



Timur (*Zanthoxylum armatum* DC) Essential Oil May Cure Pneumonia

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- **Introduction**
- *Zanthoxylum armatum* is a small xerophyte tree usually found in the Hilly region of Nepal.
- The seed of *Z. armatum* is a very important spices and flavoring agent in Nepali kitchen.
- Timur is highly demanded for tooth care purpose in South Asia.
- Essential oil of Timur shows anti-inflammatory, antibacterial, antifungal, larvicidal, anticancer and hepatoprotective activity.



- Local people use timur against respiratory disease also.
- In this research work we have done extraction of essential oil of Timur from Kailash landscape area, chemical profiling of essential oil and

antimicrobial activity of essential oil against pneumonia causing bacteria.

Material and Methods

Essential oil of dried seed was prepared by water distillation method using Clevenger apparatus.

Two bacteria *Salmonella typhi* and *Klebsiella pneumonia* were used for the antibacterial test.

These strains were cultured according to their specifications.

Essential oil was diluted with 50% DMSO and zone of inhibition was analyzed with positive and negative control.

Chemical profiling of the essential oil was done using GCMS technique.

Results

S. N.	Name of Bacteria	Zone of Inhibition
1	<i>Klebsiella pneumonia</i>	58 mm
2	<i>Salmonella typhi</i>	No inhibition

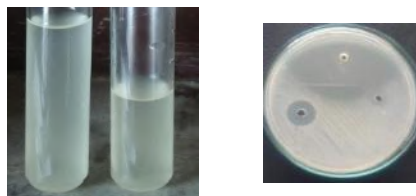


Fig: a) Essential oil of Timur b) antibacterial activity of Timur

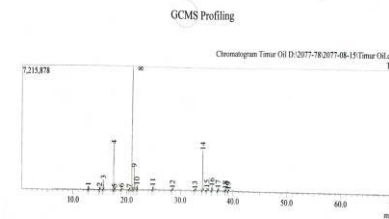


Fig: GC chromatogram of EO of Timur

According to GC-MS analysis, essential oil of *Z. armatum* contained 48.39% linalool, 20.36% limonene, 12.67% cinnamate, 6.35% alpha-Thujone as a major constituent.

Conclusion:

GC-MS analysis of essential oil showed that it is a good source of linalool.

Due to the high market value of linalool, we can utilize Timur oil to isolate linalool from it.

Antimicrobial study of essential oil shows high inhibition against the *Klebsiella pneumonia*.

This research work shows Timur oil is also effective against pneumonia.

Further study on the effectivity of Timur oil against the different bacteria of pneumonia will be very interesting work.

Reference:

- Bhatt, V., Sharma, S., Kumar, N., Sharma, U., & Singh, B. (2017). Chemical Composition of Essential Oil among Seven Populations of *Zanthoxylum armatum* from Himachal Pradesh: Chemotypic and Seasonal Variation. *Natural Product Communications*, 12(10), 1934578X1701201030.
- Singh, T. P., & Singh, O. M. (2011). Phytochemical and pharmacological profile of *Zanthoxylum armatum* DC. - An overview. *IJNPR Vol.2(3) [September 2011]*.