7.2.1 INSTITUTIONAL BEST PRACTICES

Best Practice I: Preparation of Jeevamrutham (Biofertilizer)

1. Title of the Practice: Preparation of Jeevamrutham (Biofertilizer)

2. Objectives: One distinguishing characteristic of our educational institution is its emphasis on cultivating awareness and understanding among female students regarding personal development, the importance of upholding our heritage and customs, and the significance of environmental preservation. It is widely acknowledged that the current dire state of the earth is a direct consequence of the irresponsible actions of the human species. The issue of soil contamination has been overlooked in the process of modernization.

3. The Context: The escalating issue of soil pollution poses a significant danger to both the environment and the pursuit of sustainable growth. Hence, there is an immediate imperative to address this substantial matter. In commercial farming, switching from chemical fertilisers to Jeevamrutham offers a sustainable and economically viable option. The organic option not only preserves soil health but also coincides with the growing consumer demand for organic produce. Hence we adopt Jeevamrutham as a contextual remedy for a more sustainable and environmentally friendly approach to farming against hazardous chemical based fertilizers that degrade soil's fertility.

4. The Practice: The Department of Botany has implemented measures to provide education to youngsters on strategies for mitigating soil contamination. An illustrative instance pertains to organic farming, wherein the utilisation of Jeevamrutham, a plant-based Bio fertiliser, is observed. Jeevamrutham is known for its properties as a cool beverage for plants. The utilisation of this particular organic fertiliser is highly effective in enhancing plant growth and productivity. This is achieved through the stimulation of soil microorganisms, which in turn facilitates the accelerated absorption of nutrients by plants from the soil. Jeevamrutham emerges as a highly promising substitute for artificial fertilisers, while our bio enhancer exhibits potential as a viable means to enhance soil fertility, augment agricultural yield, and improve crop quality. Due to its composition consisting of natural constituents such as Besan, jaggery, cow dung, and urine, this substance has demonstrated practicality and cost-effectiveness. Universal access is available to all individuals.

5. Evidence of Success: The staff's encouragement led to students engaging in plant preparation, resulting in improved soil quality and high-quality crops for the hostel's culinary garden. This experience inspired team members to acquire some for their terrace garden.

In our college hostel kitchen garden, we had planted the seeds of a greener tomorrow, where the legacy of sustainability has been passed

down from generation to generation. It's more than a piece of land; it is a tribute to our collective ability to create a future in which every meal is a celebration of the earth's generosity and a reminder of our responsibility to sustainably manage it.

Jeevamrutham significantly improved the health and productivity of plants in my friend's rooftop garden. It enhanced soil fertility, created a balanced microbial ecosystem, and facilitated better nutrient absorption by plant roots. It also improved soil structure, promoting better water retention. It aligned with sustainable and organic gardening practices, contributing to a healthier urban ecosystem.

3. Problems Encountered:

Production Process Problems; Problems such as a lack of expertise, contamination, insufficient raw materials, poor fermentation, incinsistent quality, storage challenges.

Jeevamrutham (Biofertilizer)

ROLE OF JEEVAMRUTHAM ON GROWTH, YIELD ATTRIBUTES OF NATURAL ROOFTOP GARDEN








Best Practice II: Preparation of Household products

1. Title of the Best practice –Preparation of Household products.

2. Objectives:

1. To enable students to understand the fundamental principles of chemical reactions and their uses in household products preparation.
2. To learn the fundamentals of chemical processes for creating answers to everyday problems.
3. To make the students know the do's and don'ts in home chemicals preparation
4. To cultivate awareness among the students on the eco-friendly and sustainable practices in household products preparation
5. To promote problem-solving skills, critical thinking and adaptability for handling the challenges in the preparation of the chemicals

3. The Context: The innovative Skill Development Programme in Household products Preparation was a response to the evolving needs of students and industry. It bridged the gap between theoretical knowledge and practical application, equipping students with hands-on experience and understanding safety protocols. The programme also integrated eco-friendly practices, aligning with global environmental concerns and promoting responsible chemical use.

Chemical products have various effects depending on their intended use and composition. Household chemical products are formulated for everyday use in residential settings, fulfilling domestic needs like cleaning, personal care, and pest control. These products ensure user safety, ease of application, and efficacy in common household tasks.

4. The Practice: During the practical application of the Skill Development programme and the best practice of the Department of Chemistry on the Preparation of Household products, students participated in a wide range of practical tasks that involved the creation of common household items like bath soaps, pain balms, a Vaseline, surf powder and Phenol (phenyl). .Students learned how to blend petroleum jelly with particular ingredients to produce Vaseline, making sure the recipe satisfies quality requirements. Precise measurement, mixing methods, and knowledge of the relevant chemical properties were taught to the students. Students learnt about the cosmetic industry and honed their quality control skills through this process.

Another main focus of the programme was making bath soap. The complex process of Saponification, which involved mixing fats and oils with alkali to make soap, was taught to students. Choosing the right raw materials, understanding the soap-making reaction, and adding colour and essential oils were all stressed in the curriculum. Students received practical instruction in making soaps that satisfied both aesthetic and quality standards.

For making pain balms, students were taught to blend active chemicals (such camphor or menthol) with appropriate bases while taking solubility and skin absorption rates into account. This exercise improved their pharmaceutical preparation abilities while also teaching them about the need of safety while creating items that are intended to be applied directly to the skin.

Students were supervised by faculty members during the practical sessions. In line with worldwide trends towards ethical production, the emphasis on sustainable practices inspired students to find ecologically sound alternatives in manufacturing. Students were regularly evaluated in order to gauge their development and make sure they were not only understanding the theoretical ideas but also becoming proficient in applying their knowledge in real-world situations. Presenting their formulations helped them refine their

communication skills and made it easier for them to explain their thought processes and choices.

6. **Evidence of Success:** The Practice of Household products Preparation was successful in enhancing students' understanding of chemical principles and their application in real-world scenario. It was appreciated by the Principal, staff and other students. The programme also contributed to sustainable practices and community outreach through eco-friendly household products and educational campaigns. The program's relevance and effectiveness in the field was brought to light finally when the Department of Chemistry kept the products made by the students for sale and income was generated.

Preparation of Household products

1. Soaps
2. Pain Balm
3. Vaseline
4. Surf Powder
5. Phenoil