

(Peer Reviewed -Referred-Open Access-Scholarly Journal)

Md. Bilal et al., (2024). Usage of Ash and Alianthus excelsa Roxb. (Maharukh) and Ferula assa-foetida (Hing) powder in agriculture as pesticide and plant growth promoter, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 63-66.

**INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY RESEARCH & REVIEWS**journal homepage: www.ijmrr.online/index.php/home**USAGE OF ASH AND ALIANTHUS EXCELSA ROXB. (MAHARUKH) AND
FERULA ASSA-FOETIDA (HING) POWDER IN AGRICULTURE AS
PESTICIDE AND PLANT GROWTH PROMOTER****Mohammed Bilal, Chetana Bhamre and Dr.T. T. Shaikh**Department of Zoology Maulana Azad college, Dr. Rafique Zakariya Campus, CS Nagar,
Aurangabad, India.**Submitted: June 18, 2024****Revised: June 24, 2024****Accepted: June 27, 2024**

How to Cite the Article: Md. Bilal et al., (2024). Usage of Ash and Alianthus excelsa Roxb. (Maharukh) and Ferula assa-foetida (Hing) powder in agriculture as pesticide and plant growth promoter, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 63-66.

Keywords

Ferula assa-foetida,
Agriculture,
Chemical compounds,
Insecticide

Abstract

This proposed research work is about use of Ash, Alianthus excelsa Roxb. (Maharukh) and Ferula assa-foetida (Hing) powder in agriculture. Ash contains macro and micro elements which increase bunching of roots, prevent death and decay. Alianthus excelsa Roxb. (Maharukh) and Ferula assa-foetida (Hing) powder have chemical compounds like alkaloids, phenolic compound and volatile oils that are act as insect resistance. In preference of chemical insecticide inoffensive as well as inexpensively available, they decrease side effect on plants and promote health and growth in plants.

1. Introduction

Ash or wood ash can be used as a fertilizer used to enrich agricultural soil nutrition. In this role, wood ash serves as a source of potassium and calcium carbonate, the latter acting as a liming agent to neutralize soils. Average burning of wood results in about 6–10% ashes. Wood ash can also be used as an amendment for organic hydroponic solutions, generally replacing inorganic compounds containing calcium, potassium, magnesium and phosphorus.

Alianthus excelsa Roxb. (Maharukh) is a tree belonging to family of Simaroubaceae found in central and southern part of India, it is also known as plant of heaven, mostly use in Ayurvedic formulation. According to traditional knowledge claims along with pharmacognostica phytochemical pharmacological and future aspect of this plant. Emerging evidences also suggested that search is still continuing for harnessing active



(Peer Reviewed -Referred-Open Access-Scholarly Journal)

Md. Bilal et al., (2024). Usage of Ash and *Alianthus excelsa* Roxb. (Maharukh) and *Ferula assa-foetida* (Hing) powder in agriculture as pesticide and plant growth promoter, *International Journal of Multidisciplinary Research & Reviews*, Vol 03, No. 03, pp. 63-66.

compound from nature and combating human illness and it also lead the way to search out new active natural and novel semi synthetic and synthetic compounds(Int.J.Pharmacol,6(5);353-550-2010).

Ferula assa-foetida Hing powder endemic to Iran, Afghanistan and central Asia it contain large amount of sulphur and essential oils, asafoetida have pungent smell, actually hing is dried latex exuded from the rhizome or tap root of many species of *Ferula*. Perennial herbs of carrot family. The asafoetida contains about 40-60% resin, 20% endogenous gum, 10- 15% volatile oil, 1.5 to 10% & ash. Volatile oils component have 2-butyl-propenyl-disulphide, diallyl sulphide and dimethyl trisulphide.

2. Materials and methods

In this research work we use Maharukh leaves, Hing powder, Distilled water, Mixer, cloth, beaker and sprayer. In Set number One we take 25 gm. of *Ailanthus excelsa* Roxb. (Maharukh) and ash. Chop it well mix with distilled water and grind it, close the jar for 5 days, filter the extract, add 5ml sample and 1.5gm of *Ferula assa-foetida* and ash in 100 ml water for spraying. In set number 2 we take 100 gm of *Alianthus excelsa* Roxb (Maharukh) chopped it mix with 250ml distilled water and grind it, close the jar for 5 days filter the extract, add 5ml sample and 1.5gm of *Ferula assa-foetida* in 1000 ml water for spraying on plants.

3. Observation



Figure.1: Treated Plants



Troubled plants



Figure 2: Treated Plants



Troubled plants

4. Result and Discussion

The plants like tomato, pigeon pea and other fruiting plants which are treated with Ash, *Ailanthus excelsa* Roxb. (Maharukh) and *Ferula assa-foetida* convalescent results as contrast to affected plants, above Pictures

(Peer Reviewed -Referred-Open Access-Scholarly Journal)

Md. Bilal et al., (2024). Usage of Ash and *Alianthus excelsa* Roxb. (Maharukh) and *Ferula assa-foetida* (Hing) powder in agriculture as pesticide and plant growth promoter, *International Journal of Multidisciplinary Research & Reviews*, Vol 03, No. 03, pp. 63-66.

intelligibly show that the use this powder in agriculture act as organic pesticide as well plant growth promoter.

