Pharmacogn. Res., 2026; 18(2):609-615.
https://www.phcogres.com

Original Article

GC-MS Based Phytochemical Profiling and Pharmacological Evaluation of *Cynodon dactylon* (Durva) Extracted in a Sesame Oil (Tila Taila) Base

Santosh Yallappa Mudakappagol[1,*], Raj Joshi[1], Akshaya Kumar[1], Ujjwal Gupta[2]

[1]KAHER's Shri B. M. Kankanawadi Ayurveda Mahavidyalaya, Shahapur, Belagavi, Karnataka, INDIA.
[2]Sri Sai Ayurvedic Medical College & Hospital (SAMC) Sarsol, G. T. Road, Aligarh, Uttar Pradesh, INDIA.

ABSTRACT

Background: Durva Taila is a classical Ayurvedic formulation prepared by processing the fresh juice of Durva (*Cynodon dactylon*) in *Tila Taila* (*Sesamum indicum oil*). It has long been utilized to treat inflammatory diseases, bleeding disorders, and wounds. Its chemical components' scientific evaluation aids in bridging the gap between conventional wisdom and contemporary pharmacology. **Objectives:** To analyze the chemical composition of Durva Taila prepared in *Tila Taila* base using Gas Chromatography–Mass Spectrometry (GC-MS). **Materials and Methods:** *Durva Taila* was prepared according to the classical Ayurvedic Taila Paka procedure, using Tila Taila as the base. The prepared formulation was analyzed by Gas Chromatography–Mass Spectrometry (GC-MS), and the chemical constituents were identified by comparing the obtained mass spectra with those available in the NIST library. **Results:** The analysis revealed the existence of various phytoconstituents, such as fatty acid, esters, hydrocarbons and phytosterols. The principal compounds identified were 2,4-Decadienal, Palmitic Acid, Decanal, Phytol, Erucic acid, β-Sitosterol acetate. These components have been found to have anti-inflammatory, antioxidant, antimicrobial, wound-healing, and haemostatic effects. **Conclusion:** The GC-MS profiling of Durva Taila, formulated in a Tila Taila base, indicated the existence of various bioactive compounds consistent with its conventional therapeutic uses.

Keywords: *Cynodon dactylon*, Durva Taila, GC-MS, Phytoconstituents, Tila Taila.

Correspondence:
Dr. Santosh Yallappa Mudakappagol
MS (PhD) Ayurveda, Professor,
KAHER's Shri B. M. Kankanawadi Ayurveda Mahavidyalaya, Shahapur, Belagavi-590003, Karnataka, INDIA.
Email: drmysantosh@gmail.com

Received: 03-11-2025;
Revised: 29-12-2025;
Accepted: 12-02-2026.

INTRODUCTION

Ayurveda, the traditional system of Indian medicine, has described numerous plant-based formulations for health promotion and disease management. Among these, *Taila Kalpana* (medicated oils) are considered highly significant due to their dual role in both therapeutic efficacy and drug delivery. The base oil not only acts as a vehicle but also facilitates deeper tissue penetration and enhances the bioavailability of active phytoconstituents (Sharma, 2001). *Durva* (*Cynodon dactylon* Linn.), commonly known as Bermuda grass, is widely mentioned in Ayurvedic texts for its *stambhana* (hemostatic), *shothahara* (anti-inflammatory), and *vrana-ropaka* (wound-healing) properties (Sharma, 2015). Modern studies have reported that *Cynodon dactylon* contains alkaloids, flavonoids, triterpenoids, sterols, and phenolic compounds, which exhibit antimicrobial, antioxidant, and wound-healing activities (Patel & Patel, 2012; Majdi, Dastan, & Maroofi, 2016).

Tila Taila (*Sesamum indicum* oil) is regarded as the best base (*sneha dravya*) for medicated oil preparation due to its stability, deep penetrative action, and ability to potentiate the therapeutic properties of the added drugs (Sharma, 2015). *Durva Taila*, prepared by processing the fresh juice of *Durva* with *Tila Taila*, is traditionally indicated in wounds, bleeding disorders, and inflammatory conditions (Sharma, 2015). Despite its classical importance, there is limited modern analytical data on its phytoconstituents.

Gas Chromatography–Mass Spectrometry (GC–MS) is a widely used analytical tool for identifying volatile and semi-volatile compounds in herbal formulations, providing valuable insights into the bioactive components responsible for therapeutic efficacy (Adams, 2007; Pandey, Tripathi, & Sharma, 2014).

