



Buckwheat (*Fagopyrum* sp.) in Turtuk Valley (Ladakh India)

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ABSTRACT

Buckwheat was one of the domesticated crop in Asia and Was used as a food crop in China 5000 – 6000 years ago (Meyes and Meinke, 1994). Buckwheat grown as a minor crop in Turtuk valley, is cultivated as a summer crop in some part of Ladakh and Baltistan (now in Pakistan). There are different types of Buckwheat available in Turtuk. i.e. common buckwheat called (Geyass) in local language and Tartary buckwheat (Brow) and wild buckwheat (Khebrow) or weed. First two varieties of buckwheat are mostly grown in the farmers field through the Turtuk valley.

Keywords: Buckwheat, *Fagopyrum*, Ladakh, Turtuk.

Introduction

Common Name : Buckwheat

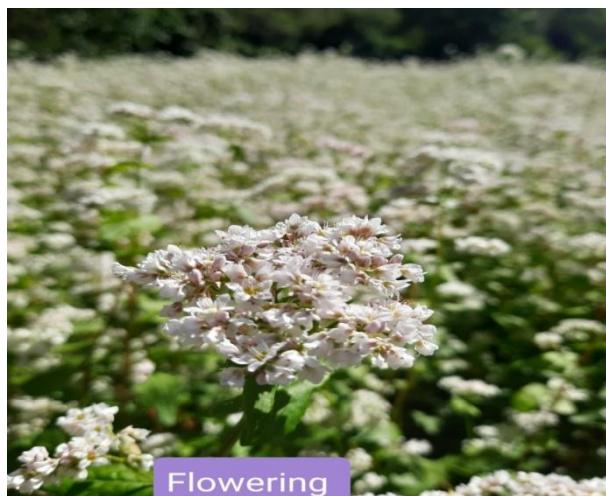
Botanical Name : *Fagopyrum* spp.

Common Buckwheat: *Fagopyrum esculentum* L. (Geyass)

Tartary Buckwheat : *Fagopyrum tataricum* (Brow)

Family : Polygonaceae





Buckwheat is believed to be cultivated first in the Himalayan region of Asia from where spread to other part of the world (Krotor 1960) buckwheat provides food security to traditional, resource poor farmers during 1900s. Buckwheat research started seriously from 1980 when International Buckwheat Research Association (IBRA) was formed. IBRA has been publishing a separate journal *Fagopyrum* the chief buckwheat producing countries are Soviet Republic, Japan, Canada, USA, China, Poland, Brazil, Hungary, Korea, India, Iran, Afghanistan, Nepal, Pakistan, Germany, Switzerland, Italy, France, UK Austria, and Australia, (Kreft 1983).

In India buckwheat production is confined to moist and temperate part of Himalayas Jammu & Kashmir, Himachal Pradesh, Sikkim, Hilly region of UP, Assam and some part of Tamil Nadu and Kerala.

Both common and tartary buckwheat are cultivated as a summer crop in Turtuk valley during last week of July to first week of October.

However in Turtuk valley Buckwheat has become endangered species due to lack of labours, urbanization and modernization etc.

Materials and Methods

Two varieties of buckwheat viz. *Fagopyrum esculentum* and *Fagopyrum tataricum*, were collected from three different locations i.e. Bogdang, Turtuk and Tyakshi of Turtuk valley. The locations were selected on the basis of differences in temperature. Distance between Turtuk and Bogdang is 20 km. In Bogdang buckwheat harvested one week earlier to Turtuk and Tyakshi due to high temperature.

Table: Average climatic conditions during cropping season at different locations of the valley.

Name of village	Altitude (Ft)	Temperature ⁰ C	RH%	Soil Moisture%	Rainfall cm/year
Bogdang	9300	20- 28	-	-	50-70 cm
Turtuk	9000	18- 26	50	30-70	50-70cm
Tyakshi	8900	18- 26	-	-	50-70 cm

STUDY AREA

Turtuk valley is situated at the bank of shayok river between two trans-Himalayas. During summer season the glaciers on these mountain tops melt and become main source of water which is harvested and is utilized for human, animals consumption and summer cultivation in the valley.



Results

In Turtuk valley of Ladakh where two species of buckwheat are cultivated *i.e.* common and Tartary buckwheat. Common buckwheat has white colour flowers with broad leaves, weak tap root and erect reddish cylindrical succulent stem. Plant produces multiple branches along the stem heart shaped leaves, a small flower at the end of the branches flowers has pink anthers.

Buckwheat is short season crop that grows sandy loam, loam soil and well in low fertility or acidic soil. Too much fertilizer especially nitrogen reduces the yield.

Cultivation

As the soil of the region contains lot of stones and pebbles, all trash and stone from the field should be removed. The soil must be well drained. Buckwheat is sensitive to frost so it cannot be planted as early or late. In Turtuk region it is best sown after barley harvest *i.e.* during last week of July by broadcasting methods and indigenous ploughing with animals. Farm yard manure and human waste manure should be applied all the corner of the field properly.

Hand weeding should be done 25 days after sowing before 1st Irrigation.

First Irrigation should be applied 28 days after sowing when 3-4 leaves appear and seedlings reach 6-7 inches height.

After 45 days of sowing, plants start blooming.

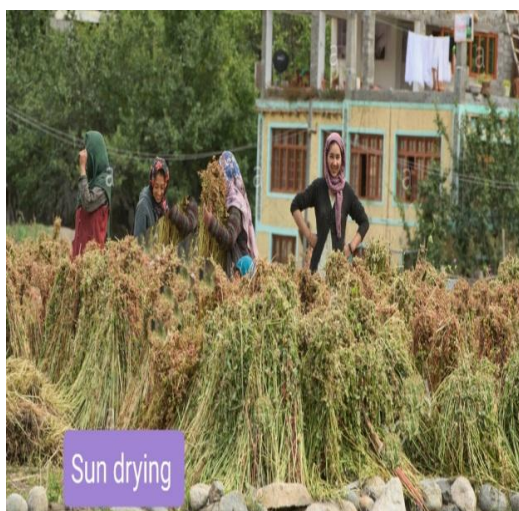
Crop is ready for harvest 70 days after sowing which is practiced manually using common sickle.

Harvested produce is sun-dried in open field for nearly one week.

Threshing is done to separate seeds from dried crop by beating with stick.

Seed should be stored in a can or wooden box for long term.

Water mill which is used to grinding the grains into flour.





Threshing



Watermill



Pancakes



Muffin

Uses

The use of pure rutin from buckwheat is considered safe and harmless (Clemetson 1976) . However, there is a danger of the disease fagopyrism when grains are consumed in large amounts. Other uses of the crop are documented here on the basis of common knowledge in this region . In Turtuk valley flour is made from the seeds that is used in bread making , pancakes, and muffins /Marzanetc.)young leaves are use as a Vegetables. Buckwheat is used in Turtuk valley and other parts of the world for controlling diabetes, heart disease and high cholesterol, being rich in fiber it is used for regular bowel movements. However, the scientific evidence/s to support these uses are not available. Buckwheat can provide agronomy benefits to crop rotation for breaking up diseases cycle.

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