Traditional method of Chuli oil extraction in Ladakh

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Chuli, the wild apricot, growing abundantly in trans-Himalayan Ladakh yields bitter kernels called Khante which are utilized primarily for extraction of apricot oil by the aboriginal communities. In remote villages, apricot oil is used for cooking, religious, cosmetic and medicinal purposes. The paper describes the traditional method for extraction of Chuli oil.

One kg apricot kernel yields about 35-37% oil. The oil is light yellow in colour and has a typical apricot odour.

Keywords: Chuli, Apricot oil, Traditional oil extraction, Ladakh

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Apricot, the major fruit crop of Ladakh grows in an area of 695 ha and has a production of 2906.2 metric ton1. Generally, the wild apricot called Chuli, is found growing in abundance as seedling trees. Chuli fruits are sour and cannot be used for table purposes. Also, the kernel or Khante, which is obtained from the wild apricot, is bitter & sour and cannot be consumed as dry fruit. For this reason, it is used primarily for oil extraction and the left over meal or cake called, bachcha is used as animal feed after it is boiled. The apricot oil has immense medicinal properties and is used for cooking after it has been boiled properly, for lighting prayer lamps and also for cosmetic uses2. Ladakh is located at an altitude of 2750-3960 m above MSL, which remains landlocked for 7 months in a year during the frozen winters.

The fragile economy of the region is dependant primarily on agriculture and horticulture. Apricot trees bear fruit from June to August. Fruiting begins early in the lower altitudes of Kargil and Turtuk, etc. while it occurs towards the end of the season in the higher altitudes of Leh. The sweet apricot varieties like Halman, Rackheykarpoo, Afghani, Shakarpa, etc., are used for table purposes and for drying, while the sour varieties, which are of wild seedling origin are sun dried and used as animal feed3. The sweet kernels from the sweet varieties are sold in the market as dry fruit but the bitter kernels (Khante) are collected and stored for extraction of oil during the off-season.

Methodology

The stone or seed of apricot stored in gunny bags are soaked in water overnight to facilitate destoning to obtain the kernels. Destoning is done manually with the help of rounded stones and is a very arduous task. The kernels are sun dried for a couple of days. According to the locals, the drier the kernel better is the extraction of oil. Dried kernels are then ground with the help of a stone on a rock (called tal tsik), which has a slight depression along the centre and a rough surface (Fig. 1). The process is repeated until soft dough is formed. Another rock called ton tsik is used for extraction of the oil from the dough. This is a flat rock with its edges very slightly raised and it has a cup shaped depression on the centre and a rough surface (Fig. 1). The process is repeated until the oil come out as the dough is pressed and collects in the cup shaped depression. This process is repeated

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Flow chart of apricot oil extraction by traditional method in Ladakh

1. Destone apricot seed with a rock
2. Dry kernel in sun for 1-2 days
3. Grind dried kernels on rock (tal tsik) till a dough is formed
4. Light fire under the extraction rock (ton tsik)
5. Wash with water until clean
6. Wait till it is heated to about 100°C
7. Place dough on extraction rock and moisten it with about 50-75 ml water
8. Press dough with hands moving progressively towards the cup shaped depression
9. Oil begins to come out of the dough and collects in the cup shaped depression
10. Scoop out oil with spoon and collect in a bowl at short intervals
11. Repeat process 2-3 times for maximum extraction of oil
12. Break the remaining cake or meal (bachcha) in pieces and leave to dry in sun
13. Grind into a fine powder and a form dough once again
14. This is used for oil extraction as per the procedure followed above
15. 3 or 4 times until the dough hardens with the removal of the oil. The oil is removed with the help of a spoon at short intervals and collected in a bowl (Fig. 3).

The hardened dough is then broken into small pieces and sun dried for a couple of days. This is once again ground into a fine powder on the tal tsik until it forms a dough again. Oil extraction is repeated a couple of times following the procedure as mentioned above in order to ensure maximum recovery of oil from the kernels. The dough, which is left after extracting the oil, called bachcha is used as animal feed supplement after boiling it properly. It has been experienced that bachcha fed without boiling is toxic and causes death of animals. Although no scientific analysis has been done so far it is believed that the bitter kernels yield cyanogenic compounds, which are toxic for animal consumption.

Results and discussion

The local tribal farmers in remote villages follow this method for oil extraction and feel that oil extracted by modern methods does not give the typical apricot odour in the oil, which is obtained following the traditional method. However, this is decidedly a more tedious and time consuming method. On an average it takes about 2-3 hrs for extraction of oil from 1 kg kernel. Recovery of oil is about 30-35%. The oil has a typical apricot odour and is light yellow in colour. The only disadvantage is that it is slightly turbid. This oil is generally packed in glass bottles and sold in the local market. Apricot oil is a valuable product with large industrial potential. In the remote villages of Ladakh, the aboriginal communities adopt the traditional method of oil extraction, which they take up in the cold winter months when no other agricultural activity is possible.
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