The present study was designed to analyze the chemical composition of *Durva Taila* prepared in *Tila Taila* base using GC–MS. The study aims to identify phytoconstituents that may correlate with its traditional uses, thereby establishing a bridge between Ayurvedic knowledge and modern scientific validation.

DOI: 10.5530/pres.20260164

Objectives

To evaluate the phytochemical composition of Durva Taila prepared in Tila Taila base through Gas Chromatography–Mass Spectrometry (GC-MS) analysis and to establish its possible pharmacological relevance.

MATERIALS AND METHODS

Raw Materials

- **Durva (*Cynodon dactylon* Linn.)**: Fresh whole plants were collected locally and authenticated by the Department of Dravyaguna.
- **Tila Taila (*Sesamum indicum* Linn. oil):** Cold-pressed sesame oil of pharmacopoeial grade was procured and authenticated as per standards.
- **Other materials:** Potable water was used as per classical method.

Preparation of Durva Taila

Durva Taila was prepared by classical *Sneha Kalpana* method.

Durva *swarasa* (fresh juice) was extracted, and Durva *kalka* (paste) was prepared.

Tila Taila was taken as the base oil. The ratio *Taila: Kalka: Swarasa* was maintained as 1: ¼: 4.

The mixture was subjected to mild heating with constant stirring until attainment of *Madhyama paka lakshana*.

The oil was filtered, stored in amber-colored bottles, and preserved at room temperature.

GC-MS Analysis

- **Instrument:** Shimadzu QP-2010 Ultra GC-MS.
- **Column:** RTX-5MS capillary column (30 m × 0.25 mm ID × 0.25 µm).
- **Carrier gas:** Helium, flow rate 1 mL/min.
- **Sample preparation:** Oil diluted with hexane (1:100 v/v); 1 µL injected in split mode (1:20).
- **Temperature program:** 60°C (2 min hold) → 280°C (10 min hold) at 10°C/min.
- **MS conditions:** 70 eV ionization energy; scan range m/z 40–600.
- **Identification:** Peaks were compared with NIST library.

Data Interpretation

Identified compounds were tabulated with retention time, molecular weight, and peak area. Pharmacological activities were compiled from available literature.

RESULTS

The GC-MS profiling of Durva Taila prepared in Tila Taila base revealed the presence of several compounds belonging to fatty acids, esters, hydrocarbons, alcohols, and sterols. Many of these phytoconstituents possess well-documented pharmacological activities, which support the traditional therapeutic applications of Durva Taila in Ayurveda. Chromatogram taila taila Base Durva taila mention in Figure 1, Retention time of compound of 2,4-Decadienal ($C_{10}H_{16}O$) mention in Figure 2, Retention time of compound of Decanoic Acid ($C_{10}H_{20}O_2$) mentioned in Figure 3, Retention time of compound of Palmitic Acid ($C_{16}H_{32}O_2$),1,10-Decanediol ($C_{10}H_{22}O_2$) mentioned in Figure 4. Pharmacological Activity of GC-MS identified compounds of Durva Taila prepared in Tila Taila base mentioned in Table 1, GC-MS identified compounds of Durva Taila prepared in Tila Taila base mentioned in Table 2.

