

Traditional Role of Morels (*Morchella* Spp.) As Food, Medicine and Income in Palas Valley, Pakistan

Hassan Sher¹ and Arif Hussain Shah^{2*}

¹Director, Centre for Plant Sciences and Biodiversity, University of Swat, Pakistan

²Director, Public Health Program, Akamai University, Hilo Hawaii, USA

*Corresponding author: Dr. Arif Hussain Shah, Director, Public Health Program, Akamai University, Hilo Hawaii, USA. (Currently based in Islamabad, Pakistan), Tel: +92-946-770948/53; E-mail: hassan.botany@gmail.com

Received date: November 16, 2014, Accepted date: November 20, 2014, Published date: November 28, 2014

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Editorial

Worldwide morels mushrooms (*Morchella* spp.) are highly cherished and easily recognizable forest resources of edible fungi. Palas valley is one of the most underprivileged areas of the Khyber Pakhtunkhwa province of Pakistan populated by people of Indo-Aryan ethnic origin. Palas valley spread over an area of 4,550 sq. Km and its population is about 90,000 with a density of 100 persons per sq. Km and growth rate of 3.00. "Shin" tribe is the major cast which owns and controls the natural resources of Palas valley while sub-tribe Gujar, nomads and other artifacts work as their workers. Interestingly, as a part of their religious belief, the majority people are strongly associated with their natural environmental resources and use of morels (Hamayun, 2006). Mostly they believed that gathering all or assuasive amount of morel would bring misfortune to the family and to their assets. Such a faith, lead the people to careful collection of morels according to their need as food or for medicinal cure.

During our current survey, different soil samples from morels growing point were collected and analyzed for the physical and chemical features. The soil was studied up to the depth in which mycelium grows downwards; especially the soil layers Aoo, Ao, A1, A2, and A3 were studied. The morels commonly found in Palas valley were: *Morchella esculenta*, *M. conica*, *M. hybrida*, *M. delicosica* and *M. angusticeps*. All the named *Morchella* spp. was found to be an edible source as well as a part of the local healing system to cure different disease states. Morels are established antioxidants having curative properties such as anti-inflammatory, liver tonic, blood purifiers, anti-tumor, and a remedy for digestive disorders, cold, fertility issue and diabetes. Some morels are delicious and added to food as flavoring agents. Several of the folklore medicinal claims have been verified on modern scientific grounds.

The present study was carried out in three sites of the valley selected based on altitudinal variation *viz*: foothills (1000 to 2000 m), middle hills (2000 to 3000 m) and hill tops including pastures (3000 m and above). It was noticed that in Palas valley the area has a fragile landscape, poverty was widely prevalent and local economy was based on agro-pastoral tradition. Mostly, people rely on income and subsistence from livestock followed by wild collection of morels.

It is worth mentioning that collecting and processing morels is an important economic activity in Palas valley and the entire Hindukush

mountainous regions (a part of Himalayas extension, Pakistan). The morel collection involves over 5000 families in the region. In general, the most active mushroom collectors were women and children from middle hills and Gujar communities among the different ethnic groups of mountainous region [1,2]. A total of 14,000 kg morels from the Palas valley were established to be exported annually into national and international markets. It generated significant revenue (US \$343,000 per annum) at the valley level. Regrettably, these collectors use to receive minimum monetary return in the trade chain of morels due to the addition of incremental value by dealers and sometime due the injustice of the middlemen and dealers.

Due to the lack of training and information, the collectors are not able to know the demand or appreciate the real value of morels they are collecting. As a result, there is an increasing pressure on the habitats of morels in the region, and harvesting practices are largely unsustainable and unequal and the trade is declining. The main reasons for decline identified included: quality variation due to poor harvest treatments, unethical trade practices, the middlemen approaches, and availability of materials at competitive prices, and poor preservation and marketing strategies[3]. The data collected during present study included the assessment of morels stock in Palas valley to develop a morels management plan. Recommendations were made to educate the local community on proper harvesting and post-harvesting handling, the effects of free grazing, deforestation, floods and encroachment. Further studies toward finer assessment of the resources may be desirable, especially as they could be built on the present knowledge on the dynamics of forest stocks. Thanking you.

References

1. Hamayun M, Khan SA, Ahmad H, Shin DH, Lee IJ (2006) Morel collection and monitoring: A case study from the Hindu-Kush mountain region of Swat, Pakistan. *Lyonia* 11: 7-13.
2. Saqib Z, Riffat NM, Shinwari IB, Shinwari ZK (2011) Species richness, ethnobotanical species richness and human settlement along a Himalayan altitude gradient: Prioritizing plant conservation in Palas valley, Pakistan. *Pak. J. Bot.* 43: 129-133.
3. Sher H, Aldosari A, Ahmad A, Hugo DB (2014) Economic benefits of high value medicinal plants to Pakistani communities: an analysis of current practice and potential. *J Ethnobiol Ethnomed* 10:71.