

Entomophagy can support rural livelihood in India

Entomophagy, or the consumption of insects, has been practised in India for centuries by several tribes. However, today, such traditional practices are less common. Entomophagy needs to be re-validated and promoted in the near future as food scarcity in India is increasing day by day.

In India, over 65% of the population lives in rural areas where food security has become a problem. By 2020, India's total food production requirement is projected to be around 253.3 mt (ref. 1), but future food supply will be far from sufficient. Poor food distribution and high food prices have added to the misery¹. Gahukar² has reviewed the global situation of entomophagy and suggested its revalidation in regions that are facing acute food shortage. Edible insects are a natural renewable resource of food with nutritional, economic and ecological benefits to the rural people. The high protein content with digestibility as well as some minerals, vitamins, fats and carbohydrates make the insects a perfect food. In fact, insects are the cheapest source of protein compared to animal meat and fish.

States all over India have seen practices of entomophagy for several years. In Arunachal Pradesh, the Nyishi and Galo tribes consume 81 insects³. The most favourable insect life-stages are the caterpillars and pupae of the mulberry silkworm, *Bombyx mori* L. and non-mulberry silkworms (Lepidoptera: Saturniidae), viz. *Antheraea pernyi* (Guerin-Meneville), *Antheraea assamen-*

sis Helfer, *Attacus ricini* Boisd. and *Samia ricini* Donovan^{4,5}.

In the North East region, the Ahom community consumes silkworm pupae in the mature stage, whereas other tribes (Garo, Naga, Bodo, Missing, Rabha, Kachari, etc.) prefer these insects in pre-pupal form⁴. Pre-pupae are removed after the cocoons have been completely formed and are considered a nutritious delicacy.

In Meghalaya, termites are served as a source of proteins and carbohydrates⁵. The sexual forms of termites are popular probably because the protein (87%), carbohydrate (2.7%) and amino acid (6.7%) contents are greater than those in worker forms (82% proteins, 1.3% carbohydrates and 4.7% amino acids)⁶. Further, the mineral content of sexual forms of termites is greater than conventional vegetarian food, salmon fish and broiler chicken⁶.

In Assam, Mizoram, Manipur and Tripura, the cinnamon bug, *Ochrophora (Udonga) montana* (Distant) (Heteroptera: Pentatomidae) is fried in oil and consumed⁷. In Tamil Nadu and Karnataka, winged termites are cleaned, fried and eaten⁸. In Odisha, termites are eaten alone or together with rice⁹.

Considering the current status of food security and future requirement of food, entomophagy may be recommended, particularly during natural disasters and at the starting of the crop season. Insects can be hand-collected in their natural habitats or with simple techniques like light traps. Indoor rearing in houses by rural communities has been found to be

practical because host plants are easily available³, making collection from inaccessible regions unnecessary. If facilities are available, insects and their products can be exported through cooperative societies. When insects are collected/picked up from crop fields, the population of damaging stages is reduced considerably, and in well-managed fields, control measures against insects may not be needed². Community efforts can therefore result in improved livelihood of the local people.

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Why not emeritus fellowships exclusively for teaching?

There is so much of concern expressed in several fora about the shortage of teachers, particularly experienced teachers. But no emeritus fellowship – who constitute the most experienced teachers – is given exclusively for teaching. Every emeritus fellowship demands a research project to be taken up during the tenure. When we badly require people to go to

classes and teach, why this mandatory requirement of research for the grant of an emeritus fellowship? Experienced teachers can better serve as counsellors for students. In addition, they can also give suggestions in view of their experience to research scholars in the department and even help them in writing their thesis. This is a full-time job. Hence,

there must be some emeritus fellowships exclusively for teaching.

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