DISCUSSION

2,4-Decadienal ($C_{10}H_{16}O$) exerts its nematicidal activity by disrupting the cellular membranes of nematodes, leading to impaired motility and cell death (National Centre for Biotechnology Information [NCBI], 2025a). Its apoptosis-inducing effect involves activation of mitochondrial pathways, triggering caspase cascades that result in programmed cell death. Additionally, it causes vasoconstriction by enhancing calcium influx in vascular smooth muscle, increasing vascular tone (NCBI, 2025a).*p-Menthane-3,8-diol* ($C_{10}H_{20}O_2$) acts by disrupting microbial cell membranes, leading to bacterial lysis, while its anti-inflammatory effect is mediated via inhibition of pro-inflammatory cytokines like TNF-α and IL-6. It also stabilizes cell membranes and reduces oxidative stress (NCBI, 2025b). *Palmitic acid* ($C_{16}H_{32}O_2$) inhibits prostaglandin-E_2 9-reductase, reducing prostaglandin-mediated inflammation, while also modulating thromboxane A_2 synthesis, affecting platelet aggregation. Its fatty-acid nature integrates into membranes, influencing cellular signaling (NCBI, 2025c). *Pentadecanoic acid* ($C_{15}H_{30}O_2$) functions primarily as a fatty acid metabolite, incorporating into lipid bilayers to maintain membrane fluidity and participate in energy metabolism (NCBI, 2025d). *Methyl oleate* ($C_{19}H_{36}O_2$) serves as a fatty acid ester that modulates lipid metabolism and cell membrane composition, indirectly influencing inflammatory signalling and cellular energy processes (NCBI, 2025e). *1,10-Decanediol* ($C_{10}H_{22}O_2$) exhibits anti-inflammatory effects by inhibiting pro-inflammatory mediators and acts as an antioxidant by scavenging reactive oxygen species. It also functions as a human metabolite, participating in normal cellular metabolic pathways (NCBI, 2025f). *Nonanoyl chloride* ($C_9H_{17}ClO$) has an uncharacterized mechanism of action but may react with nucleophilic sites in biomolecules, contributing to biological effects. *Decanal* ($C_{10}H_{20}O$) exerts vasoconstriction by promoting calcium influx in smooth muscle; antitussive and antispasmodic

Table 1: Pharmacological Activity of GC-MS identified compounds of Durva Taila prepared in Tila Taila base.

Compound	Molecular Formula	Pharmacological Activity
2,4-Decadienal	$C_{10}H_{16}O$	Nematicide and an apoptosis inducer, Vasoconstriction.
p-menthane-3,8-diol	$C_{10}H_{20}O_2$	Anti-inflammatory, antibacterial agent.
Palmitic Acid	$C_{16}H_{32}O_2$	prostaglandin-E2 9-reductase) inhibitor, fatty acid, thromboxane A2 synthesis.
Pentadecanoic Acid	$C_{15}H_{30}O_2$	Fatty acids.
Methyl Oleate	$C_{19}H_{36}O_2$	Fatty acids.
1,10-Decanediol	$C_{10}H_{22}O_2$	Anti-inflammatory agent, an antioxidant and a human metabolite.
Nonanoyl chloride	$C_9H_{17}C_lO$	Unknown.
Decanal	$C_{10}H_{20}O$	Antipruritic drug, an antitussive and an antispasmodic, Vasoconstriction.
pentacosane	$C_{25}H_{52}$	Plant metabolite.
10-Undecenoic acid	$C_{19}H_{36}O_2$	Antiproliferative agent.
N-decanal	$C_{10}H_{20}O$	Anti-inflammatory, analgesic or anesthetic effects
2-Octanone	$C_8H_{16}O$	Metabolite antibiotics.
Lavandulyl	$C_{10}H_{22}O$	Antibacterial, antifungal, carminative (smooth muscle relaxing), sedative, antidepressive, Metabolite in cancer metabolism.
Octanal	$C_8H_{16}O$	Metabolite.
2-Tridecanone	$C_{15}H_{30}O$	Flavouring agent.
Phytol	$C_{20}H_{40}O$	Antinociceptive, antioxidant, anti-inflammatory, antiallergic effects.
1-Nonadecanol	$C_{19}H_{40}O$	Antibacterial and antifungal.
1-Hexacosanol	$C_{26}H_{54}O$	Anti microbial.
Palmitin	$C_{19}H_{38}O_4$	Algal metabolite, antimicrobial antioxidant antifungal.
17-octadecynoic acid	$C_{18}H_{32}O_2$	Anti-inflammatory, acne reductive, skin-lightening and moisture retentive properties.
Erucic acid	$C_{22}H_{42}O_2$	Fatty acids, anti inflammatory, anti oxidant, thromboxane A2 synthesis.
β-Sitosterol acetate	$C_{31}H_{52}O_2$	Anti-inflammatory, promotes wound contraction, collagen synthesis, angiogenesis), immunomodulatory.

