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Traditional Community Fishing Festival (Maund Mela) of Garhwal Himalaya, Uttarakhand Using *Zanthoxylum armatum* (Timur)

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Abstract: Human beings have used plants or plant extracts for agriculture, medicine and fishing. Fishing with the help of plant toxin is a common practice in India and this simple or easy fishing method is still practiced in remote areas. In this paper the traditional fishing festival (maund matsya mela) of the Jaunpuri community of Tehri Garhwal, Uttarakhand in Aglar River is described. In this yearly festival, community people used plant (*Zanthoxylum armatum*) as fish poison to catch fishes. The study documented detailed information of the traditional fishing festival Maund Mela. Medicinal plant (Timru), which is used as fish toxicants by the Jaunpuri community and its conservation significance to fisheries in the Jaunpur tehsil of Tehri district, Uttarakhand. The study also focused on awareness of the community people to the medicinal importance of Timru and conservation of aquatic resources of region and other biodiversity.

Key words: Maund · Timru · Community Fishing · *Zanthoxylum armatum* · Traditional Knowledge · Garhwal Himalaya

INTRODUCTION

The Garhwal Himalaya (latitude 29°26' to 31°28' and longitude 77°49' to 80°06') located in the western part of central Himalaya, Uttarakhand, India, is endowed with vast natural freshwater resources. Spread over an area of 30,090 Km^2, the region is well known for its rich biodiversity, ethnic communities and indigenous knowledge systems along with diverse culture, traditions and mythology [1, 2]. The Garhwal region is surrounded by many snow-fed rivers of India. The Alaknanda and Bhagirathi rivers are two major drainage systems constituting the upper Ganga system along with many springs origin streams, rivers and rivulets. This vast drainage network endows rich diversity of fishes provides livelihood for large number of people living in hilly areas of Garhwal. Fish constitutes an important source of food for community peoples. Local people use various conventional methods like (e.g. hammering, knot, herbs & poisoning) to catch fishes for their livelihood and domestic consumption. Utilization of plant as fish poison is very old practice in the history of mankind and several plant poisons have widely used by local people of Garhwal as an easy mean of catching fish or to celebrate the cultural festival as well. However, a sharp decline in the fishery resources has been experienced in past few year within the area [3, 4]. The available literature revealed that plant species with ichthyotoxic properties were used all over the globe as well in whole Garhwal region as fish poison or piscicidal plants. There is no such work has been documented to safeguard aquatic resources including fish species, their environment and the most important medicinally demanded, *Timru*. Hence, this study documented detailed information on the traditional fishing festival (*Maund Mela*), medicinal plant (*Timru*), which is used as fish toxicants by the Jaunpuri community and its conservation significance to fisheries in the Jaunpur tehsil (Tehri Garhwal) of Uttarakhand, India.

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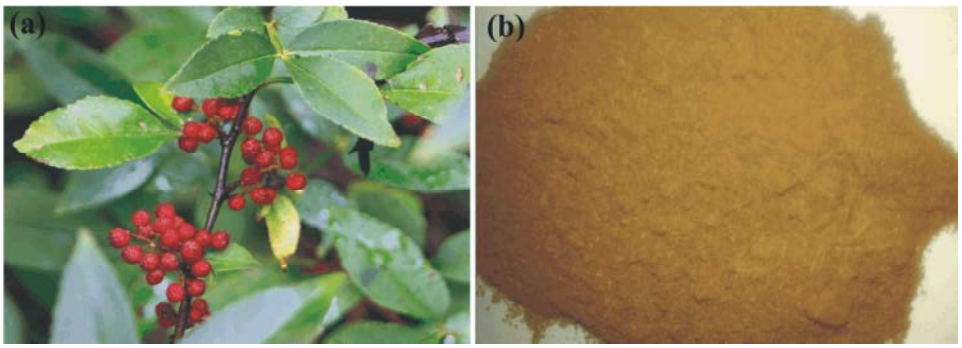

Fig. 1: Timur plant: (a) *Zanthoxylum armatum;* (b) Timur powder used in fishing festival

