

Low cost mushroom spawn production

Mushroom entrepreneur Shri. Raymond B. Marwein – a tale to tell:his journey

Mushrooms, especially oyster mushrooms, are highly valued as a health food across Meghalaya. Their cultivation requires minimal labour, space, and investment, making it an increasingly popular agricultural activity in rural, suburban, and urban areas of the state. However, the availability of quality spawn—a critical input for sustainable mushroom cultivation—remains a significant challenge for the industry.

This is the story of Shri Raymond B. Marwein, an unemployed youth from Umsmu village, Ri-Bhoi district, Meghalaya, who holds an M. Pharm degree with distinction. During his first visit to the ICAR Research Complex for NEH Region in Umiam, he was inspired to pursue agri-entrepreneurship. Recognizing the gap between the demand and supply of high-quality mushroom spawn, Shri Raymond decided to address this need by learning scientific production technologies.

He enrolled in a seven-day intensive training program on “Mushroom Spawn Production and Entrepreneurship Development,” organized under the Farmers FIRST project. The program provided him with comprehensive theoretical and practical knowledge, including hands-on experience in tissue culture preparation, substrate development, and the production of mother and commercial spawn. The training also emphasized low-cost methods of spawn production, which were developed by the institute to support small-scale entrepreneurs.

Armed with this knowledge, Shri Raymond established a low-cost mushroom spawn production laboratory in his village. He converted two small rooms into functional workspaces: a 5x4 sq. ft. inoculation room and a 4x4 sq. ft. incubation room fitted with wooden racks. To minimize initial costs, he used conventional equipment, such as a pressure cooker for sterilization, an inoculation hood instead of a laminar airflow cabinet, and a well-maintained room for incubation in place of a BOD incubator.

Starting small, Shri Raymond prepared 500 ml of culture media in two conical flasks. While half of the initial media was contaminated, his determination led to success in producing pure cultures from the samples provided by the institute. With these, he successfully prepared 23 mother spawn packets (250 g each) with a success rate of 91.3%. From this foundation, he produced 230 commercial spawn packets (500 g each) in his first batch.

Currently, Shri Raymond produces approximately 500 packets of commercial spawn weekly. With a consistent demand of 350–400 spawn packets in his neighborhood and nearby villages, he supplies the spawn at a rate of ₹100 per kilogram. Alongside spawn production, he has ventured into fresh mushroom cultivation for tissue culture and as a source for mother spawn production. These mushrooms are also supplied to his homestay business.

To establish his enterprise, Shri Raymond made an initial investment of ₹90,000, which covered infrastructure renovations and labor costs for 120 mandays. Today, his gross monthly income from spawn and fresh mushroom sales is ₹40,000. His long-term vision includes scaling up production with advanced equipment, transforming Umsmu village into a hub for mushroom production, and generating employment for local youth.

Shri Raymond's entrepreneurial journey does not stop at mushrooms. His success has sparked the development of an integrated farming system on his family's land, incorporating piggery, fish culture in two ponds, vermicomposting using spent mushroom beds, and vegetable cultivation. His efforts, coupled with his homestay venture, have created a sustainable and diversified income stream, inspiring other young people in his community to explore opportunities in agriculture and allied sectors.