effects are mediated via modulation of neural reflex pathways. Its antipruritic effect involves inhibition of sensory nerve activation (NCBI, 2025g). *Pentosane* ($C_{25}H_{52}$) acts as a plant metabolite forming protective waxy layers and modulating cell membrane hydrophobicity, contributing to barrier and defense functions (National Center for Advancing Translational Sciences [NCATS], 2025). *10-Undecenoic acid* ($C_{19}H_{36}O_2$) exhibits antiproliferative activity by inducing apoptosis and cell-cycle arrest in abnormal or pathogenic cells-*Decanal* ($C_{10}H_{20}O$) shows anti-inflammatory and analgesic effects by inhibiting prostaglandin synthesis and modulating peripheral sensory neurons (NCBI, 2025h). *2-Octanone* ($C_8H_{16}O$) acts as a microbial metabolite with antibacterial properties, possibly by disrupting microbial energy metabolism or cell membrane integrity (NCBI, 2025i). *Lavandulyl* ($C_{10}H_{22}O$) provides antibacterial and antifungal effects by disrupting microbial membranes; its carminative and sedative effects involve modulation of smooth muscle and central nervous system signalling (Betlej *et al.*, 2023). *Octanal* ($C_8H_{16}O$) functions as a metabolite in biological pathways, contributing to energy production and cellular signalling (Human Metabolome Database, n.d.). *2-Tridecanone* ($C_{15}H_{30}O$) acts mainly as a flavouring agent and may modulate sensory receptors or serve as a metabolic intermediate (NCBI, 2025j). *Phytol* ($C_{20}H_{40}O$) exerts antinociceptive, anti-inflammatory, and antioxidant effects via inhibition of COX enzymes, scavenging free radicals, and modulating pain pathways (NCBI, 2025k). *1-Nonadecanol* ($C_{19}H_{40}O$) shows antibacterial and antifungal effects through disruption of microbial cell membranes and inhibition of essential enzymes (NCBI, 2025l). *1-Hexacosanol* ($C_{26}H_{54}O$) exhibits antimicrobial activity by integrating into microbial membranes

Table 2: GC-MS identified compounds of Durva Taila prepared in Tila Taila base.

Peak #	R. Time (min)	Area	Area %	Height	CAS #	Compound Name
1	10.966	2,196,968	0.15	859,668	25152-84-5	2,4-Decadienal, (E,E)-
2	11.454	4,480,656	0.31	1,466,027	2363-88-4	2,4-Decadienal
3	12.050	1,393,712	0.10	387,932	3564-95-2	(1α,3β,4β)-p-Menthane-3,8-diol
4	20.628	3,799,895	0.27	1,395,524	57-10-3	n-Hexadecanoic acid
5	21.920	5,949,515	0.42	2,023,634	765-4-8	1,11-Undecanediol
6	21.961	10,620,421	0.74	2,214,906	28080-85-5	10-Undecenoic acid, octyl ester
7	22.100	18,583,077	1.30	2,581,238	0-0-0	Sulfurous acid, pentadecyl pentyl ester
8	22.290	19,935,920	1.39	2,418,768	10573-35-0	Ether, 6-methylheptyl vinyl
9	22.361	11,276,461	0.79	2,928,006	0-0-0	Sulfurous acid, pentyl undecyl ester
10	22.435	24,769,480	1.73	3,578,329	157336-2-2	Hexadecanoic acid, (3-bromoprop-2-ynyl) ester
11	22.587	7,816,765	0.55	2,103,393	23470-0-0	Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)
12	22.645	5,124,045	0.36	1,625,909	34450-18-5	17-Octadecynoic acid
13	22.707	5,663,905	0.40	1,628,486	2938-55-8	1,5,9-Cyclododecanetriol
14	22.814	9,169,002	0.64	1,458,105	213738-77-3	Glycidyl palmitoleate
15	22.916	55,463,698	3.87	19,903,924	7501-44-2	Glycidyl palmitate
16	23.935	4,106,972	0.29	1,508,468	7459-33-8	9,12-Octadecadienoyl chloride, (Z,Z)-
17	24.395	259,250,590	18.11	67,638,816	7459-33-8	9,12-Octadecadienoyl chloride, (Z,Z)-
18	24.589	8,185,689	0.57	2,826,306	7501-44-2	Glycidyl palmitate
19	26.555	7,084,575	0.49	722,283	73285-35-5	(7R,8S)-cis-anti-cis-7, 8-Epoxytricyclo[7.3.0.0]
20	26.745	8,800,596	0.61	1,698,663	0-0-0	E,E-1,9,17-Docasatriene
21	26.825	19,498,361	1.36	2,153,543	55038-30-7	Guineensine
22	27.024	6,351,293	0.44	1,125,009	7501-44-2	Glycidyl palmitate
23	27.725	53,863,587	3.76	7,022,974	931-35-1	1H-Imidazole, 2-ethyl-4,5-dihydro-4-methyl-
24	27.760	17,405,754	1.22	7,557,317	1502-5-2	Cyclodecanol
25	27.840	87,277,145	6.10	8,026,818	41446-78-0	4-Tetradecene, (E)-
26	28.588	96,131,321	6.71	4,823,276	818-44-0	Vinyl caprylate
27	30.309	6,619,734	0.46	838,695	213738-77-3	Glycidyl palmitoleate
28	31.031	56,822,522	3.97	1,706,011	0-0-0	9-Methyl-Z-10-pentadecen-1-ol
29	31.610	23,310,651	1.63	1,110,287	0-0-0	3-Methylpent-2-ene-1,5-diol
30	32.018	34,474,396	2.41	1,604,339	629-89-0	1-Octadecyne
31	33.099	5,280,941	0.37	587,071	915-5-9	β-Sitosterol acetate
32	34.159	16,833,798	1.18	685,801	7390-81-0	Oxirane, hexadecyl-
33	37.158	13,381,142	0.93	1,336,787	915-5-9	β-Sitosterol acetate
34	42.071	321,497,934	22.46	10,237,551	177717-46-3	1-Hydroxy-3-(octanoyloxy)propan-2-yl decanoate
35	42.861	199,290,750	13.92	8,044,326	55282-12-7	Octadecane, 3-ethyl-5-(2-ethylbutyl)-