History of Maund Festival: Traditional Beliefs: The traditional fish folk, *Maund (Matsya) Mela* is a yearly community fishing festival of Gharwal region of uttarakhand, was started around a century back by the ruler of Tehri, Raja Sudarshan Shah, during pre-Independence era. The festival has a historical bearing, the Maharaja used to inaugurate the festival for collecting tax imposed on fishing as Maund. The event was also a place to settle old scores but, due to disputes feuds king stopped the festival. Then, again on the request of villagers and on written consent to maintained law enforcement the king re-inaugurated the event in 1946-1947 [5]. He dedicated one day which usually falls around pre-monsoon period of each year as "Maund" to fishing on the popular demand of the local villagers. This was the opportunity for the villagers to seek blessings from the Maharaja and see him in person. Maund is a local term meaning the state of drunkenness or addiction. The region has its own traditions, festivals and culture. Each year this festival celebrates in different rivers, streams and rivulets of Garhwal region. This unusual fair, attracts thousands of people from local tribal community of Garhwal. Thousands of villagers from Nayar Ghati (Pauri), Jaunpur (Tehri), Rawain (Uttarkashi) and Jaunpur-Bhabar (Dehradun) were participate in this festival. The preparation for the festival begins a month before the actual day of the festival, when one chosen village is given the task to prepare Maund powder using the stem bark, leaves and pounded seed of the "Timru" plant.

Impact of Timur: *Timur* or *Zanthoxylum armatum* DC (syn. *Z. Alatum* Roxb.) is a shrub belonging to the family *Rutaceae* (Fig. 1a & b). Local name of this plant are: *Tejphal* (Hindi), *Tejowati* (Sanskarit), *Mukthrubi* (Manipur) and *Timur* (Nepal) [6]. It is found in the warmer valleys of the Himalaya, ranging between 1000-2100 m above sea level. It also grows in the Eastern Ghats in Orissa and Andhra Pradesh at 1200 m and the lesser Himalayan range in the northeastern part of India (e.g., Naga Hills, Meghalaya, Mizoram and Manipur). *Timur* is used in curing various common ailments such as toothache, common cold, cough and fever, as it is believed to give warmth to the body. To cure toothache, a fresh or dry fruit is pressed over the affected tooth and is kept in position till it loses its pungency. Young shoots of *timur* are used as toothbrushes. Recently people have also started to use powder made from the dried fruit for cleaning teeth. Common stomach complaints are treated with *timur* soup [7]. It contains volatile oil with active constituents such as Linalool, limonene and lignin. It also possesses antilarvicidal, antifungal, hepatoprotective and allelopathic properties.

MATERIALS AND METHODS

The study was documented in Jaunpur block during June 2015. Jaunpur block (30°19'55" N latitude and 78°04'44" E longitude) is situated in Dhanaulti Tehsil of Tehri Garhwal district of Uttarakhand state, India. It is located 38 km towards west from District head quarters Tehri and 34 km from State capital Dehradun towards South. The block is consisting of 266 villages bounded by Mussoorie Tehsil towards South, Thauldhar Tehsil towards East, Dunda Tehsil towards North, Naugaon Tehsil towards North in Table 1. The block is a tribal village of Jaunsari community with population of 72, 219 covering an area of 30,247 Km^2 together with 12,066 household [8]. Jaunsari is principal tribe of the Pandavas family and they claim to be claim to being a pure bred Aryan race and descendants from Pandavas. An important aspect of Jaunsaries culture is festive sports like *Maund Mela*. Aglar River is a major Himalayan tributary of the river Yamuna. It rises as a number of small streams fed by underground water on the western slopes

