

Table 4: HPTLC data

Track No.	Sample Track details	Applied Vol. on TLC plate	Area Under the Curve (AUC) for Sanguinarine band
1.	BN	4 μ L	Nil
2.	BN95	4 μ L	607
3.	BN90	4 μ L	925
4.	Sanguinarine Standard	1 μ L-16 μ L (applied as per linearity range)	550-3865
5.	BN85	4 μ L	1463
6.	BN80	4 μ L	1683
7.	BN75	4 μ L	1802
8.	AM	4 μ L	3410

CONCLUSION:

These sets of experiments have given a scale for measurements of *A. mexicana* seeds as an adulterant present in *B. nigra* seeds. Changes of different physical properties indicate the changes of percentage of adulteration. These experimental results cumulatively may be considered as a quality control check post for identification and determination of adulterant present in authentic sample.

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CONFLICT OF INTEREST:

Authors of this manuscript declare that there is no conflict of interest associated with this article.

REFERENCES:

- [1] N. V. Bringi. Non Traditional Oilseeds and Oils of India. Oxford and IBH Publishing Co. Pvt. Ltd., 1987.
- [2] Anonymous. A scheme of Training Manual on Good Agricultural Practices for Fruits and Vegetables. Food and Agriculture Organisation of the United Nations, 2016.
- [3] S. N. Sarkar. Isolation from Argemone oil of dihydrosanguinarine and sanguinarine: Toxicity of sanguinarine. *Nature*, 1948, 162: 265-6.
- [4] M. Das, Khanna S. K. Khanna, Clinicoepidemiological, toxicological, and safety evaluation studies on argemone oil. *Critical Review in Toxicology*, 1997, 27: 273-97.
- [5] N. N. Sood, Sachdev M. S. Sachdev, M. Mohon, et al. Epidemic dropsy following transcutaneous absorption of Argemone mexicana oil. *Trans R Soc Trop Med Hyg.*, 1985, 79: 510-2.
- [6] L. R. Tomar, Raizada A. Raizada, Yadav A. Yadav, et al. Epidemic dropsy 2013: case series, *Trop Doct.*, 2015, 45: 137-9.
- [7] P. Ghosh, M. M. Krishna Reddy, R. B. Sashidhar. Quantitative evaluation of sanguinarine as an index of Argemone oil adulteration in edible mustard oil by High Performance Thin Layer Chromatography. *Analytical, Nutritional and Clinical Methods*, 2005, 91: 757-64.
- [8] K. S. Maruti, R. B. Anand, A. M. Wahile, et al. Evaluation of edible oils for Argemone mexicana seed oil adulteration. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 2011, 2: 927-36.
- [9] K. B. Challagundla, S. K. Khanna, M. Das. Adulteration of Mustard Cooking Oil with Argemone Oil. Do Indian Food Regulatory Policies and Antioxidant Therapy Both Need Revisitation. *Antioxidant and Redox Signaling*, 2007, 9: 515-25.
- [10] A. K. Shukla, A. K. Dixit, R. P. Singh. Detection of Argemone oil in Mustard oil. *Journal of Oleo Science*, 2005, 54: 81-3.
- [11] Anonymous. The Ayurvedic Pharmacopoeia of India. Ministry of Health and Family Welfare, Government of India, 1990.
- [12] Anonymous. Quality Control Methods for Herbal Materials. World Health Organization, 2011.
- [13] E. Reich, A. Schibili. High Performance Thin Layer Chromatography. Thieme Publication, 2006.
- [14] M. Sajewicz, T. Kowalska, J. Sherma. *Advances in Chromatography*. Taylor and Francis, 2016.
- [15] D. M. Bliesner. *Validating Chromatographic Methods- A practical guide*. John Wiley and Sons, 2006.