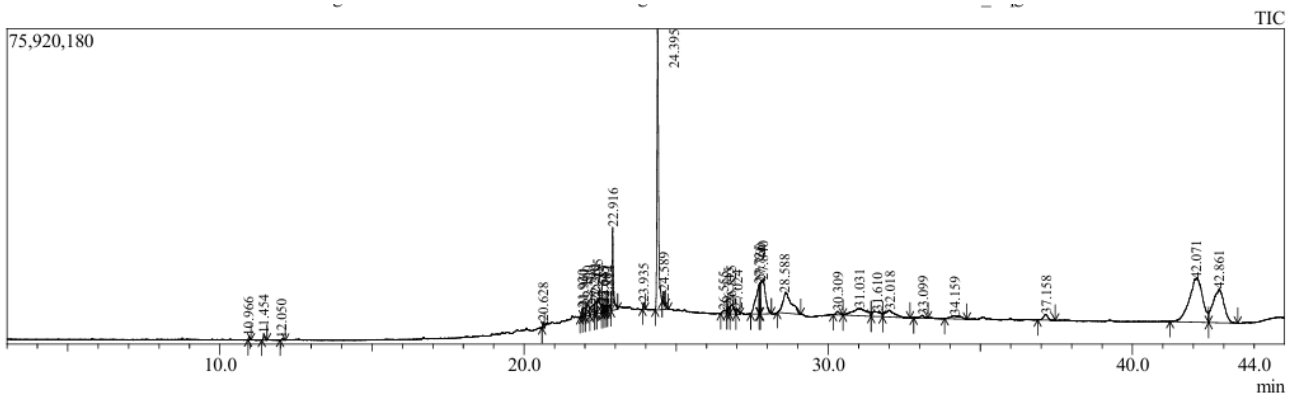


Figure 1: Chromatogram Tila taila Base Durva taila.

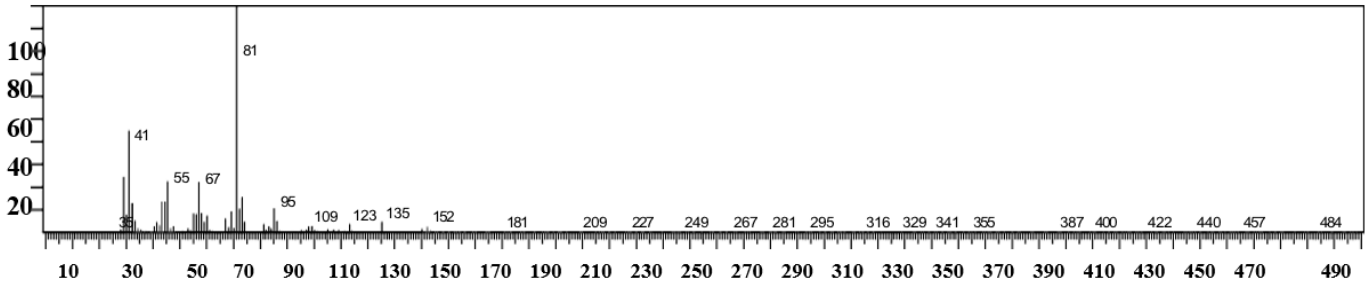


Figure 2: Retention time of compound of 2,4-Decadienal ($C_{10}H_{16}O$).