Table 1: List of villages encircled by Jaunpur block

Village Names				
Aginda	Daangu	Kandajakh	Masras	Sainji
Agyarna	Dabali	Kandi	Mathlaoun Talla	Sartali
Alamus	Dandakibeli	Khairar	Malla	Satengal
Bait	Devan	Khaneri	Matli	Semwalgaon Palla
Bamangaon	Dhakroli	Kharaksari	Mawana	Sendul
Banda Lagga Bait	Dhanchula	Kharson	Mogi	Sinjal
Bandasari	Dhoulagiri	Khas Kudaun	Moldhar	Sirsh
Bangar	Domsi	Khatt	Mundni	Siya Kempti
Banglow Ki Kandi	Dunda	Khera	Munglodi	Suransu
Bangsil	Dwargarh	Khyarshi	Myani	Syalsi
Bel	Fedi	Kokliyalgaon	Nain Gaon	Takarna
Bhaim	Fidogi	Kot-shrikot	Naughar	Tegna
Bhal	kimora	Kund	Nawadidhar	Tator
Bharwa Katal	Gaid	Kund Dasjula	Nawagaon	Tewa,
Bhatoli	Gareth	Kyari	Ontan	Than
Bhatwari	Gawana	Lagrasu	Pali	Thapla
Bhediyana	Gharara	Lagwalgaon	Pantwar	Thatyur
Bhutgaon	Ghena	Lalotna	Papra	Thik
Bhutsi	Ghodakhuri	Malla	Parori	Timliyalgaon
Bhuyansari	Goran	Maid	Pav	Toliya Katal
Bichhu	Hatwalgaon	Mair	Ragargaon	Uniyalgaon
Biror	Haveli	Makhret	Rampur Negiyana	
Bisthaunsi	Jargaon	Manjgaon	Rautukibeli	
Brahmsari	Jaunpur	Marara	Rayat Gaon	
Burari	Jaydwar	Maror	Ringalgarh	
Chamasari	Jinsi	Marora	Sabli	
Chanangaon	Kalaban	Mason	Sadav	

of the ridge separating the drainage of the Yamuna and Bhagirathi to the west of Tehri. Primary information on fishing festival and traditional culture system associated with it was collected through intensive field survey in Aglar Rivers as well as interaction with local participants and prominent citizens from Jaunpur or nearby village for studying traditional beliefs concentrated among people that timur has no harmful effects was also performed through focused group discussion.

RESULTS

The powder is mainly prepared by peeling the bark of the plant and dried for a day. Following that, it is ground in the various gharats or water mills. Because the trees bear fruit during the monsoon season, the berries are associated with the concurrent Krishna Janmashtami festival. The twigs are kept in houses to keep away the evil spirits. Local people use its seeds to make tooth powder. The host village arranges for 8-9 tonnes of Timru powder which is thrown into the River after the customary rituals. The biological potential/significance of throwing 8-9 tones of grounded bark into the river costs to biodiversity of the plant which otherwise could have been used for medicinal purpose. The quantity of powder used does not justify the end of killing fish by using a medicinal plant. The burden is on the ecosystem as it is losing its floral and faunal biodiversity cost to the environment. The Timru consist of different active ingredients (alkaloids, resin, tannin, saponin, nicotine & diosgenin) forms a muddy impenetrable layer over the water surface. The layer depletes the river's dissolved oxygen reserve and suffocates the fish and all other aquatic creatures in it. Once the powder is thrown into the river, the fish are unable to breathe inside the water and so they come right up to the water surface.

The villagers of Jaunpur block usually use cast net and hooks to catch fishes for their livelihood. However, during this maund festival, they practice community fishing. The community fishing festival of Maund is celebrated on 28 June, 2015 into the Aglar rivulet near Pantherkot (Fig. 2a). The festival began through beats of local drums and bagpipes at 11:00 AM along with women folk, cultural program and traditional rituals from ‘Maujkot Patal Ki Tal’ in which 4000 fishermen of Jaunpur participated with enthusiasm and fervour. This year the event was organized by Sivad Patti (20 Villages) around Nainbag area, located within 30 Km from the festival

Fig. 2: Villagers of Jaunpur participated in Maund mela (Aglar-Yamuna valley): (a) Aglar River-festival site (b) Natives gathering at Aglar River; (c) Applying of *Timur* powder.

