Mission was conceptualized to pursue the twin objectives of (1) utilizing the culturable wastelands and (2) widening the livelihood choices of our farmers through high-value MAPs.

With its varying altitudes and diverse agroclimatic conditions, Meghalaya is conducive to the growth of several medicinal plants. The Meghalaya Medicinal Plants Board estimates that about 834 plant species of Meghalaya are medicinal – of which eight plants are endemic only to Meghalaya and another seventeen are threatened species (in danger of extinction). Moreover, unlike most cereal crops marketed as raw produce, the MAPs would need to be distilled for essential oils before marketing. Adding value through distillation will benefit the farmers because of better price realization while encouraging entrepreneurs to emerge. Therefore, the rationale for a focussed Aroma Mission to step into the commercial cultivation of the MAPs was strong enough.

There were a few issues, however. The implementation of the Mission was relatively going to be more complicated than the others because it was not just about growing commercial quantities of MAPs; it was also about adding value through the distillation process. That meant imparting new skills to the farmers and entrepreneurs in quick time. Therefore, much preparation was needed before the actual commencement of the cultivation of the MAPs. Technical support from an established research institution was also required because it was entirely a new turf for our farmers and the officials. The range of the MAPs being so extensive, it was also necessary to pick the ones that suited our agro-climatic conditions best. The Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, a Government of India organization under the Council for Scientific and Industrial Research (CSIR), was identified as our technical partner to handhold us necessary consultancy agreements were signed.

The Institute of Natural Resources, Meghalaya (INRM) under the MBDA was the identified institution to implement the Meghalaya Aroma Mission. Partnership with CIMAP had been very productive because we needed to know which plants to grow, their agronomy, how to source high-yielding varieties, build capacities of farmers, and establish market networks. The CIMAP went so far as to customize the distillation units to suit Meghalaya's small-sized farms. Four stainless steel distillation units were fabricated, and the CIMAP specially designed an unloading system based on the cantilever principle exclusively for our State. These distillation units are now functional in eight locations, and six more Field Distillation Units (FDUs) are now being established in the State. The CIMAP also supported us in reaching out to the farmers by establishing a Technology Window at Langkyrding, Shillong.

Citronella, Lemongrass, Geranium, Pyrethrum, Patchouli, Pepper Mint, Palmarosa, and Vetiver are currently our prioritized crops considering their suitability to the State's agro-climatic conditions and the readily available market. The INRM established five Central Nurseries in each of the agro-climatic zones of the State so that appropriate MAPs could be cultivated. The INRM has, over the last two years, facilitated plantations in 180 hectares, organized 47 awareness camps and 26 training programmes across the State. One thousand five hundred farmers are now drawn into the Mission. At the end of the first years' operation, six tonnes of essential oil were distilled out and marketed at an average price of Rs. 1000/- per litre. This price realization will increase as the area expands, market linkages stabilize, and crop diversification occurs. The INRM is establishing eight Geranium nurseries this year, and more farmers, especially those belonging to

the temperate zones of the State, will begin Geranium cultivation this year, which will fetch a higher price of up to Rs.12,000/- per litre. On average, about three quintals of essential oil are being sold in the State every month. For the year 2021-22, the INRM will cover another 242 hectares. An interesting spinoff is that some enterprising farmers have turned themselves into suppliers of saplings to new entrants. As I write this article, fifty-five farmers in the State have begun selling the planting materials to the new entrants at moderate prices. That is a new vertical for us. That day is not too far when our farmers will emerge as the suppliers of planting materials to the other northeastern states.

A redeeming feature of the area coverage is that the West Khasi Hills district, generally considered remote, stood second, after the Ri Bhoi district, with 22.75 hectares. That is gratifying because wastelands are concentrated in the West & Southwest Khasi Hills districts. The Jaintia Hills and Garo Hills farmers are also doing well.

Another exciting aspect about the MAPs is their ability to do phytoremediation (improving the soil quality by planting certain types of crops). Thus, MAPs can reclaim soils that are degraded due to mining operations. The INRM did action research to ascertain if any aromatic grasses would have the potential to remediate some of these mine-affected soils, and the results are promising. For the sake of brevity, I will only mention three significant findings of the research: (1) There was a slight improvement in the nutrient content (N, P, K, Organic Carbon) and pH of the soil after the introduction of Aromatic grasses. (2) There was a 2% reduction in Iron, Copper, and Zinc concentrations in the soil after nine months, and (3) Citronella could withstand acidic and metal stress conditions of the degraded lands.

We have just begun our work. There is still a great distance to cover. Research needs to be initiated to explore indigenous MAPs that grow wild in Meghalaya. E.g., the Wintergreen group of aromatic plants (*Gaultheria* species) needs to be researched further. Wintergreen Leaf Tea alleviates rheumatic pains and various aches, and there is some local traditional knowledge about it. Quality issues need to be looked into, on-site collection and storage centres would have to be set up, foreign markets have to be explored, and funding support to the INRM should go up. Since our per capita consumption of fertilizers is meagre and we do not use fertilizers or pesticides for the MAPs, the possibility of pitching our essential oils as organic will fetch us far higher prices than what we can command now. That process needs to be formalized through the BRDC, the notified agency for organic certification. I also think that the State needs a Directorate of Medicinal and Aromatic Plants. The wish list is long, but the investments have to begin soon in this sector for results to happen. The INRM is headed by a quiet but solid officer who has built an extraordinarily committed team over the last three years. I am confident that the present team of the INRM can make the State emerge as a significant exporter of essential oils to the world in five years. First, however, the farmers will need the Government's unstinted support of Meghalaya to let the aroma be carried on the breeze! Sniff an opportunity?

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