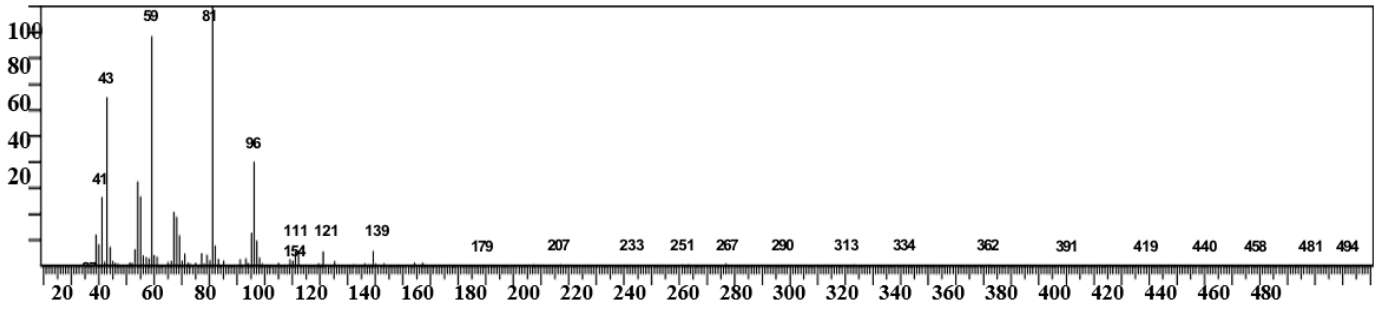
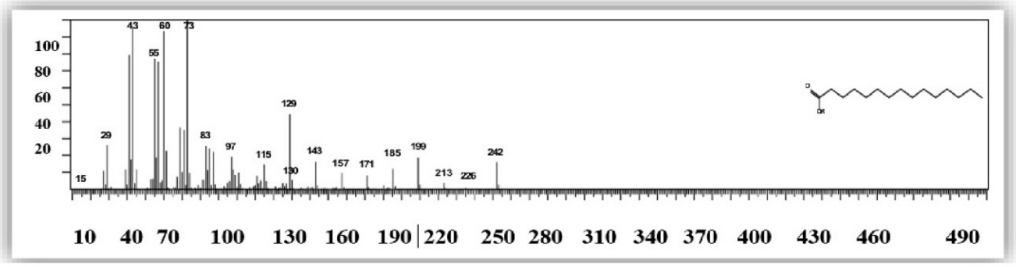
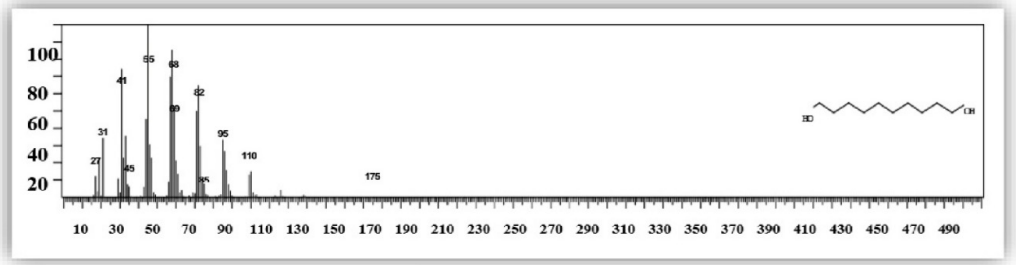


Figure 3: Retention time of compound of Decanoic Acid ($C_{10}H_{20}O_2$).



Palmitic Acid($C_{16}H_{32}O_2$).



1,10-Decanediol ($C_{10}H_{22}O_2$).

