Ophiocordyceps sinensis – valuable caterpillar fungus from the Himalayan hills

Ophiocordyceps sinensis (syn. Cordyceps sinensis), family Ophiocordycipitaceae, locally known as ‘yarsha gambu’, is a highly valued medicinal fungus, found growing on the insect caterpillar of Hepialus armoricanus (family Hepialidae) in the higher hills of the Himalayas, including Nepal, China, Tibet and India (Figure 1 a–d). Specimens of this fungus are rare, occurring in the far reaches of the high, cold and arid hills at an altitude between 12,000 and 16,000 ft amsl in Kumaon and Garhwal hills, Uttarakhand. One has to trek about 40–45 km on the steep slopes up to the glacier base. This fungus has high medicinal value and is used in traditional remedies for various physiological disorders. Being a hormone stimulator, Ophiocordyceps is an important anti-aging medicine. Frequent use of this fungus may prevent senile disorder. It is found beneficial in the case of climatic age illness, impotence, emission, neuroasthenia, rheumatoïd, arthritis, cirrhosis, flabby waist and knee. Ophiocordyceps has been in traditional use for the treatment of various diseases like chronic bronchitis, insomnia, hypertension, pneumonia, tuberculosis, pulmonary emphysema, anaemia, night sweat and cough. The cost of natural specimens in the national market is more than Rs 3 lakh/kg, whereas it is sold at more than Rs 5 lakh/kg in the international market.

The Defence Institute of Bio-Energy Research (DIBER), a constituent laboratory of DRDO, has been working on this high-value fungus and has successfully developed a protocol for the mycelium culture of Ophiocordyceps in the laboratory (Figure 1 e). The availability of the specimen in nature is scant. Also, it involves a high labour cost to collect the fungus from its natural habitat. Under such circumstances, laboratory culture of this fungus is the only solution to fulfil the demand. Optimization of the protocol for laboratory production of the mycelium of O. sinensis will prove successful in the preparation of various products from the dried mycelium, which has numerous potential therapeutic applications.


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