Fig. 3: Fishing during festival at Aglar River: (a) Participants catching fish using traditional gears; (b) Fish species collected by the community people; (c) Insects collected with fish species.

stretch [9]. The villagers think that it was a festival when people danced, made merry and met old friends and relatives from various villages (Fig. 2b). Tonnes of Timru powder were applied around 12:45 PM into the Aglar rivulet to paralyse the fish at a pre-destined place called *Maunkot* after which the chaotic rush to catch the fish was on, thus heralding the festival, *Maund* (Fig. 2c). The Approximately 500 kg of fish was harvested by the participants against the usual 1-2 tons, which may be due to reduced rainfall, water flow and loss of fish habitats including *Schizothorax* spp. (Locally Asela) was abundantly caught, followed by *Mastacembalus armatus* (locally gooj or baam), *Tor* spp. (locally mahseer or dhansvi), *Barilius* spp., *Glyptothorax* spp., *Garra* spp., *Labeo* spp. etc. and 25 snakes were also killed (Fig. 3 a, b & c). Most of the fish species caught were below their 1st sexual maturity in between 100g to >4-6 kg. The festival fishing lasted till 4 PM and only 10% of the participants caught fish using various gears and methods, while the majority returned empty-handed and disappointed.

Fig. 4: Awareness campaign in Aglar River and festival coverage by the local daily newspapers: (a) Displaying poster to local people for conserving fish species; (b) Raising awareness among the community people participated in the fishing festival.

DISCUSSION

During the festival, intervention program was conducted by National Bureau of Fish Genetic Resources (NBFGR) to create mass awareness among the local community people who participated in the fishing festival for conservation of fish species (Fig. 4a). The issue was also discussed with, the Chairman of State Biodiversity Board, Uttarakhand for conserving fish biodiversity and empowering Biodiversity Management Committee (BMC) in the region. A documentary film on maund mela was prepared during the festival and a pamphlet on "Fish conservation in Hill areas" (Fig. 4b) was also prepared and distributed to create public awareness in the region. The event was well covered by several local media (Times of India, Dehradun and Gahwal post) in their news for conservation of fish species in the region.

Biodiversity of aquatic animals including cold water fisheries sector in open water bodies, is threatened and several indigenous fish species are on the verge of extinction, due to an increasing number of human interferences including, harmful fishing practices using plant toxin and extracts etc. The plant toxins have an impact on the resources and may also affect rivers or streams. The study brought out some of these issues and identified a number of follow up actions, including some initiatives to raise the profile of *Timru* plant as medicinal worth and strategies for conservation of fishery resources within the Garhwal region.

CONCLUSION

Community people all over the globe have discovered numerous plants species with toxic properties have an impact on the target resources and may also affect non target species of river. This nature of fishing practices due to lack of awareness, knowledge and resources may also have impact on the environment. So far, it appeared that limited concern were given for development of livelihoods of rural community involving fisheries and aquaculture in the Garhwal Himalayan region, It is time to give more emphasis on the role of aquatic resources in poverty alleviation and sustainable livelihoods of people in the region. The following scientific and policy interventions may be useful in maintaining a sustainable fishery from the Aglar River:

- The Fisheries Development Department, State Biodiversity board and local NGO,s should organize awareness programs for fishermen to highlight the importance of fish diversity, fishery resources sustainability and impact of destructive/illegal fishing methods on fishes etc., in various parts of the region.
- Reduce amount of timur powder as toxin.
- Empower BMC (Biodiversity Management Committee) in the region for imposing fines and providing training with special orientation to fishery resources sustainability and impacts of destructive/illegal fishing methods on fishes in order to develop and conserve natural resource.
- To promote maund festival among tourists and anglers as a heritage festival or central tourist event.
- Conduct training programmers for BMC, Panchayat and local school teachers for awareness, sustained communal and management efforts symbolically with less amount of powder in small man made pockets and patches.

The festival celebrated by the Jaunpuri community of the district based on the indigenous traditional culture system passed on from generations since, independence was very popular among the local people of the hill region. Nevertheless, it is important that National

Biodiversity Authority (NBA) and State Biodiversity Board support the effort to survey indigenous communities widely before they completely lose their traditional culture and guide them about the conservation significance of aquatic resources and biodiversity.

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