Figure 4: Retention time of compound of Palmitic Acid ($C_{16}H_{32}O_2$),1,10-Decanediol ($C_{10}H_{22}O_2$).

and disturbing their integrity (Ontosight, n.d.). *Palmitin* ($C_{19}H_{38}O_4$) acts as an algal metabolite with antimicrobial, antioxidant, and antifungal properties by disrupting microbial membranes and scavenging reactive species (Frazzini *et al*., 2022) *17-Octadecynoic acid* ($C_{18}H_{32}O_2$) provides anti-inflammatory and skin benefits via inhibition of inflammatory mediators, reduction of sebum production, and enhancement of skin-barrier function (Wikipedia contributors, 2025). *Erucic acid* ($C_{22}H_{42}O_2$) functions as a fatty acid with anti-inflammatory and antioxidant activity; it inhibits thromboxane A_2 synthesis, influencing platelet function and vascular homeostasis (Chanioti, Katsouli, & Tzia, 2021). *β-Sitosterol acetate* ($C_{31}H_{52}O_2$) promotes wound healing by enhancing collagen synthesis, angiogenesis, and immunomodulation; its anti-inflammatory effects occur via suppression of pro-inflammatory cytokines (Chanioti *et al*., 2021). These findings align with earlier pharmacological studies of *Cynodon dactylon*, which demonstrated hemostatic and wound-healing properties in experimental models (Kumar, Kumar, & Prakash, 2010; Patil & Jalalpure, 2004). Similarly, sesame oil has been reported to enhance drug delivery, protect against oxidative damage, and accelerate tissue repair (Anitha & Ramasamy, 2016). The synergy of these components explains the therapeutic potential of *Durva Taila* (Saxena, Saxena, & Rajput, 2014).

CONCLUSION

Durva Taila prepared in Tila Taila base contains multiple bioactive compounds with reported anti-inflammatory, antioxidant, antimicrobial, and wound-healing properties. The findings provide scientific support for its traditional uses in Ayurveda and encourage further pharmacological and clinical evaluation.

ACKNOWLEDGEMENT

The authors convey their deep appreciation to Dr. Suhaskumar Shetty, Principal, and the Clinical Research Facility of KAHER's Shri BMK Ayurveda Mahavidyalaya for their generous support.

ABBREVIATIONS

RT: Retention Time; **GC-MS:** Gas Chromatography combined with Mass Spectrometry.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

SUMMARY

Durva Taila, prepared from the fresh juice of *Cynodon dactylon* Linn. in a *Sesamum indicum* (Tila) oil base, is traditionally used for wound healing, hemostasis, and inflammation. The base oil not only facilitates drug delivery but also enhances tissue penetration and bioavailability of active constituents. Modern phytochemical studies indicate that *C. dactylon* contains alkaloids, flavonoids, triterpenoids, sterols, and phenolic compounds with antimicrobial, antioxidant, and wound-healing properties. Despite its therapeutic significance, comprehensive analytical data on *Durva Taila* are limited. This study employs Gas Chromatography–Mass Spectrometry (GC–MS) to profile its chemical composition, aiming to identify bioactive phytoconstituents that support its traditional uses and provide a scientific basis for its efficacy.

REFERENCES

Adams, R. P. (2007). *Identification of essential oil components by gas chromatography/mass spectrometry* (4th ed.). Allured Publishing Corporation 165675, N-Decanal. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/N-Decanal.

Anitha, T., & Ramasamy, P. (2016). Pharmacological activities of sesame oil – A review. *International Journal of Pharmaceutical Sciences and Research, 7*(1), 38–42

Betlej, I., Andres, B., Cebulak, T., Kapusta, I., Balawejder, M., Jaworski, S., *et al*. (2023). Antimicrobial properties and assessment of the content of bioactive compounds of *Lavandula angustifolia* Mill. cultivated in Southern Poland. *Molecules, 28*, 6416. https://doi.org/10.3390/molecules28176416

Chanioti, S., Katsouli, M., & Tzia, C. (2021). β-Sitosterol as a functional bioactive. In *A centum of valuable plant bioactives* (pp. 193–212). Elsevier. https://doi.org/10.1016/B978-0-12-822923-1.00014-5 Frazzini, S., Scaglia, E., Dell'Anno, M., Reggi, S., Panseri, S., Giromini, C., *et al*. (2022). Antioxidant and antimicrobial activity of algal and cyanobacterial extracts: An *in vitro* study. *Antioxidants (Basel), 11*(5), 992. https://doi.org/10.3390/antiox11050992

Human Metabolome Database. (n.d.). 2-Pentadecanone. Retrieved September 23, 2025, from https://www.hmdb.ca/metabolites/HMDB0031081

Kumar, S., Kumar, V., & Prakash, O. (2010). Wound healing potential of *Cynodon dactylon*: A review. *Journal of Ethnopharmacology, 132*(3), 756–761.