Recent studies including pharmacological and biological have also shown that asafoetida possess several activities, such as antioxidant, antiviral, antifungal, ant diabetic, antispasmodic, hypotensive and molluscicidal. Asafoetida has great medicinal importance.

5. Authors Contribution

The writers affirm that they have no connections to, or engagement with, any group or body that provides financial or non-financial assistance for the topics or resources covered in this manuscript.

6. Conflict Of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

7. Plagiarism Policy

All authors declare that any kind of violation of plagiarism, copyright and ethical matters will taken care by all authors. Journal and editors are not liable for aforesaid matters.

8. Sources Of Funding

The authors received no financial aid to support for the research.

References

- [1] Bhandari B.S. and M.L. Gupta 1972.studies on the digestibility and nutritive value of *Alianthus excelsa* Roxb.Indian Vet 49; 512-516.
- [2] Kandu P.and S.Lasker, 2008 Fraction and some chemical studies on *Alianthus excelsa* Roxb. Seed protein, Soc 85; 853-843.
- [3] Lavhale, M.S.and S.H Mishra, 2007, Nutritional and therapeutic potential of *Alianthus excelsa* Roxb.Pharmacogonasy rev, 1:105-113.
- [4] Sahai.k.R.L.M and Bhatia1985, Study of *Alianthus excelsa* Roxb.Indian Drugs22:395-395.
- [5] Gitanjali S Bhavsar,Sandip R Sanap,Harshal M Bhamre,Atul K Galande,Saneha S Rajput Beneficial use of vekhand and hing powder in agriculture as organic insecticide, New insight of microbial biology.ISBN :978-93-82414-45-2.
- [6] Chevalier, a, 1996 .The encyclopaedia of medicinal plants 1 edition, New York USA, pp: 59.
- [7] Database, 2000 Medicinal plants use in Ayurveda, Central council of research in Ayurveda and Siddha New Dehli, India pp: 50-59.
- [8] Dinesh kumar, Z.ABhat, P, Singh, M.Y Shah and S.S Bhujbal*Alianthus excelsa* Roxb. Is really a plant of Heaven, International journal of Pharmacology 6 (5):535-550-2010?
- [9] Mahran GH, El Alfya TS, Ansari SM. A phytochemical study of volatile oil of Afghanianasafetida. Bull Fac Pharm Cairo Univ. 1973; 12:101-7.
- [10] Buddrus J, Bauer H, Abu-Mustafa E, Khattab A, Mishaal S, El- KhrisyEA, et al. Foetidin, a sesquiterpenoidcou marin from *Ferula assa-foetida*. Phytochemistry. 1985; 24:869-70.
- [11] Subrahmanyam V, Sastry VL, Srinivasan M. Asafoetida. J SciInd Res B. 1954; 13:382-6.



(Peer Reviewed -Referred-Open Access-Scholarly Journal)

Md. Bilal et al., (2024). Usage of Ash and *Alianthus excelsa* Roxb. (Maharukh) and *Ferula assa-foetida* (Hing) powder in agriculture as pesticide and plant growth promoter, *International Journal of Multidisciplinary Research & Reviews*, Vol 03, No. 03, pp. 63-66.

- [12] Shankaranarayana ML, Raghavan B, Natarajan CP. Odorous compounds of asafetida. VII. Isolation and identification. *Indian Food Pack.* 1982; 36:65–76.
- [13] Rajanikanth B, Ravindranath B, Shankaranarayana ML. Volatile polysulphides of asafetida. *Phytochemistry.* 1984; 23:899–900.
- [14] Dikshi A, Husain A. Antifungal action of some essential oils against animal pathogens. *Fitoterapia.* 1984; 55:171–6.
- [15] Kamboj VP. A review of Indian medicinal plants with interceptive activity. *Indian J Med Res.* 1988; 1988:336–55.
- [16] Aruna K, Sivaramakrishnan VM. Anticarcinogenic effect of some Indian plant products. *Food Chem Toxicol.* 1992; 30:953–6.
- [17] Thyagaraja N, Hosono A. Effect of spice extract on fungal inhibition. *Food Sci Technol (London)* 1996; 29:286–8.
- [18] Al-Awadi F, Shoukry M. The lipid lowering effect of an anti-diabetic plant extract. *Acta Diabetol.* 1988; 25:1–5.
- [19] Shrivastava V., Bhardwaj U., Sharma V., Mahajan N., Sharma V., Shrivastava G. Antimicrobial activities of Asafetida resin extracts (a potential Indian spice) *J Pharm Res.* 2012;5:5022–5024.
- [20] Kamble V.A., Patil S.D. Spice-derived essential oils: effective antifungal and possible therapeutic agents. *J Herbs Spices Med Plants.* 2008; 14:129–143.

