

Extraction and Analysis of Achyranthes Aspera Linn Oil

P. Prabhat Joshi¹, U.S.N.Babu Bheemiseti², P.Krishna Reddy³, K. V. Ramesh⁴

¹ Department of Chemical Engineering, IIT,Kharagpur-721302, India.

² RECS Polytechnic, Kasimkota, Anakapalli-531031. India.

³Department of Chemical Engineering, GICE, Visakhapatnam-530007, India.

⁴Department of Chemical Engineering, Andhra University, Visakhapatnam-530003, India.

*Author for correspondence: Email: umashankarb321@gmail.com; Tel: +91-7421001234

Abstract:

The present investigation aims on using achyranthes aspera linn(uttareni) oil as herbal oil and analyzing its physical and chemical properties. Achyranthes aspera linn oil is obtained by crushing leaves and extracting with suitable solvent. This processing method is safer when compared to commercial oil processing methods. The benefits of processing the leaves into oil are unknown to many. So, the research focuses to educate people about this alternative medicinal plant oil.

Keywords - achyranthes aspera linn, uttareni oil, solvent extraction.

I. INTRODUCTION

Achyranthes Aspera linn (Uttareni) plant is accessible and globally used medicinal plant. It is an annual shrub found distributed throughout the tropical and sub-tropical regions. South Asian countries top charts are obtained of Achyranthes Aspera Linn plant. It has wide spectrum of medicinal application in treatment of asthma, haemorrhoids, arthritis, ulcer, leukoderma, and pneumonia.



Fig 1: Roots of Achyranthes Aspera



Fig 2: Inflorescence of Achyranthes Aspera

2. Materials and methods

Achyranthes Aspera plants were collected from the nearby tropical area. Leaves were separated from the stems and were washed with clean water and crushed by mechanical stirrer.

Hexane as solvent added to the crushed pulp and stirred for half an hour for extraction. The product, miscella and cake is filtered and separated. Then miscella is subjected to simple distillation to separate oil and solvent. Finally, separated and purified oil is collected.



Fig.3 . Flow sheet for extraction of Achyranthes aspera oil

3. Results and discussion

The Achyranthes Aspera oil (AAO) thus obtained has been analysed for various physical and chemical properties using standard methods. The results thus obtained are presented in T-I. An examination of the properties of Achyranthes Aspera oil reveals that the density of this oil is higher than that of edible oils. T-II provides some important chemical properties of AAO.

T-I
VISIBLE CHARACTERISTICS OF
ACHYRANTHES ASPERA OIL

Property	Value
Sp. gr	1.484
Density	1484 kg/m ³
Smell	Pleasant
Appearance	Golden brown
MC	NIL

T-II
CHEMICAL CHARACTERISTICS OF
ACHYRANTHES ASPERA OIL

ACHYRANTHES ASPERA OIL	Theoretical value	Experimental value
A.V	1.7	1.683
S.V	145	144.25
I.V	181	176.9
P.V	10.5	10

4. Conclusions

The Achyranthes Aspera oil was obtained from crushed and extracted leaves by a sequence of steps and finally by solvent extraction with hexane followed by simple distillation to recover pure product of oil. The oil thus extracted was analysed for various physical and chemical properties and comparison is made between theoretical and experimental values.

REFERENCES

- [1]. A. Vijayan, V. B. Liju, J. V. John, Reena, B. Parthipan and C. Renuka, *Indian Journal of Traditional Knowledge*, 2007, **6(4)**, 589- 594.
- [2] Rashmi and R. Dayal, *Journal of Oil Technologist's Association of India*, 2003, 53-54.
- [3] S. K. Sharma, K. Vasudeva and N. M. Ali, *Indian Journal of Chemistry – Section B Organic and Medicinal Chemistry*, 2009, **48(8)**, 1164-1169.
- [4] N. Vasudeva and S. K. Sharma, *Journal of Ethnopharmacology*, 2006, **107(2)**, 179-181.
- [5] Govindasamy and M. P. Balasubramanian, *Journal of Health Science*, 2009, **55(5)**, 701-708.
- [6] R. Vijayaraj, K. N. Kumar, P. Mani, J. Senthil, T. Jayaseelan and G.D.Kumar, *International Journal of Biological & Pharmaceutical Research*, 2016, **7(1)**, 23-28.