Majdi, M., Dastan, D., & Maroofi, H. (2016). Chemical composition and antimicrobial activity of essential oils of *Ballota nigra* subsp. *kurdica* from Iran. *Jundishapur Journal of Natural Pharmaceutical Products, 12*(3), e34133.

National Center for Advancing Translational Sciences. (2025). Nonadecanoic acid. Bethesda, MD: NCATS. Retrieved September 23, 2025, from https://drugs.ncats.io/drug/H6M3VYC62P National Center for Biotechnology Information. (2025a). PubChem Compound Summary for CID 5283349, 2,4-Decadienal. Retrieved September 7, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/2_4-Decadienal

National Center for Biotechnology Information. (2025b). PubChem Compound Summary for CID 2969, Decanoic Acid. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/Decanoic-Acid

National Center for Biotechnology Information. (2025c). PubChem Compound Summary for CID 985, Palmitic Acid. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/Palmitic-Acid

National Center for Biotechnology Information. (2025d). PubChem Compound Summary for CID 13849, Pentadecanoic Acid. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/Pentadecanoic-Acid

National Center for Biotechnology Information. (2025e). PubChem Compound Summary for CID 37153, Methyl Oleate. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/Methyl-Oleate

National Center for Biotechnology Information. (2025f). PubChem Compound Summary for CID 37153, 1,10-Decanediol. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/1_10-Decanediol

National Center for Biotechnology Information. (2025g). PubChem Compound Summary for CID 527459, Decanal. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/Decanal

National Center for Biotechnology Information. (2025h). PubChem Compound Summary for CID

National Center for Biotechnology Information. (2025i). PubChem Compound Summary for CID 8093, 2-Octanone. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/2-Octanone

National Center for Biotechnology Information. (2025j). PubChem Compound Summary for CID 16666, 2-Tridecanone. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/2-Tridecanone

National Center for Biotechnology Information. (2025k). PubChem Compound Summary for CID 5280435, Phytol. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/Phytol

National Center for Biotechnology Information. (2025l). PubChem Compound Summary for CID 80281, 1-Nonadecanol. Retrieved September 23, 2025, from https://pubchem.ncbi.nlm.nih.gov/compound/1-Nonadecanol

Ontosight. (n.d.). 1-Hexacosanol chemical properties. Retrieved September 23, 2025, from https://ontosight.ai/glossary/term/1-hexacosanol-chemical-properties

Pandey, A., Tripathi, S., & Sharma, V. (2014). Application of GC–MS for the identification of bioactive compounds from medicinal plants. *Journal of Pharmacognosy and*

Phytochemistry, 3(5), 147–150. Patel, D. K., & Patel, K. (2012). Phytochemical and pharmacological profile of *Cynodon dactylon* Linn. (Durva grass): A review. *Pharmacognosy Reviews, 6*(12), 147–153.

Patil, M. B., & Jalalpure, S. S. (2004). Hemostatic activity of *Cynodon dactylon* extracts. *Indian Journal of Pharmaceutical Sciences, 66*(6), 773–775.

Saxena, A., Saxena, M., & Rajput, N. (2014). Application of GC–MS in herbal drug research. *International Journal of Pharmaceutical Sciences Review and Research, 27*(1), 128–134.

Sharma, P. V. (2001). *Dravyaguna Vijnana* (Vol. II). Chaukhambha Bharati Academy.

Sharma, P. V. (2015). *Ashtanga Hridaya of Vagbhata, Sutra Sthana* (Chapter 12). Chaukhamba Orientalia.

Wikipedia contributors. (2025, September 23). *Linoleic acid*. Wikipedia. Retrieved September 23, 2025, from https://en.m.wikipedia.org/wiki/Linoleic_acid

Cite this article: Mudakappagol SY, Joshi R, Chauhan A, Gupta U. GC-MS Based Phytochemical Profiling and Pharmacological Evaluation of *Cynodon dactylon* (Durva) Extracted in a Sesame Oil (Tila Taila) Base. Pharmacog Res. 2026;18(2):609-15.